OE CAI: Computer-assisted Instruction of Old English

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ABSTRACT

This article offers a general but thorough survey of Computer Assisted Instruction as applied to the Old English language from the work of the late 80’s pioneers to December 2001. It embraces all the different facets of the question: stand-alone and web-based applications, Internet sites, CD-ROMs, granaries, dictionaries, general courses, reading software, extra-linguistic material, exercises, handouts, audio files... Each instruction item — whether it be a website, a Java exercise, an online course or an electronic book — is reviewed and URLs are provided in footnotes. These reviews are accompanied all throughout by the pertinent theoretical background and practical advice.

KEYWORDS:


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1. INTRODUCTION

Computer-assisted language learning (CALL) and computer-assisted instruction (CAI) are normally associated with modern living languages. However, the learning of ancient languages, such as Old English (OE), may be equally enhanced through the use of computer technology. It would seem that little use would be made of computer technology in such traditional and long-established subjects as OE and History of the English Language (HEL). But, indeed, there now exists a considerable number of software applications, both Internet-based and stand-alone, designed for students enrolled in an OE or an MEL course. Naturally, learning a dead language is quite different from learning a living one, albeit not wholly. We shall first deal with the differences.

In the first place, the reasons why a student engages in studying Present-Day English (PDE) or OE are obviously different. One learns English in order to be able to exchange information through reading, writing, listening and speaking, either for personal pleasure or, more likely, for educational and employment prospects. Students of OE, on the other hand, will never need to converse or write in OE to obtain information and they will seldom have to do any listening. Reading would be the top or only priority and the reasons for reading OE are exclusively scholarly: literary criticism, religion, philology, history, anthropology, sociology, historical linguistics... OE syntax, to give just one example, is not studied in order to be able write well, but rather to equip oneself with a sound basis on which to carry out research, say, on religion in Anglo-Saxon times, or write a thesis on syntactic change, on concessive clauses, on rhetorical devices, or write a descriptive grammar of OE prose in Ælfric. OE is therefore studied and taught at universities, especially in the final years or at a postgraduate level, and only a very small number of students and scholars are involved. On the other hand, PDE learning and teaching is universal.

This has immediate consequences on the amount of financial support for OE computer-assisted instruction and on the organizations providing it. While English as a Foreign Language (EFL) is a multi-million industry whose computer courses may be found on the shelves of any large store, — for they are commercial commodities, just like best-sellers, music CDs, or cameras —, software for OE, on the other hand, is often the personal endeavour of a determined lecturer with some knowledge of computing who wants to help his students more than is customary. Naturally, it is normally a non-profit enterprise, which obviously does not appeal to commercial publishers and little investment, whether from public or private universities, can be expected for the implementation of an expensive product.

The discipline of English as a whole (and certainly the world outside our racket) always seems vaguely beinused by the affinity medievalists have for high-tech. When a server is down or a print queue doesn’t respond, your chances are usually better — if not by much — when you call on the Anglo-Saxonist in your department (rather than, say, the poststructuralist) to take it in hand. McNellis (2000)
with a small potential market. This, again, has an important bearing on the very nature of the software developed. While EFL computer programmes are very often attractive multimedia state-of-the-art applications, OE software lags far behind in this respect. We cannot expect OE lecturers to be experts in OE and expert programmers at the same time, to produce top-quality material. As Kitao (1995) says, it is a fact that “making computer materials requires a knowledge of developing [...] teaching materials and also of computer programming”, and that “CAI materials are more complicated than textbooks, so it is difficult to make good ones”. This brief depiction, of course, does not do justice to some outstanding Internet sites nor to sonic very recent excellent editorial projects on CD-ROM, which I will review to further down.

As for the actual practice of teaching the OE language seems largely, we can only say that by and large it seems unaffected by new technologies. Although we all use our computers to write and file our class-material, it is very seldom that we find lecturers actually using computers in their OE classes. According to Davis (2000:7), the coniputer had influenced his research and adninnistrative career at university “beyond belief and recognition”, but had had “no effect whatsoever” upon his teaching, until he started using an net-connected laptop and a TV monitor, and a completely new and much more efficient way of teaching was unfolded to him. It seems contradictory that most lecturers are no longer computer-illiterate but still feel reluctant to employ computers in their teaching practice. The problem is that many lecturers “are not comfortable with high technology” and often “only manage to recommend to their students CD-ROMs or Internet sites which are relevant to the syllabus, not having enough time to properly integrate CALL into their regular teaching, or help learners individually by providing activities in self-access mode” (Jones, 2000:365-366).

However, when it comes to research, the picture is different. As Wilcox (1998) puts it, “although they study the past, [OE scholars and Anglo-Saxonists] have not been shy of embracing new technologies”, and he goes on to mention the ANSAXNEI, the Beowulf Project, the TOEDC, various hypertext editions of OE poems. In this chapter we shall dwell upon mainly other instances of computer technology for OE.

II. APPLICATIONS OR WEBSITES?

It is a long time since computers were unconnected to a net and CALL software had to be installed and operated on one’s computer. Yet, this is the picture that first comes to many teachers’ minds when they hear the word CALL. But nowadays, not only can language instruction be carried out online and the software operated from a server, but the language applications may be installed on our computer while still requiring many excursions to the Internet for it to be implemented. The scope of CAI has increased enormously with the advent and popularisation of the Internet, so nuclei so in fact that CAI can only be defined if the view medium is taken into account too.

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In our opinion, CAI should be viewed as the inevitable conibination of Internet applications and authoring tools\(^1\), which means that a computer-assisted instruction project will contain many diverse elements which need not have been authored by the same person. What is more, it cannot. As Jones (2000:361) says: “Plainly, a new era in CAI, has begun. The early, unimpressive phase of ‘drill and kill’ has passed. The fast improvement in technology, the advent of the CD-ROM, and especially that of the Internet, have enhanced the creative learning opportunities of the medium.” As Ball (1996:17) said: “While gopher, telnet and FTP (traditional Internet tools) could properly be considered “computing” in 1994, the Web has transformed the Internet into a vast public library of text, images, sound, software and other electronic resources”. With respect to new OE and Anglo-Saxon computer software and developments, the reader is referred to the Old English Newsletter\(^2\) “Cirencester” section, and Bernstein (1997, 1998), Caie (1999), Foys (1999, 2000), and Martin Arista (1999).

A further element should be included in our definition: the use of computer software as a tool in the classroom. Just as overhead projectors have been the order of the day since the seventies, we now have the opportunity of using video projectors connected to our portable computers and of making the most of such programmes as Microsoft PowerPoint. Let’s imagine we are translating an OE poem in class. We may want to present vocabulary items first and then the lines to translate. A PowerPoint presentation is much more eye-catching and effective, and besides, as Kitao (1995) points out, “it would be wasteful and expensive to do this on paper, but computers are an economical way to do it”.

We should however minimize the role of the teacher or instructor or should we be misled into thinking that learning will take place without his guiding hand, especially when providing relevant Internet links for the students to visit. Jones (2000:362) is quite explicit in this respect: “if the computer program is undertaken as part of an institutional course . . . the teacher’s role will be far from minimal.” I know Sroni experience that leaving students alone facing the Internet is inefficient, time-consuming and sonnetics discouraging. Roper (1996) also warns that “the Web seems very easy to use, but the enormity of information out there can indeed baffle one, especially if one has little experience with the Internet.” Not infrequently, our students do not know how to navigate the Web and teachers should not expect them “to be able to use a new medium automatically by themselves, no matter how user-friendly it might appear” (Roper, 1996).\(^3\) Before the CAI project starts, we should teach our students about hierarchies of information and about the different “advanced search” options and the various information-retrieval systems. See the “intellectual skills of categorization and generalization”, says Roper (1996), “are becoming more crucial in an age of vast amounts of discontinuous information”. Besides, all too often the role of the student-navigator is passive, they cannot “talk back to the Web”, as Roper (1996) says, a problem which may be overcome by teaching them not only about the crucial importance of organizing their browser’s “favorites carpet” but also of designing a personal links page of their own with a wysiwyg editor. Again Roper (1996) hits the bull’s eye: “I found that the Web and the Labyrinth\(^4\), for all their new-age sophistication, are still largely passive.
Instruments of information. That is, as you explore the Web, you may jump from link to link, and thereby actively flip to different pieces of information, but when you get there, you just look at or read what is on your screen; rarely do you interact with it, add to it, ask questions of it, manipulate it. Furthermore, you put only the links others have created". What is more, they should also be instructed on how to use some website-extracting software so that they can later modify the information they have obtained. Finally, apart Goni simply providing links, students should be asked questions whose answers must be found on the web, or assigned projects whose implementation requires visiting reconsidered sites and retrieving information for subsequent treatment.

III. GENERAL OE COURSES & GKAMMAK (Stand-alone or Web-based Applications, and Websites)

In this section we analyse OE CAI applications, whether they be stand-alone or web-based, or websites composed of a varying number of inter-linked pages, with or without Java applets associated with them, with or without frames. As we shall see, not all of them go to the same depths as far as contents are concerned: or have the same degree of quality in scholarship standards, design, or pedagogical features. For example, a common factor which all these courses suffer from is the fact that the students taking them are expected to have had little linguistic training, so that the courses must first go through "the parts of speech, the structure of a sentence, the skill of parsing, the basic concept of an inflected language, the relationship between subject and object", as complains Drout (1999:29). Besides, students do not always get the help they need. Paraphrasing Kitao (1995), computers should be programmed to give immediate feedback by confirming that an answer is correct; by giving the correct answer, by providing hints if the answer is incorrect. The fact remains that very few applications or websites provide intelligent feedback. As Kitao (1995) says, CAI should contribute to individualizing learning: "Students can study materials related to their individual goals and what they need or are interested in, with the appropriate difficulty level and at their own pace. Computers can analyze the problems of each student, and the teacher can help individual students with their problems based on the analysis". In fact, "CAI has the potential to enhance individualized instruction without requiring an increase in the number of teachers" (Kitao, 1995). Stand-alone and web-based applications can "release a learner from his or her teacher's supervision at an early stage" (Jones, 2000:363). Finally, as far as quality is concerned, we are aware that "not all of these Web-based programs, which are now steadily increasing in number, undergo the same degree of rigorous trial and evaluation as commercial CD-ROMs." (Jones, 2000:361). As with any other product, computers and software can only do what they are programmed to do, and each kind of software has its own limitations. For example, such a useful feature as copying and pasting is impossible with the kind of JavaScript applications used by itiany OE teachers/prograniniers. The basic problem is that computer programmes "tailored to a particular user's needs" are expensive (Kitao,
and the more advanced the programme or the more complex and graphically-loaded the
website, the more expensive the hardware needed. Normally, software is always one step
ahead of hardware, and students (and universities too) may lack the financial resources to
keep abreast of new new developments.

III.1. The Pioneers

It is to be expected that the first applications for learning OE on a computer should be stand-
alone programmes created by OE lecturers with an interest or some training in computing.
The first software to be made generally available was J. Carroll’s Flashcard programme, a
DOS vocabulary drill programme allowing students to test themselves on OE vocabulary. It
has a customizable dictionary and its vocabulary list may be adapted to students’ particular
needs. When presented with flashcards, students may not enter the ModE translation, just
check whether their mental guess is correct. They can, however, choose the number of words
they will be presented with in the list. Once they have finished the drill, they may view the
entire flashcard list. In 1992 the author integrated this application into a more complete one,
called Old English Grammar Tutor, which contains drills on NOUN, PRONOUN and VERB
morphology. Another seminal application is McCrae-Gibson’s 1988 DOS-running Learning
Old English: Computer Exercises, an electronic version of his Introduction to Old English
whose exercises match the book’s lessons. Although it was a real breakthrough, the
programme has not stood the test of time. Usage instructions are not too easy to understand
and the fact of its being a pre-mouse era programme makes usage difficult. Students are
basically asked to identify syntactic functions and to translate sentences into PDE —and
so on into OE. These translation exercises are limited by the fact that the students’ input is
clicked against just one possible correct answer, no variants or alternatives being admitted.
The sequence of “events” may not be altered, except in the exercise on verbs. If the students
fail to enter the correct answer, they are eventually asked whether pertinent grammatical
explanations should be shown. Finally, there is a unaugmented commercial DOS-running
application to learn OE morphology, distributed by Libcration Philology Software, which
presents NOUN and VERB morphology, together with a flashcard vocabulary programme.
Explanations are followed by self-testing quizzes (multiple choice, blank-filling and parsing
tests).
111.2. The Essentials of Old English

In 1998, J. Smith and J. Anderson, of the University of Glasgow, took OE learning software one step further by developing, as part the STELLA Project, a computer application called The Essentials of Old English, made up of two "Books", one for absolute beginners, the second for more advanced students. The software is easy to install and use, and takes up a little more of 1.5 megs of hard-drive space. "Book 1" consists of an INTRODUCTION, a BASIC GRAMMAR, a series of EXERCISES and a GLOSSARY, apart from the EXERCISE SECTION accessible by clicking a button. The grammar section is a basic introduction to OE SPELLING AND PRONUNCIATION, to CLAUSE AND PHRASE SYNTAX, and to the main MORPHOLOGICAL PARADIGMS, "Book 2" contains a FOREWORD, a list of ABBREVIATIONS AND PHONETIC SIGNS, an INTRODUCTION with basic bibliography, a more extended but still basic GRAMMAR, with the same sections as that of "Book 1", a STUDY GUIDE for the students, and a GLOSSARY. Both "books" are pretty much the same in structure. Besides, they share the reading texts, only in "Book 2" the translated version pops up only upon the user's request. This would be more useful if the student could write his own translation and then check, but he is only allowed to read. As for the glossary, that of "Book 2" has an extra feature: a basic PDE-OE DICTIONARY. The format of the exercises is quite similar to that of Carroll (1992) and McCrae-Gibson (1988). Of course, it's no longer a DOS-running but a Java application, but what students are asked to do, how they do it and how they are told their input is right or wrong is basically the same. In a typical exercise, the student answers the questions by clicking on a particular word in a sentence; by ticking a check box and writing the correct word in an empty box; by writing the missing word in a sentence; by writing the PDE translation of the OE word missing in a sentence; or by translating into PDE. If the answer is correct, he is told so by a tick which appears at the end of the sentence. If it is incorrect, he is invited to try again just once, but he is not told what was wrong, not even which grammar section he should revise. In a course meant for self-study, the student is simply left on his own and advised to read the GRAMMAR before continuing with the exercise and find for himself where he went wrong. "Book 1" exercises deal about PART OF SPEECH RECOGNITION, ERROR RECOGNITION, DEMONSTRATIVES, and VERB FORMS. We deem the Exercises to be highly deficient in terms of amount of practice: there are far too few sentences in each exercise. For example, the translation exercise is made up of just one sentence. "Book 2" has exercises on NOUN AND VERB PHRASES, on PART OF SPEECH RECOGNITION, on the USE OF THE CASES, on ADJECTIVES, and on SUBORDINATE CLAUSES. The format of the exercises is as follows: either writing the translation of isolated OE words (nouns, verbs; a vocabulary exercise rather than a grammar one) or writing the OE translation of PDE phrases and words (verbs, nouns, pronouns, adjectives, conjunctions; inflected for different cases, tenses, degrees) inserted in the OE sentence, or vice versa. The "books" contain just text, no graphics and very little hypertext, not even the possibility of copying and pasting into another application. In other words, computer possibilities are left unexploited and the programme is just used to read and fill in blanks. Such a useful feature as would have been reading the texts and, through links,
reaching all the words in the glossary or relevant paradigms in the morphology section is simply non-existent. There are links only in the Grammar’s Table of Contents to go the relevant sections, but no links within the grammar. Highlighted words in the reading texts are not really links: the mouse left button simply works as the right key in many Microsoft applications, i.e. a sort of contextualized brief explanation bubble pops up. As for content and level, both “books” are basic, so that the use of the application in an OE or HEL subject in a Philology course would be limited to the first classes of the course. Essentials does not contribute much as far as innovation is concerned: we believe that pretty much the same could be achieved by reading a textbook and doing exercises on paper.

III.3. Calloe

CALLOE stands for Computer-Assisted Language Learning of Old English, a Windows-running programme whose core application is MAOET — Morphological Analysis of Old English Texts. It was developed in 1996 by A. Miranda, J. Calle and J.L. Triviño of the University of Málaga, Spain, has undergone several improvements, and is currently used by OE students at this university. MAOET contains several modifiable texts which can be inputted for morphological parsing: excerpts from Appolonius of Tyre, the OE texts from manuals by de la Cruz and Cañete. However, new texts may also be inputted by users for analysis, though they must be typed with the fonts provided. Parsing may be carried out in various manners. First, three morphological analysis options are given: long analysis, translate analysis and disambiguate. Second, the actual analysis may be implemented on the whole text or on the selected word(s). By combining these options, the parsing is performed on selected words, sentence by sentence or the whole texts. The output is presented in a new window and may be saved as a txt file. CALLOE also contains exercises on morphology. Typically the student is given a word, for example habban, together with a parser-like description of another form of the same word for example “VerbWeak3Plu1st,2nd, 3rd**PresSub”, and he is asked to write his guess in a blank box, habben in our example. Unless the right answer is keyed in by the student or inserted by clicking on the solution button, the programme does not allow moving on to the next questions. The option exists to limit the grammar elements to be practised (strong and weak nouns; strong and weak adjectives; pronouns; strong, weak, preterite-present and anomalous verbs; irregular words). The morphology to be practised in the exercises can be edited by the user for it is contained in a database, though the actual questions and the database itself are not user-modifiable. Finally, CALLOE also contains a grammar of OE, which can be opened from the help button. The grammar is devoted exclusively to nominal (nouns, pronouns, adjectives) and verbal morphology, plus a descriptive chapter on phonology. An extra feature is that some of the OE texts are presented with an audio-player for they have accompanying sound-files. Finally, all OE special characters (long vowels with macrons included) and phonetic symbols may be chosen from the Fast Character Window. The font files are included in the package for
manual installation. In our opinion, the parser has a couple of flaws. First, the output of the analysis is not context-specific. It gives all the possible meanings of a word. For example, the OE word rice may be an adjective (powerful, rich) or a noun (reign, power), and it is potentially inflected for many cases, persons, genders, and numbers, so that the parsing gives all 20 possibilities. The user must then choose the correct analysis for the text and sentence being translated. Secondly, the layout of the morphological definition provided is very unfriendly to the reading eye.

III.4. Multimedia History of Old English

D. Burntley of the University of Sheffield has recently published the first CD-ROM of the Multimedia History of the English Language. It contains the entire corpus of OE verse and four fully searchable very extensive prose texts. It also features an illustrated gazetteer of Anglo-Saxon sites; a phonetics module using sound, animation and glossary; an illustrated history of Anglo-Saxon England; plus sections on morphology, word formation, writing systems and dialects. Combining historical and cultural background with linguistic history and using images, animation and audio, it exploits hypertext to provide a history of the language which can be approached at more than one level of sophistication. It is interactive, giving the user not only the bare facts, but also the opportunity to search extensive texts and to view images of manuscript source material.

III.5. Hypertext stacks

Finally, there exist some linguistic applications for Macintosh computers dealing with Indo-European and Germanic: *Indo-European Roots, Grimm's Laws, Comparative Reconstruction*.

III.6. Old English Aerobics at the University of Virginia

OE computer-assisted instruction was taken one gigantic step further by P. Baker of the University of Virginia in 1999. His *Old English Aerobics*—composed of a grammar, exercises, reading texts, sound files, and a glossary—can be used either as a stand-alone application or online. Actually, the OEA online version is more complete than the downloadable one (more chapters—15 instead of 8—more exercises, more reading texts). At the time of writing this contribution, OEA was still "being reorganized and rewritten to accompany a new Old English grammar, which will be available both on the Web and in print form" (Baker, 1999a). OEA is a mixture of webpages and Java applications, which means that a standard Java-enabled Web-browser is all the student needs on his computer.

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apart from Real Player for the sound files. One definite improvement on previous software is precisely that all the texts be either read or listened to. Of course, OE not being a living language, OEA lacks voice-recording and pronunciation features, but an “application that relates to Old English,” obviously, can dispense with such components and concentrate on interactions with the text” (Bakcr, 1999b). OEA has 8 sections or chapters: an INTRODUCTION, with clear instructions about how to use the method and do the exercises; SENTENCE ELEMENTS; CASES: PARTS OF SPEECH; the BIBLICAL NARRATION of Adam’s fall with accompanying exercises; AGREEMENT; VOWELS and PALATAL MUTATION; READING TEXTS: The Life of St Æthelthryth, The Story of Caedmon, The Story of Caedmon y Wulf and Eadwacer. The different chapters’ mainpages can be accessed from the OEA principal page called Workout Room.

The chapters’ mainpages are divided into three horizontal frames: the upper frame contains the name of the course (OLA), a link to the Workout Room, and a little icon indicating that a Java application has been started; the middle frame contains relevant but extremely basic grammar explanations; and the lower frame is reserved for the Real Audio reproducer. The Java screens are divided into several horizontal sections: the title bar with the name of the exercise; the button bar allowing to move from one exercise to another or from one sentence to another within an exercise, to submit a choice, to get help, and to see one’s score; right underneath, several windows for the text, the instructions, the feedback messages, and the multiple-choice or blank-filling exercises. Feedback is given immediately after answering. There are basically two types of tasks: find tasks, such as “find nouns in the sentences”, require the student to simply mouse-point at a noun in the text and left-click the mouse, while in the multiple-choice or blank-filling types of tasks the “submit” button has to be used to input the answer. The Instructions window may contain hyperlinks to grammar explanations, though these are extremely basic. As for the reading texts, they are presented differently, though still in a Java screen. Each reading text has a mainpage giving basic information and a link to the corresponding audio file.

There exist, in our opinion, several faults in OEA. First of all, it assumes very little linguistic knowledge on the part of the students and can only be considered as material suitable to complement a classroom- or book-based course, though this is a problem many other applications suffer from, as we have already stated. Even though OEA is a much more complete method — from both CAI and linguistic viewpoints — than The Essentials of Old English, it still remains a simple introduction to OE. Another feature which is lacking is that the texts, because they are accessible only from within the Java screens, cannot be copied and pasted onto a word-processor for further exploitation by the students. This inconvenience is partially obviated in the online version of OLA by possibility of downloading the text in pdf format, although, unless one has the full Adobe Acrobat software, it can only be read or printed, but not changed. Also, once an answer has been inputted or an exercise finished, it cannot be redone, unless the student exits the Java application and executes it again.

However, OLA has many pros. First of all, it is free. Secondly, apart from being an application that may be used online, it may be downloaded to be run as a stand-alone
application on one's personal computer. Furthermore, permission is given to install it on a Web server for any lecturer’s students to use. Thirdly, there is a little box on the upper bar of the Java apps indicating the total number of correct answers. This is particularly important: learners should have opportunities, as Simic (2000) says, not only “to make decisions that control or influence the computer task” but also “to monitor their own learning” and “self-check and correct their own errors.” Fourth, we have also found it quite handy that the Java apps should start and terminate automatically when browsing to and fro from the different chapters’ mainpages. Fifth, a particularly useful feature of OEA is the fact that all the words in the texts and sentences are hypertext links. Indeed, highlighted words are straightforward left-clickable links to relevant historical, biographical or cultural information, which appears in the central frame of the text’s mainpage. Besides, all words, whether highlighted or not, can be rightclicked to access information of various kind. Some of the information items of these contextualized menus, namely “view grammar,” “look up word,” “look up idiom” and “view clause type”, appear in small ad-hoc windows which pop up in the bottom right corner of the screen. The other two produce different results: “select clause” highlights the clause against a black background, and “play audio”, obviously, plays the audio file (fully or by parts). Mention should also be made of the fact that the hyperlinks in OEA’s reading texts are not underlined nor written in another colour. This is something the author himself purported to achieve by using SGML tagging (Cf. Baker, 1999b). This feature of OEA alone is enough to make it a much more advanced application than previous ones. Last, but not least, the author has made the source code file-writing instruction publicly available, even though “it is incredibly tedious to write the SGML files you need for this application” (Baker, 1999a).

III.7. Verbix

So far we have seen web-based and javascript applications to learn or practise OE grammar. There exists an interesting commercial piece of software that generates inflected verb forms in many languages —OE included— called Verbix 4.2 for Windows. The application is also available as a free internet service under the name of WebVerbix, though this version does not have as many features. In order to be able to view special characters correctly on the screen, the latest browser versions are recommended and Unicode® codification must be selected or supported, though some vowels with macrons seem unwilling to show properly. The consultation page has buttons linking to the glossaries, which can work in any direction, e.g. from OE to PDE, or vice versa. The commercial version is very useful for OE students for it is able to convert any inflected form into an infinitive, and it can very well supplement an electronic dictionary, where verb entries are naturally in the infinitive.

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III.8. Hwæt! Old English in Context at Georgetown University

Back in 1996, J. Ball, of Georgetown University, created *Hwæt! Old English in Context*, a little course to acquire OE vocabulary at an elementary level "for those who would like to learn some basic Old English without having to hold a grammar book in one hand and a dictionary in the other" (Ball, 1996a). What we have found innovative is the application to OE learning of a long-standing pedagogical tenet in modern language learning: vocabulary is learned if vocabulary is presented to the students in context, if they are allowed to use their knowledge of the world, their intuition about OE words' reflexes in PDE, or their cognates in other languages. The course is made up of seven chapters entitled COUNTING, NATURE, GREETINGS, NAMING, MONTHS & SEASONS, FISH, FOUL & FOUR-FOOTED BEASTS, and THE BODY. No translations of the texts are offered to the student, nor is there a bilingual glossary. The words contained in the glossary and some words in the texts or sentences are hyperlinks to picture tiles. Besides, some words in the glossary can be listened to individually (audio files). *Hwæt!* is a mixture of non-academic features, such as the pictorial glossary, and rigorous academic edition: all texts, or rather sentences, are excerpted from the *Toronto Dictionary of Old English Corpus*. *Hwæt!* is obviously more of a personal experiment than a really usable course, though the author herself has used it with her students, she admits having had to resort to other methods "including concordances for morphology and syntactic constructions and some translation exercises" (Ball, 1996a). She is also absolutely right when she says that her method lacks all kind of feedback whatsoever for the students to monitor their progress. Besides, it does not allow them to automatically move "from the known to the unknown, acquiring the grammar and lexicon of OE along the way" (Ball, 1996a). In other words, the programme does not accommodate any change according to the student's progress. Of course, this seems quite difficult to achieve just on *html* language, and *Hwæt!* is not the only programme lacking this feature. In any event, there is no doubt that this vocabulary-acquisition method is entertaining and effective.

III.9. Learning Old English

In 1997 J. Jebson published *Learning Old English* on the internet. There now exist two versions, an unmaintained one and an updated but still unfinished one (2001) which only runs on Microsoft *Internet Explorer* and allows Latin-extended characters. From the CALL point of view, the course is poor for it consists of just a mainpage with a Table of Contents whose items point to the rest of html webpages, each webpage being a chapter. Now, these webpages do not have hyperlinks whatsoever. They are just text pages to be read or printed. However, from a linguistic point of view the information is philologically and linguistically sound and quite complete. The author decided to write *LOE* urged by his need to present readers with a guide that would overcome the difficulties he himself had experienced when studying OE on his own by using Mitchell & Robinson's *Guide to Old English*.
III.10. King Alfred at Wharton College

A recent OE CAI application on the Web is Michael Drout’s King Alfred, A Teacher-Controlled, Web-Interfaced Old English Learning Assistant. This is a translation application which coaches the student towards competence in OE. What makes this programme different from both The Essentials of Old English and OEA is the help and feedback functions. The student’s help requests — available at all stages by clicking on any word — are stored by the programme to be consulted at any time. One of the fortés of King Alfred is that the application “using a sorting algorithm that [the authors] are currently upgrading to a true ‘intelligent agent’ prioritizes the grammatical areas for the student to review” (Drout, 1999). For example, the application delivers the following feedback: “King Alfred suggests that you review the Verb, particularly the Preterite-Present Verbs; the Noun, particularly the Accusative Case, and the Adverb”, and the student may react to the relevant section in the online grammar by clicking on any of the underlined words. The application can also give students a list of the lexical items for which they had requested help in the translation phase, which can be printed out. This means that the application “provides individually customized feedback to students” and “individualized advice and study suggestions” (Drout, 1999). Another advantage of King Alfred is that the paradigm is for each word arc provided in full. Secondly, once students have inputted their translation, they can compare it with the programme’s suggested translation and assess its quality. The authors rightly believe that this method is better than one in which, because of a simple word-order change, a different lexical choice or a word misspelt, the application will mark the translation as wrong, thus demotivating students. Thirdly, OE instructors can easily change or update the contents to meet their own preferences or requirements: “A series of easy-to-use pop-up menus in a database allows a teacher to input the sentences (with the characteristics of each word) that he or she will use in the program” (Drout, 1999). The program is claimed to speed up OE learning: according to the author, by the end of a fourteen-week course in 1999, Drout’s students were able to translate not only OE prose but poetry (The Wanderer, The Seafarer, The Dream of the Rood).

III.11. English 401 at the University of Calgary

Another OE computer-assisted course, integrated within a University of Calgary syllabus, is English 401, a thorough fully- fledged distance-education Internet-based online course created by Murray McGillivray. All the pages are interlinked so that navigation within the site proves quite easy. Besides, the logo picture at the top of each page includes links to each of the main sections of the course: Course Information, Lessons, Texts, Grammar, Credit Exercises, Links, and Site Index. Likewise, all lessons may be accessed from any one lesson through the links at the bottom of each page. What is more, users always know where exactly they are: this information is provided in a line just underneath the logo on each page.

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page, and each of the components of this line is a link to the relevant section. This may seem trivial but it certainly is not. In fact, it is an extremely useful feature that well-designed pages should always contain.47

Each of the 15 lessons* has a short introduction followed by the *Tasks* to be done by the students. There are various types of tasks, which can be reached through hyperext linking words. By way of example we shall mention the tasks required in Lesson 5 (Weak Verbs): reading the *The Voyage of Ohibre*97, reading the Grammar webpages on Strong Feminine Nouns, the verb *heon* and the Personal Pronouns, *flashcard* exercises on weak nouns, following some links to relevant websites on other servers, of non-linguistic —and non-scholarly— content, like the *King Alfred the Great Website*80, and finally sending a “succinct, relevant message” to the course’s listserver. The *grammar* webpages are basic as far as content is concerned. albeit clear, well-explained and sufficiently illustrated. These pages contain very few links, consisting mainly of plain text, which makes them a computer alternative to a textbook. but this is a contents area within a large website, a layer which by definition should provide only core information. One serious flaw in this section is the fact that OE syntax is only approached superficially and indirectly in the chapter on the use of the dreaded subjunctive. *Flashcards* are composed of an “instructions” section and a basic Java application in the lower half of the webpage. but it does not allow writing the answers and submitting them for correction. The credit exercises are not available publicly, so that we have been unable to evaluate them. The course’s texts are not necessarily hosted at the U. of Calgary’s server, but elsewhere on the Internet51, which precisely supports our definition of CAI, and CAI as having to include the Web. External links of this sort are to be expected and advisable. since some very high quality and useful editions of OE texts have already been published on the Internet and it would be wasteful not to take advantage of what already exists in the web.52 A typical text webpage is divided into three horizontal frames. The upper frame is fixed and contains links to the other sections in the course. The middle frame is itself divided into two vertical frames, the left one for the OE text and the right one for the PDE translation. At the beginning of the OE text there is a link to the audio file, should one want to read and listen to the text simultaneously. The lower frame is the bilingual glossary. Each word in the text is a hyperlink to the relevant letter section or word in the glossary, which gives not only the PDE equivalent but also morphological information. Some glossaries, such as that for *The Voyage of Ohibre*, contain a links to all instances of each word in the text, which is a useful feature, should one wish to see the word in different contexts.

### 11.1.2. Old English Lessons at Brown University

Ec-Ing Ong53 published in 1999 a series of 16 OE tutorials called *Old English Lessons*.54 The main page contains the hyperext links to the *tutorials* or lessons. These tutorials are meant to complement a textbook- and classroom-based course. Each one consists of a single webpage with instructions on how to do the lesson’s javascript exercise, which is activated through a
button at the bottom of the page. Exercise pages typically consist of several frames in different colours. Each lesson has only one exercise of the gap-filling type, the gap being an empty box. The gap-filling exercise, in the top left frame of all the tutorials, is made up of just seven questions, or rather seven OE sentences. The dictionary entry form (nominative or infinitive) of the word is written in brackets immediately before the box, and, besides, the student can consult the PDE translation underneath. After writing in the answer, the submit answer button must be clicked and feedback is given to the student in the right frame. The lower right frame shows the full OE sentence together with the word entered by the student. The lower middle frame contains information on OE special graphemes. The top right frame contains information about the feedback frame underneath, which in turn provides two types of information about the student’s input: if the answer is wrong, a choice of four possibilities is offered to the student so that he may re-enter the answer; if the answer is right, further information on the word or on any other item or feature of the sentence is given. As far as linguistic content is concerned, the tutorials are concerned almost exclusively with OE morphology at an elementary level. All the OE sentences are attested sentences, and relevant references are given. One of the technical problems with this tutorial is the way special OE characters have to be keyed in. For example, the thorn, “Þ”, cannot be written simply by pressing Alt+0254, which would be cumbersome enough in any case, but the combination “&thorn;” must be entered instead, otherwise the programme will not accept the answer, the reason being, according to the author, that “the javascript and the dynamic fonts are very uncooperative” (Ec-Iing Ong, 1999).

### III.13. Old English Pages

There exists an unfinished and unauthorised site hosted on a Russian server called Old English Pages containing several sections: Saxonica, an Anglo-Saxon Knowledge Book (most of whose contents structure dangerously resembles C. Ball’s Hweol, while the grammar section is acknowledged as being excerpted from M. Drout’s King Alfred Grammar); an Old English Library with some unedited OE texts (no notes, no references, and no hypertext); Old English Study Tools composed, among other tools, of an “Old English Glossary” (with an input box for the word to be searched in a web-supported database) and a “Latin-Old English Interglose”. The site looks promising on first visiting it, but its internal structure is somewhat opaque, for it contains sections which are called the same but whose contents are slightly different.
III.14. Old English Exercises at the University of Massachusetts

In 2001, University of Massachusetts S. Harris published *Old English Exercises*, which contains applications on the site that are directly related to an OE CAI. The first is a series of six basic javascript exercises for students to practice OE morphology (DEMONSTRATIVES AND ARTICLES, PERSONAL PRONOUNS, CASES, GENDER, and NUMBER). The type of exercise is very simple indeed: the student identifies what he is asked (a demonstrative, a case, a number) either by typing it in or by clicking the check button for feedback. The second application is the *Beowulf Parser*, which can parse *Beowulf* for personal and demonstrative pronouns. The third application is the *Old English Grammar Chart*, which may be consulted by students while doing online exercises.

III.15. The Historical Grammar of the Old English Language

An online OE grammar is *The Historical Grammar of the Old English Language*, created by C. Babev. The webpages contain a few links to sound files (to hear some words pronounced) and a little hypertext to explain some terms (mainly names of languages). The table of contents is laid out both at the top and the bottom of each page so that the student can navigate easily in and out of the page. For example, there is a section on Old English names and users must manually choose “Western European” in order to view characters correctly. The grammar is made up of ten chapters (devoted to pronunciation and morphology) and a couple of appendices (one with three plain OE texts and their PDE translations, another about OE lexicon).

III.16. Handouts on the web

This is another way the Internet can be integrated into an OE CAI program. Handouts and class notes or lectures may be downloaded by students from a server. Some *Handouts about OE grammar* may be found at the Adam Mickiewicz University (Poznań) School of
English HELI. website (History of the English Language and Linguistics): OE
PRONUNCIATION AND SOUND CHANGES, and NOUN AND VERB MORPHOLOGY. Likewise, R.I. Binnick, of the University of Toronto, provides Handouts and Problems about Language Change70, some of which are html files and some pdf. In 1999 R. Stevick71 published an online pdf-format book called Case in Old English72. This is yet another facet of CAI: making notes, lectures and books electronically available to students. Also, by performing advanced searches on Internet searching engines that allow to ask for specific file-types, like Google73, one may find, among other documents, PowerPoint presentations, such as G. Lampert’s A History of English74. Finally, University of Kentucky K. Kieman’s webpage with OE paradigm"75.

IV. READING

IV.1. Introduction

One important component of any 011 course is reading. As we have seen, texts of variable length and degree of scholarship may be incorporated into OE CAI applications and websites, so that students can learn grammar or translate. However, students may also need to access texts independently from an OE CAI course or application. Undergraduates may have been required to read a particular author or work and write a philological, linguistic or literary essay, while postgraduate students may want to study textual variants and manuscripts. An OE CAI site of application should therefore contain selected links to the huge number of websites offering OE texts, either to be downloaded or used online, whether they are reading applications or webpages. whether they are presented as simple text or hypertext, with or without translations, critical analyses, notes, bibliographical references, links to other resources, etc. But the supervising eye of the teacher should always be there. As Jones (2000:363) says, “the sheer wealth of material on offer places even more responsibility on the teacher” for, “due to the Web’s lack of structure, there is real potential for disorientation”.

The first and obvious place to go to is, of course, is a text clearing house, such as the Oxford Text Archive76 —where we may download the entire Dictionary of Old English Corpus in Electronic Form77 should we need everything ever written in Old English: the York-Helsinki Parred Corpus of Old English Poetry, the Anglo-Saxon Poetic Records, King Alfred’s version of St. Augustine Salloquiues, a collection of Anglo-Saxon charters, and Alfred’s Orosius—or the Online Book Initiative ftp site78 —which also houses the ASPR79, a PDF translation of the Anglo-Saxon Chronicle, and some translations of Beowulf. OTA and 0131 contain mostly public domain freely redistributable material.80 Other places to visit are virtual libraries offering online material, like the Labyrinth Library’s OE Literature section81. Before we move on to specific texts and works, we must dwell for a while on hypertextuality and electronic editions.

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IV.2. The rationale: Hypertext, hypermedia and electronic books

One of the great advantages of turning a codex or paper book into an electronic book is the possibility of reading it without temporal and spatial constraints. If a book is composed of many smaller documents (chapters, lessons...), notes, graphics, references to other works, glosses, etc., its transfer to an electronic format enables the reader to reach and see these parts simultaneously. As McGinn (1995) says, “computerization organizes [...] sequential engagements with nonsequential forms of knowledge and experience” and, according to Silver (1997), “along with its dynamic appearance, another striking feature of hypermedia is its lack of traditional linearity”. He adds: “Unlike the linear, largely sequential writing which characterizes print-based publications, well-designed hypermedia makes possible - if not promotes - non-linear or multi-linear presentations. Instead of offering readers a single, sequential path to follow, hypermedia projects put forth many, often interlinked paths, roads, diversions, and excursions”. This is what Nilsen (1997) calls “multilinearity”. Both of them follow Nelson (1981, 0/2), who coined the term hypertext: “electronic text as nonsequential writing, a text that branches and allows choices to the reader, [...] a series of text chunks connected by links which offer the reader different pathways.” Another term, frequently used in connection with hypertext, is hypermedia or multimedia. Silver (1997) gives the following definition: “Multimedia elements can include text, photographs, images, and graphics, video and sound clips, and basic animation. They can exist side by side on a single screen; they can exist upon or overlapping one another; they can be hidden, revealed with a strategic button click or entered command”. To sum it up, “multimedia environments allow for the addition of visual and auditory information to a text in order to improve comprehension”. (Chon & Plass, 1997:63) These electronic texts can then be “distributed in self-contained forms (e.g., on CD-ROM disks, like the Perseus Project) or they can be structured for transmission through the Network” (McGann, 1995).

Let us point out what the practical advantages of hypertext are in OE CAI or in electronic editions of OE texts. Firstly, it is now possible to teach text and context at the same time. The ideal OE CAI programme should be like a encyclopaedia containing an OE grammar, an OE dictionary, critical editions of OE literature, articles on Anglo-Saxon culture, a vast collections of graphics, etc., to sum it up, it must be a specialized encyclopaedia. Mitchell (1995) is actually the book equivalent of what an OE CAI programme should be like. By combining language and culture in digital form and by using multimedia, the OE language would no longer be “just a list of grammatical paradigms or lexical items”, for it would be “intimately associated with all kinds of verbal and paraverbal behaviors, an acoustic and visual context that is indissoluble from the larger societal context in which the words are uttered” or written (Kramsch & Andersen, 1999:31). Language would thus become culture. At the same time, as Kramsh & Andersen (1999:31) say, culture would no longer be “just the factual pieces of information that textbooks present in the form of culture capsules on foreign mores, but [it would be] produced and reproduced under our very eyes, on the screen”, through what Anglo-Saxons said or, rather, wrote.
Secondly, an electronic edition of an OE work presents many advantages over a printed one, the most obvious one being that “the apparatus of the edition can be hyperlinked to the texts themselves so that the relevant notes, variants, sources, and glosses may be accessed with the click of a mouse” (Lionarons, 2000). Besides, “two or more texts can be compared side by side in adjoining frames, searches can be performed quickly and painlessly, and the texts themselves may be manipulated to reveal or conceal manuscript context, scribal interpolations, and emended or doubtful passages” (Lionarons, 2000). Finally, the editor “need no longer choose between offering a diplomatic edition, a critical edition, or a simple manuscript transcription: all three can be provided simultaneously, and the interested student is thereby afforded an opportunity to see both the homilist and the editor at work” (Lionarons, 2000). To this we may add another reason, namely, that electronic editions are “a lot cheaper for people to get access to (and easier)” (Lee, 1990). Also, by definition, an electronic edition is constantly changing, improving and growing: “its contents and its webwork of relations (both internal and external) can be indefinitely expanded and developed” (McGana, 1995). To give an example, Lee (2000: Foreword) says that at the moment of publishing his edition on the web, “the hypertext linking is almost non-existent but that can be added to in the future”, and that “any corrections needed will not result in future reprints and further costs for the end user.”

From the point of view of the reader too, electronic editions have advantages. Lomicka (1998:41) claims that “computerized reading with full glossing may promote a deeper level of text comprehension”. In the case of OE texts, where most words are unfamiliar at an initial stage, links or glosses “may help to limit continual dictionary consultation that may hinder and interrupt the L2 reading comprehension process” (Lomicka, 1998:41). However, other authors, like Ziegfeld (1989:363) warn that reading a hypertext may take up to five or six times as long as the same text in printed format. So how much glossing or linking should an electronic text contain. Do links really improve reading comprehension o do they hinder it? Davis & Lyman-Hager (1989:42) point out that this may depend on the students themselves: “hypertext is ‘invisible and unobtrusive’, allowing the user to consult as much or as little information as s/he desires”. Besides, multimedia programme annotations are not limited to textual information and can take the form of video, sound, and pictures, as Chun & Plass (1996) point out. In other words, “computer aided glossing can provide much more than the ‘traditional’ glosses (definitions, translations, and grammatical notes)” (Lomicka, 1998:42). This implies that, the new multimedia annotations, such as images, sounds, cultural, historical and geographical references, and guiding questions could enhance comprehension; cf. Martinez-Lage (1997:149). Besides, access to these annotations is immediate and “not as intrusive as the steps required in looking up words in the dictionary” (Lomicka, 1998:42) or consulting encyclopaedias, other editions, or articles, we may add.82

Now, what should hypertext look like? Where should links be present? What sort of information should they point to? Glosses are sometimes presented obtrusively, especially if the file is in html format, for links are always presented in another colour and underlined. Links to other sites or other parts of the same site should belong to another frame, while
hypertext should not look like liypertext, which is what OEA achieves. It is important that electronic editions should have a hierarchical index that may be accessed at all times, that is, from the different screens of the application, from the different webpages or frames of a website. It should be “easy for a reader to return from anywhere in the liypertext to the starting point or home screen, so that readers are rarely disoriented while reading or searching” (Miall, 1999). Often, as we shall see, texts appear in one of the various frames of the website, but in order to read the text a single-window layout is preferable. As Miall (1999) says, “excepc for pop-up comment boxes, useful for short editorial comments or annotations, texts can only be read in full screen mode” for it is an “environment fosters the integrity of the single text and the sustained attention it requires from readers”. Now, this may cause trouble in the case of webpages containing frames. But we shall come back to this later on.

Following Bernhardt (1991) and Davis & Lyman-Hager (1997), we believe that textual links should target the following types of information. First of all, words must be recognized, so links should be provided to access a glossary, preferably to be viewed in a different frame. Alternatively, a dictionary database (Access or mysql, for example) should maybe available in another frame. This glossary should provide lexical information, whether in the form of a translation or a definition. Secondly, it should contain phonological and graphemic information. This is important in the case of OE not only because phonology is an essential component of an OE course but also because OE spelling varies according to dialect and period. Some of the applications reviewed here do in fact contain sound files for individual words. Thirdly, to reinforce comprehension of the text, grammatical information should be given, morphological and syntactic. Fourth, in order to improve global understanding and help students relate text and ideas, intratextual links should be provided. Of semantic and linguistic nature. We have noticed that, in ilic applications and text editions reviewed in this chapter, most of the hypertext links are external, i.e., they point to other sections of the website or to documents hosted on other servers. This may be due to ilic tiresonic process of hypermarking text or else to insufficient awareness of the dual nature of links. As Roby (1999) points out, “Glosses are characterized by their focus. Some point the reader back to ilic text, whereas others bring new information to it.” Lastly, ilic reader’s prior knowledge should be increased by means of cultural references links (history, philosophy, religion, biography, art, etc.).

A distinction should be drawn between the use of hypertext for study purposes and its use to read literature, the latter use being opposed to by many writers. According to Miall (1999), one of the significant advantages of the electronic medium is the fact that it is “practically unlimited in terms of space (and large colour graphics take up a good deal of space), bringing benefits impossible to achieve with a printed text”. At the same time, this author warns that “the availability of other texts and colour graphics also threatens to displace the kind of literary reading I have been describing, and substitute links to further texts and pictures for the sustained attention that yields literary understanding”. Students of Anglo-Saxon literature should therefore be aware that following all links to understand and
contextualize a literary work is not the same as reading it. The primary task of reading should perhaps be carried out on a non-hypertextual electronic text or a printed one, if available.

Other useful features, which most applications and websites analyzed lack, are readers’ utilities. It would be most convenient for readers of an electronic text to be able to create bookmarks so that they can return to the same point in the text from anywhere in the hypertext” (Miall, 1999). Likewise, small windows could be called up for readers “to enter their own comments”, so that they can later be saved on disk or exported to a word processor. In a translation application, this can be achieved simply by inserting a text box. Finally, a feature which all the sites lack is a links basket. If working on our own computer, we may store sites visited and links in the Favourites Folder. However, when working in a computer lab or in a cybercafé, students won’t have this possibility, so that a links basket which can be emptied into a file at the end of the session would prove very useful.

A final caveat about electronic books is the fact applications have massively migrated to the Internet in the last few years. As Hall (2000) says, “In some respects the greatest value of the Internet is the incredible amount of primary materials now being made available free and online. While proprietary learning programs and CD-ROMs once dominated teaching technology, the advent of the Web has inspired a popular revolution.” The danger is that students should be sent to websites containing editions of poor scholarly standard. Students should therefore be trained to be critical and enquire about the authors, their sources of information, the server the resource is hosted in, the date of creation or publication, how it compares to other printed or web-based resources, whether it is referenced in academic literature or linked to from reliable websites. “Navigating the vastness of the Web presents a challenge to teachers and students alike, but it also introduces another means of teaching students to learn to use their judgement and skills of critical evaluation” (Hall, 2000). Lee & Cooper’s (2000: Review, Information Quality) give similar warnings and add that, even if the original site or application passes our quality control test, “the linked material may be inferior in quality to the site to which it is linked — and one must evaluate that as well” (Lee & Cooper, 2000: Review, The Pitfalls). Duggan (1994) summarized the situation thus: “All too often in the preparation and publication of electronic texts, the chief criterion for choosing a text to be ‘input’ for the electronic edition is expiration of copyright. Computerized literary scholars have so far demonstrated a tendency to exploit the computers for quick-and-dirty textual solutions, to expend their efforts upon compiling massive amounts of textually uneven materials rather than upon producing reliable scholarly editions.” The situation has changed a little, but many of the web-based editions reviewed here are not wholly scholarly, though still usable but students.

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IV.3. Non-scholarly editions

There are many sites where students may find OE texts to read and often what is needed is not a scholarly or hypertext edition but just the plain text or the translation. Of course, texts published as part of an application or a well-designed website may be hyperlinked and linked to accompanying glossaries, notes, or translations, which prove invaluable help for students. But simpler stuff should not be looked down on and students need to be told where to get it, though they should be aware of the scholarly quality of what they are using.

For example, students’ course projects may take the form of websites and sonie are available online. M. Heroux has published a webpage with some OE poetry as his course project. The five poems are presented in OE, PDE and as a scanned images. The texts are: *Almsgiving, Bede’s Death Song, A Ciarni, Deo, The Seafarer.* Likewise, H. Ahrens has nioitied a page containing the OE poem *The Wife’s Lament*, a free translation, a line-by-line translation. together with an introduction, a commentary on the translation and bibliography. Each line in the OE text has a number, which is a link to that line’s translation in the line-by-line translation, which in turn contains a link to get back to the original text. Another webpage called *A Brief Old English Text Page* was published in 1996 by high school teacher B. Zahn, and the texts were selected “for no other reason that they were relatively short” and could be typed in “pretty quickly”: *The Dream of the Rood, Beowulf* and *The Battle of Brunanburh.* is also available online. both in OE and PDE, with the feature that each OE line is linked to the corresponding PDE translation. Another OE poem, *The Ruin*, is presented in a two-framed page, witli the OE on the left one and either of two translations on the right one. Also, the *Vercelli Book* OE poetry is offered online by the Associazione “Rete Civica Vercellese” at their webpage, called “II Vercelli Book”. An unedited version *Rune Poem* in OE, has been published online in the non-academic *Anglo-Saxon Heathenism* website. One website to visit to access biblical texts online in OE is M. van der Hooft’s *New Anglo-Saxon Bible*, which is still unfinished but already contains a good number of texts, not only from the Old and the New Testaments, but also other non-biblical Christian texts. An interesting site is *The Polyglot Bible*, edited by M. Davies, of Illinois State University. It contains the entire Gospel of St. Luke in 30 languages, OE included, and allows full-text searching and side-by-side viewing. The Internet Sacred Text Archive server provides the *Complete Corpus of Anglo-Saxon Poetry* and *Beowulf* (PDE and OE). Sonetines, it is just a translation that our students may need. Translations are equally useful and there are many sites offering PDE versions of OE works. apart from the clearing houses mentioned above. For example, there exists a site containing an unfloured translation of *The Battle of Maldon*, one of the Anglo-Saxon poems most widely used in OE courses, plus links together with maps and pictures of the actual site of the battle. Some translations from OE works are also published commercially on CD-ROM: the *Anglo-Saxon Chronicle, Beowulf* and the *Codex Junius* can be found in the *Literature on CD-ROM*, published by Seedy Press. Also, *The English Poetry Full-Text Database* is a commercial CD-ROM published by ProQuest Information
and Learning. It claims to be a database of the complete English poetic cannon from Anglo-Saxon times. The great majority of the texts are out of copyright, so that many university libraries give members access to the collection for them to use freely. Finally, L. Rodrigues electronic editions of Anglo-Saxon poetry are sold online by Nospine.com.104

Many lecturers too mount websites with OE texts for their students to read. R. Liuza109 of Tulane University, has published a number of copyright-free OE texts10 for his 1999 Introduction to Old English Course.111 These texts correspond in the main to those found in Mitchell & Robinson's Guide.112 J. Tinkler113 of Towson University, provides OE prose excerpts for his History and Development of English Prose course114 (from the Anglo-Saxon Chronicle, King Alfred, Ælfric and Wulfstan), with an interlinear translation of his own. M. Seibert, of the University of Virginia, has published a page called An Old English Translation Aid115 in which we may find links to online hypertext editions of Caedmon's Hymn, the Dream of the Rood and to some OE Riddles. Caedmon's Hymn is presented two frames; the left one present the hypertextual edition and the right one the glossary, and by clicking on any word of the text grammatical and lexical information about it is given in the glossary. The Riddles, however, are shown by means of three frames. What is interesting and an example of how the Web may be used in OE CAI is the fact that what is shown in the extra frame is a picture of The Exeter Book, a picture which is hosted on a different server located in the England and which belongs to an institution unrelated to the author's. However, the danger of relying on external material is that if it is removed or changed to another server, or if the server is down, the webpage is left blame, which is exactly what I found happened to the Dream of the Rood.116 In 1999, A.M. Bruce117 of Florida Southern College, mounted a website called Roof, and Ruthwell, the Poem and the Cross118 where the Dream of the Rood may be read online. On the mainpage the author says that "the information herein, while interesting and certainly worth perusing, is not meant to be exhaustive; only basic theories, commentaries, and explanations are offered". The poem may be viewed in different fashions: a PDE translation, the OE version,119 and interlaced PDE and OE text. Once again, it is a pity that the poem should not be hypertextual and that there should be no glossary. Also available is a transcription of the Ruthwell Cross's runes plus photographs of the cross from different angles. We must also mention an advertising-supported well-designed website called Beowulf in Hypertext120, created by R. Ismail121 and K. Ghosh,122 offering not only the poem but also a considerable amount of information about it. The mainpage contains two frames: the left one for the table of contents (INTRODUCTION, THE TEXT, CHARACTERS, HISTORY, SEARCH, SELF QUIZZZ, LINKS, and CREDITS) and the right one for viewing the various content items. The TEXTS may be read either in OE or PDE, and chapters are chosen through a list-box. Each chapter or section of the poem, whether the OE or the PDE edition, is then displayed on the right frame, and next to it there is a differently-coloured table containing a summary and relevant bibliography. As with other reading material on the web, it is a pity that the poem should not be hypertextual, i.e. no links to a glossary. To the same line in the other text edition, to relevant items in the Characters or History sections. In any case, no glossary is available. We can't see why the website was...
entitled “in Hypertext”. Another flaw is that the two texts may not be collated, which would have been possible by dividing the right frame into two horizontal ones. The only hypertext in the poem’s editions are, in the first place, the hardly-visible note numbers, which hyperlink to the notes section at the bottom of the page, and an icon placed between the text and the notes, which sends the user to the equivalent OE or PDE version, as the case may be. One of the strong points of this website is that the poem’s background is made available to the users through some of the items in the History section (particularly “Manuscript” and “Archeology”). The javascript SELF QUIZZ section is still very much unfinished, the only one published dealing with characters in Beowulf. Since the site is commercially supported, from time to time browser windows with advertisements annoyingly open up. Finally, an interesting website about The Wanderer is Utah Valley State College lecturer R. McDonald’s The Wanderer Project. There are images from The Exeter Book, a non-hypertextual edition of the poem, five different translations into PDE, and a Glossary, among other pages.

More reliable are the electronic editions offered online by the library servers of several universities. The University of Toronto Library has published poetry edited by members of its Department of English. The website, which can be searched in various ways, is called Representative Poetry Online and the available texts are: Caedmon’s Hymn, Bede’s Death Song, and the ASPR edition of Beowulf and an interlinear translation by Gummere.

IV.4. Scholarly electronic online editions

In this section we are going to review some well-designed websites offering high quality editions of OE works.

IV.4.1. Old English Edition Reader

In 1993, some years before he created OEA, P. Baker designed a scholarly application called Old English Edition Reader, containing the full editions of Wulf and Eadwacer, The Wanderer, The Bottle of Brunanburh and a partial edition Beowulf. It is “a program for displaying and manipulating ‘on-line editions’ of Old English poetry” and the aim was to “offer readers the ability to construct their own critical versions by providing structured access to variant readings or variant texts”. The interface has three sections. one for the text, another for the textual notes, and a third one with information on the line the cursor is on and on whether there exist textual variants of the word the cursor is on. The programme shows a totally edited text: capital letters, punctuations, macrons, editor’s corrections and variants. Each text has different sources and readers may swap between them, including their own edition, which is precisely the strong point of the application, for they can enter their own corrections and emendations.
IV.4.2. *The Anglo-Saxon Chronicle* at Georgetown University

T. Jebson’s\(^{134}\) project to publish a critical edition of the *Anglo-Saxon Chronicle\(^{135}\)* was started in 1994 but was apparently abandoned early. Of the seven manuscripts only the Parker MS has been tackled.

IV.4.3. *Appolonius of Tyre* at Georgetown University

In 1995 C. Ball, of Georgetown University, published a hypertext edition of Thorpe’s edition and translation of the OE *Appolonius of Tyre\(^{136}&^{137}\).* Both text and translation may be viewed simultaneously, not in different frames but by opening another window of the browser and resizing the two of them! Each paragraph has a number—serving as a link to the corresponding paragraph in the translation—and a reference to the corresponding page in Thorpe, and to the page and line number in Gooden’s edition\(^{138}\). Ball’s edition contains no glossary and the text itself is not hypermarked.

IV.4.4. *The Paris Psalter* at Augusta College

Students may read the first fifty psalms of the *Paris Psalter\(^{139}\)*, together with the Latin original, and consult a glossary, thanks to an online edition prepared by R. Stracke\(^{140}\), of Augusta State University. Just as in the manuscript, the Latin is shown on the left and the English on the right. The glossary gives the translation into PDE and line references of all instances of the word in the psalms. These references are at the same time links to those instances.

IV.4.5. *Sermo Lupi ad Anglos* at the University of Rochester

University of Rochester M. Bernstein\(^{141}\) started to publish in 1996 a three-framed electronic edition of Wulfstan’s *Sermo Lupi ad Anglos\(^{142}\).* The left frame contains the links to all the different sections of the site: help, bibliography, grammatical notes, document comparison, critical edition, notes, translation, analogues in other OE works, glossary and manuscript image. The upper frame contains the text and the lower frame may contain either the translation or the textual notes. Unlike Owen’s edition of *The Seafarer*, Bernstein’s edition of the sermon is not hypermarked: if one wants to the meaning of a word, the glossary must be consulted independently. The edition contains the versions of the five surviving manuscripts containing the sermon plus a translation, all of which may be combined for comparison thanks to the frame division of the page.
IV.4.6. The Seafarer

C. Owen's 1999 thesis (University of Saskatchewan) is a scholarly hypertext edition of The Seafarer, and it is certainly worth using by students of Anglo-Saxon literature. It includes a transcription of the manuscript, an edited hypertext version of the poem, another hypertext version with the concordance to the formulaic diction, three renowned translations of the poem, all The Exeter Book poetry online, plus critical apparatus and analysis, and bibliography. Owen has made sound use of frames and hypertext, and offers several viewing modes. In the first place, the reading mode, in which the screen is split into frames, the left one for the poem and the right one for the notes and emendations. Some of the words of the poem are in bold type, which indicates that they are links to the notes and emendations. Glossary consultation while reading is very simple: by positioning the mouse pointer over any one word, basic grammatical and lexical information is given in the bottom message bar. Other viewing modes are the split and the quartered screens, if one chooses to view two or four texts simultaneously.

IV.4.7. The Wanderer

T. Romano published in 1999 an online electronic scholarly edition and translation of The Wanderer. This poem is presented in a five-framed javascript page. What makes it different from other screen-split pages is the "synchronized scrolling" feature: the right middle frame shows a picture or copy of the original manuscript and as one moves the mouse pointer from line to line, the transcription in the right upper frame moves too to keep in synchrony with the manuscript, so that it is very easy to compare. It is also the frame where the links in the left upper pane show up: INSTRUCTIONS, PREFACE, INTRODUCTION, the FOUR FOLIOS of The Exeter Book containing the poem, the TEXT or edited poem, a CHIASMUS EDITION, a COMMENTARY, a list of the WORKS CONSULTED, and finally a FREE TRANSLATION of the poem. The right bottom frame is for the glossary. Neither the transcription of the manuscript nor the edited poem is hypertextual. So, again, we miss direct links to the glossary from the each word in the text. Also lacking are links to other Web resources.
IV.4.3. Three Homilies by Ælfric at the Oxford University

University of Oxford S.D. Lee published in 1999 an electronic online edition of Ælfric's *Homilies on Judith, Esther, and The Maccabees*. This is another excellent scholarly electronic publication, consisting of 16 chapters or sections which can be reached from the index in the left frame and which are shown in the right frame. The critical editions of the homilies are in pdf format and must be read with Acrobat Reader.

IV.4.9. Wulfstan’s Eschatological Homilies at Ursinus College

Wulfstan’s *Eschatological Homilies*, another thorough piece of scholarship, was published on the Internet in 2000, by J.T. Lionarons. In the *Introduction* the author says: "This electronic edition of the Old English eschatological homilies is designed to bring together Wulfstan’s writings on the last days and his sources in an easily accessible format. It includes newly edited texts and new translations of the five homilies, fully glossed texts of each homily, and transcriptions of the manuscripts in which they are preserved, combined with the Latin and Old English sources and analogues which pertain to Wulfstan’s work and a bibliography of primary and secondary materials." The left frame contains an index to all sections of the website. The homilies are shown on the right upper frame and textual notes in the right bottom frame. The left frame links allow users to view the five edited homilies (from MS. Cotton 113) or the transcriptions of all five manuscripts. A very useful feature is that any two texts may be compared, for which purpose a new screen-splitter browser window opens automatically. On each screen side we are given an index of all the homilies and manuscripts, and a PDE translation. The edited homilies are not hypertexted, except for the notes numbers, for again there is no glossary. The site is very well designed and navigation is extremely easy for there exist links everywhere to be able to go straight to any other section.

IV.4.10. Wulf and Eadwacer at Western Michigan University

An excellent critical edition of *Wulf and Eadwacer*, published by M.D. Livingston in 2001 within the Old English Online Editions series, is available from the Western Michigan University’s Medieval Institute’s server. The webpage contains four adjustable frames with hypertextual elements. The upper frame is for the title of the book; the left frame contains an index of the different sections; the middle frame displays the *INTRODUCTION*, the *EDITORIAL PROCEDURES*, the *MANUSCRIPT*, the *EDITION* and the *TRANSLATION*; the lower frame is for the *NOTES* about the manuscript and the *CRITICAL EDITION*, and *COMMENTARIES*. The *GLOSSARY* is displayed on an independent browser window. Each line of the edited poem contains two links, one for the textual apparatus and the other for the commentaries.
IV.4.11. The Seafarer’s Voyage at Wheaton College

_The Seafarer_, a Voyagi Through the Worlds of Medieval England, version 6, is an online electronic book created by A.J. Frantzen and J. Ruffing in 1992, subsequently revised and altered until converted into html by M.D.C. Drout and S. Lima in 1998. The book deals with salient aspects of English medieval society and culture in general and as seen in or exemplified by a selection of OE texts. Just like Beowulf in Hypertext, this site's forte is the way OE texts are completely contextualized. On entering the site, we are presented with a screen split into four resizable frames. The left top frame contains the links to the site's different modules, i.e. it is the book's table of contents. The modules or chapters are: BOOK, LABOR, MAGIC, MONASTERY, MONASTIC LIFE, MEDICINE, NAVIGATION, Penance, RANKS, and TEXTS. When clicking on a module, the module interface or chapter structure, which is common to all modules except TEXTS, is displayed in the right bottom frame. This interface is simply a division of each module's sections: NARRATIVE, LEXICON, LINKS, SO WHAT? IMAGES, BIBLIOGRAPHY, and SELF-TEST. By clicking on any of them, they are displayed in the left bottom frame. NARRATIVE is the essay proper, which opens with a short index of the essay. LEXICON is a glossary of the terms specific to that module. LINKS contains a list of short essays in which the main topic dealt with in NARRATIVE is further developed in connection with particular OE or ME texts and students are given hints for papers. IMAGES and BIBLIOGRAPHY contain precisely what is expected. All sections of a module contain hyperlinks to the other sections in the module. The right upper frame is meant for students to take notes. By clicking on it, a new browser window opens up, with a cgi-like text-box on which to paste text from _The Seafarer_ or simply write. Although everything written here must be copied and pasted onto a word processor before leaving _The Seafarer_. The last module or chapter, TEXTS behaves differently. When clicked on, a new browser window opens up, with an eight-framed page. The page is in fact split into two horizontal halves with four frames in the upper half and another identical four frames in the bottom half. The left upper frame of each half contains the links to each text: Ælfric's Colloquy, The Dream of the Rood, Ohpere and Wulfstan, Ceolfrith, Scrifhtoc, and Leafhtigl. Again, by choosing any one text, some of the relevant text interface items or sections appear in the right lower frame: SOUNDS of [each text]. PROSE/VERSE TRANSLATION, ANGLO-SAXON POETIC RECORDS EDITION, LATIN/OTHER SOURCES, DIPLOMATIC EDITION, EDITION, COMMENTARY, GATEWAYS, MANUSCRIPTS, and DDD. The purpose of having the screen split into two halves is, of course, to allow users to read any two sections of the same OE text simultaneously, for example, “DIPLOMATIC EDITION” at the top and “TRANSLATION” at the bottom.
V. MANUSCRIPTS

Often students are unaware that the text they are reading in their OE literature class or translating and analyzing in their OE language course is an edited version of Anglo-Saxon manuscript. Since access to manuscript is nearly always impossible, recent developments in manuscript digitization and their public availability on the Internet have meant a momentous step forward for students and scholars. Some of the above-mentioned scholarly editions do offer images of the original manuscripts, whether partial—such as M. Berstein’s edition of Sermo Lupi ad Anglos— or complete—such as T. Romano’s edition of The Wanderer. However, the texts used by students may not have been edited and published on the web. Still, links to relevant websites should be offered to the students in OE CAI. An excellent introduction to the subject of manuscripts together with a downloadable Excel database of OE manuscripts by J. Herrington may be found Georgetown University server152. As for webpages with links to Anglo-Saxon manuscripts, we shall only mention a few: University of Arizona K. Berkhourts153 Anglo-Saxon Manuscripts164, Georgetown University C. Ball’s Old English Pages155 webpage Texts and Manuscripts156, Canbridge University S.D. Keync’s Anglo-Saxon Manuscripts page157, D. Tillotson’s website Medieval Writing — History, Heritage and Data Source158, Belmont University J. Byrne’s159 Images from Manuscripts160.

When translating texts from the Testaments, students should have the opportunity to appreciate the beauty of the illuminations of the Lindisfarne Gospels (Cotton Nero D.iv)161. The British Library website162 has some images online, and the whole manuscript was recently digitalized and published163. What is more, for an OE student these Gospels are also interesting for they may read Aldred’s interlinear OE glosses. Another similar electronic edition is The Book of Kells CD-ROM164, which contains digital images of the 340 folios: the four Gospels, with their Prefaces, Summaries and Canon Tables. Beowulf, which is obligatory reading in Anglo-Saxon literature subjects, is also available in a digital format on two CD-ROMs: The Electronic Beowulf, edited by K. Kiernan165 of the University of Kentucky.166 It is an image-based edition of the poem in Cotton Vitellius A. xiv., with many features for scholarly research: the 18th c. Thorkelin transcriptions, copies of the 1815 first edition, two early 19th c. collations of the manuscripts by Conybeare and Madden, a concpriedious glossarial index, a new edition with transcript together with search facilities for both the edition and the transcript, a comprehensive bibliography, a section about the project’s history, including many online articles. From the user’s point of view, one of the most striking features is the possibility of viewing the manuscript and the edition, or the transcripts, on one screen, plus the glossary, using any of the various modes available. Again, for students aid teachers working with Christ, Guthlac, The Phoenix, Juliana, The Wanderer, The Seafarer, Widsith, Deor or any of the Riddles, University of Melbourne N. Kennedy167 & B. Muir168 have very recently published an electronic CD-ROM edition of The Exeter Anthology of Old English Poetry169, a web-based multimedia application that has converted...
the paper book into a "virtual manuscript", with a hypertext edition fully cross-referenced to the virtual manuscript, plus audio readings of the poems.170

Naturally, apart from CD-ROMs, many websites offer either information on manuscripts or actual digitalized images. The University of Oxford hosts an impressive collection of manuscripts with works in OE, many of which can be viewed online at The Early Manuscripts at Oxford University171; the Homily on The Invention of the Cross (MS. Auct. F. 4. 32), some OE glosses (MS. Bodl. 572 or 'Codex Oxoniensis Posterior'), the "Cædmon Manuscript" (MS. Junius 11), containing parts of Genesis, Exodus and Daniel, illustrated with Anglo-Saxon drawings, the Life of St. Basil (MS. Rawl. Q. e. 20), the Preface to the Anglo-Saxon Chronicle (MS. Laud Misc. 636, fol. 1r), all at the Bodleian Library; the Rule of St. Benedict (MS. 197). the OE translation of Bede's Historia ecclesiastica gentis Anglorum (MS. 279B) at Corpus Christi College; and finally, Ælfric's Grammar (MS. 154), at St. John's College. Equally interesting is the 11th century Anglo-Saxon Glossary (MS Brussels, Royal Library 1650), an excellent scholarly study on these marginal glosses published on the Web by D.W. Porter172 in 1995.173

Finally, we would like to mention a stand-alone or web-based application to manipulate or study digitalized manuscripts and palaeography: Ductus174, developed at the University of Melbourne by N. Kennedy175 for B. Muir176. It is an interactive multimedia program designed to teach the history of western European handwriting. One interesting feature is that transcripts for each line can be viewed by passing the mouse over the line number. Last but not least, we must mention another excellent and useful website: Northwestern University C. Regan's177 Early English Scribal Culture178, where students may be instructed online on the Anglo-Saxon scribal procedures and practise transcription of OE manuscripts.

VI. WRITING

As we said above, active skills such as speaking and writing do not make much sense if the language is no longer spoken. However, from a pedagogical point of view or just for sheer pleasure, the active skills may — or perhaps, should — be fostered. Since those able and willing to use Old English for communication are but very few and very distant from one another, it is clear that computer technology can help. The best tool to carry out such communication is a discussion list or group, and one such group does indeed exist. The Englisc List.179 This list was begun by Menorail University and Georgetown University professors B. Schipper and C. Ball in 1996. The principal aim of the list is pedagogical and practical. As stated in the mainpage of the list's website: "here is an opportunity for you to hone your skills at a challenging medieval language — in a way that more passive, traditional methods of study don't offer — and learn how to teach it." Of course, people willing to participate in such a forum are mainly scholars, for writing in and translating into a dead language "is not a simple process, but requires a thorough knowledge of available Old..."
English texts and of the contexts for particular words and not just some Old English grammar” (Schipper & Higley, 1996:16). Subscribers to the list are required, among other things, to compose messages or texts in OE, to translate PDE texts into OE, to pose questions about OE grammar and vocabulary. In order to provide contributors with conversational phrases to get started with, C. Ball created a useful webpage called Instant Old English[^180], subtitled “A Conversational Phrase Book Culled from the Old English Corpus for the English List”.

In 1998 a news service was originated in this forum: Tidunga on Englisce or NASC[^181] (The New Anglo-Saxon Chronicle), a monthly announcement of the world’s news written in OE, many of whose contributors are members of The Englisce List. Since 1999 it has been hosted and maintained by Antony Appleyard[^182].

### VII. LISTENING

There are two types of materials available for this skill, theoretical and practical. As far as tlicity is concerned, there are not many websites specifically devoted to OE phonology. In 2000 Furman University lecturer W.E. Rogers[^183] and D. Ervin created a website called The History of English Phonemes[^184]. In the mainpage of the site, the authors themselves admit that the “information contained in the site is available in any good textbook on the history of the language”, but while “printed texts normally present the information in a linear fashion corresponding to the chronological development of English”, this website’s value is “the hypertextual treatment of the information, which is meant to keep students from having to spind a great deal of time leafing through textbooks.” The site is meant to support undergraduates students enrolled in History of the English Language courses. It is a pity that, in order to avoid viewing problems, many users would have to view special phonetic symbols. Special combinations have been made up, such at /c/ for /t/, instead of the IPA symbols. The webpage is divided into two screens: the left one contains an index to the different sections of the website and the right one is where the different sections are displayed. Sections relevant for OE CAI are: Consonants, Vowel and Sound Changes. The design of the website is very clear and facilitates easy reading, except for the fact that hypertextuality is not taken full advantage of, so that users need to use the back and forth browser buttons. However, the level is very basic, even for an introduction. One particularly pedagogical flaw is that no examples are provided, which is especially noticeable in the Sound Changes section. As for downloadable materials, which is another important facet of CAI — making notes, lectures and books electronically available to students — we must mention R. Stevick’s[^185] online pdf-format book. The Sounds of Old English[^186].

With respect to listening practice, the reason for listening to OE is not to be able to carry a conversation, but rather for students to recognize the phonemes studied in their OE or HELP course — which is actually a feature of many of the courses and applications reviewed.

[^180]: Instant Old English
[^181]: Tidunga on Englisce or NASC
[^182]: Antony Appleyard
[^183]: W.E. Rogers
[^184]: The History of English Phonemes
[^185]: R. Stevick’s
[^186]: The Sounds of Old English
here—or to appreciate poetry recitation and the way poems were experienced at a time when they were declaimed before an audience. Da a Engliscan Gesipas’s website has a page called Readings of Old English Poetry a collection of OE verse read by S. Pollington: Dear, The Funeral of Scyld Scyting, and The Battle of Brunanburh. Undoubtedly, one of the most popular coursebooks among OE teachers is Mitchell & Robinson’s Guide to Old English, so it seems natural that someone should have thought of converting some of its texts into soundfiles. P. Baker has done so and created a webpage called Readings from a Guide to Old English. Commercial material is also available: Drae BCS Ltd. has published a multimedia OE CD-ROM, which has a 1000-word picture-sound dictionary, plus grammar, vocabulary and tests.

VIII. DICTIONARIES & GLOSSARIES

Electronic dictionaries are becoming increasingly popular with English language learners because they offer a fast and convenient method of looking up words while working with another computer application, for example writing a composition. According to Laufer & Hill (2000:68), students are often reluctant to consult unfamiliar words in a paper dictionary because of “the time involved in flicking through the dictionary pages and the subsequent disruption of the flow of reading” and they claim that an “electronic dictionary may provide a good solution to this problem”. As far as OE is concerned, the sheer wealth of electronic texts available makes it natural that reading should go hand in hand with electronic dictionary and glossary consultation. We believe that is precisely the case and rapidity characterizing electronic dictionaries that increases the number of word lookups on the part of the students, thereby contributing to “more efficient reading” and to a greater chance of acquiring the looked up words”, as Laufer & Hill (2000:68) put it.

No empirical studies have been carried of OE electronic reading and dictionary consultation which could prove our claim to be right or wrong. However, research conducted with modern languages on the usefulness of electronic dictionaries and glossaries as on-line helping tools and as contributors to text comprehension and incidental vocabulary learning seem to support our belief.

The design of the glossaries and dictionaries should be such as to promote learning. According to Laufer & Hill, 2000:58, “multiple dictionary information reinforces learning” which implies that “a variety of lookup options [should be allowed for] catering to different lookup preferences [...] when assigning tasks that involve reading comprehension and understanding of unfamiliar words.” It seems undeniable that “the more a learner pays attention to a word’s morphophonological, orthographic, prosodic, semantic, and pragmatic features and to intraword and interword relations, the more likely it is that the new lexical information will be retained” and this can only be achieved if the glossary or dictionary provides a “multiplicity of lexical information” (Laufer & Hill, 2000:71). If learners could
“select the type of information they consider most appropriate for the task and feel most comfortable with” (Lauer & Hill, 2000:69), learning would indeed be greatly facilitated. This seems to be more important than the number of times a word is looked up.

Now, what is the situation concerning OE electronic glossaries and dictionaries? They do not meet all the requirements of the “optimal dictionary” just depicted: easy, fast, compatible with different lookup preferences. Often, OE glossaries provide very little information about a word: word type, morphology, and some rough PDE equivalents. Admittedly, some scholarly electronic editions of OE words cater for this need through analogues in other OE works. As for OE electronic dictionaries, the only one we know of, *Wendere*, is available as a rough Microsoft Access table. Of course, it is extremely time-consuming to design a glossary that meets these requirements, let alone a whole dictionary.

What are the resources available to our OE students, whether on CD-ROM downloadable from the web, or online? We cannot but start by mentioning a monumental work: the second electronic version of the *Oxford English* Dictionary (Second Edition), which is available both on CD-ROM and online by subscription. Secondly, B. Schlipper’s *Modern to Old English Vocabulary* may prove useful for it is the only one we know of in which words are sorted by the PDE word. Thirdly, in 1997. K. Jarnbeck published a very short *Introductory Glossary and Translation Guide* for OE students using Moore, Knott & Hultberg’s *The Elements of Old English*. Fourthly, M. Robbins, although he describes himself as “an interested hobbyist in the language,” has produced a most handy quick-reference OE-PDE-OE dictionary, which he has entitled *Wendere*. It is downloadable as a 685 kb zip-file, which decompresses into a 1.9 Mb file. *Wendere* is in fact a Microsoft Access database with over 28,000 entries. The huge advantage of its being a database is that the dictionary may be used from OE to PDE or from PDE to OE and, since it also contains fields for grammar labels, registers may also be sorted by these labels. To perform word lookups, one may use Access, both in table or presentation layout, or convert it into an .asp-extension webpage so that it may be consulted from a server. Fifthly, University of Pennsylvania S. Crist has made three OE lexical works publicly available on the web: the glossary of *Bright’s Anglo-Saxon Reader* (pages 241-385 of the text), Bosworth and Toller’s *Anglo-Saxon Dictionary*, and Clark Hall’s *A Concise Anglo-Saxon Dictionary*. *Bright’s Glossary* is available as a single 572 Kb fully readable html file. *Bosworth & Toller’s dictionary* is available as 10 html files (about 21 Mb) and it is the rough output of an OCR programme, so it needs further processing before it becomes really usable. *Clark Hall’s Dictionary* is available only as scanned images which still have not reached the OCR processing stage. We must also mention an online glossary working only from PDE to OE, the *Present Day English Searchable Glossary for Old English Terms*, but its vocabulary is limited to that found in the lessons and exercises in Pollington’s *First Steps*. It does not seem to be operative. Finally, an Index of OE names found in OE works is the webpage *Englisc Naman*, which belongs to the website *Folespræc* developed by Dean Easton.
IX. HISTORY AND NON-LINGUISTIC RESOURCES

The OE language cannot be studied independently of the extant written materials (not only literary works but also other texts of a religious, historical, medical, legal ... nature) and artefacts. In order to fully comprehend all these materials, students should also be instructed in what we may simply call “Anglo-Saxon culture”, which is precisely what Mitchell (1995) purported to achieve. There are many electronic resources dealing with Anglo-Saxon culture, providing all kind of information which complements an OE Language or Anglo-Saxon literature course. These resources may be online university courses, websites or commercial CD-ROMs. Some are scholarly, while others a simply re-enactment societies’ websites or edutainment software.

We shall start by reviewing a few commercial CD-ROMs and then move on to websites. Research Machines PLC and the British Museum have jointly developed The Anglo-Saxons: An Exploration of their Art, Literature and Way of Life 244 The contents of this CD-ROM —Digging up London, Monks and Nuns, Marvelous Objects, Amazing Animals, Kings and Kingdoms, Anglo-Saxon Writing, Places, Further Study— may be explored by using text, images and there is some voice narration. Images can be enlarged and alternative views can be selected to enable users to see the artefacts in greater detail. Graphyle Publications has published the Anglo-Saxons CD-ROM 245, covering the period prior to the Anglo-Saxon invasion of England through to the death of Alfred at the end of the 9th century. Another commercial CD-ROM containing a huge library of images is The Western Civilization CD-ROM 246, with a subsection entitled “Anglo-Saxon England, 500-1066”. It includes software for classroom presentations, but it is also possible to use the images and videos in a PowerPoint presentation. Another two titles relevant in an OE course are The World of Vikings CD-ROM 247 and 1066 and the Norman Conquest CD-ROM 248. See also Lee & Fraser (undated webpage).

As for the Internet, we must first mention the online electronic book entitled The Seafarer 219 described above. This is very good example of how “external” and “internal” history of the language may be combined so that students do not lose sight of the close relationship between language and the culture in which that language was used. Another online book, though without the hypertext and frame features of The Seafarer, has been edited by S.J. Harris & B.L. Grigsby and is hosted by the Orb (Online Reference Book for Medieval Studies) server: Misconceptions about the Middle Ages 220, which tackles the Crusades, medieval medicine, medieval children, the church and the austerity of the epoch.

The Online Guide to Anglo-Saxon Culture 221 mounted by member of the University of Toronto Graduate Department of English is a webpage with links to short online articles about many different aspects of the culture of that period. Bede Net 222 is an academic resource, maintained by S.J. Harris 223 devoted to the works of the venerable monk offering online bibliography of scholarly articles and books. As for King Alfred, Ken Roberts has created a page (text and links) called King Alfred the Great 244, Anglo SAXAN or the Anglo-Saxons Net 225 is an ongoing Web project created by S. Miller 226 to “bring back to life a
people [...] who turn out to be as vivid and varied as ourselves” (Miller, Mainpage). The “Coins” page contains a link to the excellent Early Medieval Corpus of Coin Finds created by the same author but hosted on Canbridge’s Fitzwilliam Museum server. The corpus information is stored in a PHP database which may be searched according to various criteria (kingdom, ruler, mint, county). There also exist different options to view and order the results obtained in the search. Those interested in Anglo-Saxon buildings and archaeology and 6th-8th century Northumbrian figures may visit Bede’s World, which also contains many links to other Bede and Anglo-Saxon sites. Still another website devoted to Bede is R.P. Crisp’s The Venerable Bede. Students looking for historical information of the Anglo-Saxon period are also well catered to. If it is niaps they want, there’s the Historical maps and illustrations webpage, published on the Internet by D. Gibbon for his 1996 English Dialects and Sociolccts Course. A good Anglo-Saxon England map has been put up on the Web by C. Ball and more niaps are available online at Britannia. As for history, first-hand information may be found at the Anglo-Saxon Charters website, put up on the Web by the British Academy and the Royal Historical Society. This is an excellent scholarly website with a wealth of information and material of interest to specialists. A non-academic site that provides valuable, succinct and useful database information about, among other things, Anglo-Saxon history and culture is Britannia’s History Department. Another hypertextual website with basic database historical information is History World, with various searching nodes. Finally, we must mention a webpage with general but very relevant information and many links: Anglo-Saxon Index by S.D. Keynes, of Cambridge University.

However, not all the websites are academic or scholarly. Some of them were put up on the Web by living-history or re-creation societies, but often the type the type of information they provide supplemints that of more scholarly sites and may thus be used in an OE CAI course. Angelcynn is a society seeking to recreate different aspects of Anglo-Saxon life. It contains non-academic articles on food, crafts, warfare, pastimes, clothing, weaponry, artefacts, etc., with a few graphics and photographs; biographies of kings; an online glossary; an illustrated description of a reconstructed Anglo-Saxon village called West Stow. The site is well-designed for frames allow users not to get lost in it, links to the different sections being always available. However, the articles’ text is not hypertextual. Regia Anglorum, Anglo-Saxon, Viking, Nornian and British History is another society devoted to the recreation of a cross section of English life around the turn of the first millennium, including the reconstruction of an Anglo-Saxon nianor house, Wychurst, a Viking settlement, Withamstow, and an earl’s nianor, Drenghani. The Manor of Drenghani page contains links to online articles on the Anglo-Saxon legal system, warfare and daily life (food and drink, feasting and fasting, music, games, verse, pastimes). Da Engliscan Gesiças is another society, more academic, created 1966 and devoted to the study of the Anglo-Saxon period: language and literature, archaeology, anthropology, architecture, art, religion, mythology, folklore and material culture. It provides a correspondence course of OE (by S. Pollington), a Select Bibliography for Anglo-Saxon Studies (by C.P. Biggam).
information about Germanic and OE runes (again by S. Pollington)\(^{248}\), about the Firsby Anglo-Saxon Village Project, audio recordings of OE poetry (again by S. Pollington), and a useful links page. An obvious matter of interest for students of OE is the Sutton Hoo Burial Ship, to which are devoted many websites, such as the Sutton Hoo Room\(^{249}\) and the Sutton Hoo WWW Site\(^{250}\). Finally, though not intended for university students and even less so for scholars, sonic websites deserve to be included here simply as examples of what can be done with computers. All sorts of activities, texts and even javascript games for school students concerning the Anglo-Saxons and the Vikings have been mounted on the Web by BBC\(^{251}\). Also for secondary school children, there is the The History Net website\(^{252,253}\).

X. CONCLUSION

An OE CAI course should have an index page created by the instructor with a site map or contents index, permanently visible in a frame or at least always accessible from any page of the site. The course should have class materials both in html and pdf formats—class notes, handouts, complementary materials, bibliography—, all the obligatory primary OE texts, translations, text-specific glossaries and a web-based OE dictionary, online grammar and vocabulary exercises created with some suitable authoring tool, links to materials and resources hosted on other servers and precise instructions on what to do with them—online articles, dictionaries, maps, scholarly edited texts, manuscripts, libraries’ catalogues and online material, museums, searching engines—, and Internet or intranet online access to the different CD-KOMS reviewed in this chapter. I totally agree with Roper (1996) in that what undegraduates need is not only a virtual library such as The Labyrinth, but also “something more like the Perseus or De Italia CD-ROM programs”\(^{254}\), which are essentially encyclopaedias, with very basic information that we, as medievalists, already know—simple, beginner entries on fin amou or, a book of hours, what a nionk is and what a friar is, cross-linked with hypertextual links."\(^{255}\) Finally, electronic mail should be taken full advantage of, either for instructor-student communication or, by means of a listserver, for general discussion on course and subject matters.\(^{256}\) Undoubtedly, future hardware and software developments will make it possible to include more unhought-of components. As Foys (1999:20) said and hoped, "the mercurial nature of computer software and hardware development makes it difficult to surmise what the next few years will hold, but I hope that new media beyond straightforward webpages, audio files and JPEG manuscript pages will emerge".
NOTES

1 Of course, as we shall see, OE poetry illiy be recited and listened to, and this could be iilad available in sound files. Also, tile teaching of OE sounds illiy be enhanced if sound files are used.
2 There exist today colliecciioci stable and fast enough for onligne training to be perfectly feasible. In Spain, cable, ADSL, RDSI are becoming increasingly affordable and available throughout tile country for individuals.
3 For multimedia authoring tools, readers illiy visit the Computer Based Teaching and Learning Sites webpage (lorien.ncl.ac.uk/ming/resources/cal/inmedia.htm). We would also like to mention a very useful, easy and free tool: tile Hot Potatoes Suite (www.halfbakedsotware.com/hotpot).
4 www.wmich.edu/medieval/oecl. We would like to recoiiiiicid sociie short introductory manuals to get started in web-browsing: Web Skills for Language Learning (www.well.ac.uk/wellproj/wellbook.htm), published by WELL Project (www.well.ac.uk/wellproj/index.html); How to Do Reoiirch on the Internet (www.lib.monash.edu.au/VI/www/wwwcon.htm), published by Monash University Library; Ball (1996b); Lee & Cooper (7000).
6 This is what secondary-school teacher Cynthia Minter does in tileiow webpage The Hunt for Anglo-Saxon Information - A IIternet Treasure Hunt on Anglo-Saxon Period (www.kn.pacbell.com/wired/tilpages/huntanglosacy.html).
7 Available from tile listserver ANSAXNET. It is called FLASHCRD SOFTDOS. To download subscription to ANSAX-L is required. Anaxdat is tile list's database: www.mun.ca/Anaxdat.
8 Also available from ANSAX-L archives.
10 members.aol.com/libphill.
11 Stella@arts.gla.ac.uk; www.arts.gla.ac.uk/STELLA. A description of the initial stages of the Project appears in Kay & Smith (1990).
12 Bernstein (1997:27, ital. 4) defines JavaScript as "a plottor-dependent scriptiing language (moditied programming language) used to creat small programs, or applets, that run from their source code on the Internet instead of from programs, or applications, that you have installed on your personal computer."
13 aliocr.irc.um.es/2-trivino/callloc.
14 anjiranda@ljuma.es.
15 calce@ljuma.es.
16 trivino@irc.um.es.
17 Tile version we are reviewing is 4.10.
19 Burnley (7000).
20 www.nuf.rice.edu/~barlow/#soft.
21 pbon@virginia.edu.
22 It illiy be downloaded as a zip-compressed file from www.engl.virginia.edu/OE/OEA.download/index.html and installed all a personal computer, or else it illiy be used online from the hosting server itself (www.engl.virginia.edu/OE/OEA/index.html).
23 Individually downloadable as .pdf files to be viewed with Adobe Reader.
24 Once cliclled all the contents of tile lower frame displays tile Real Player audio application interface.
25 K. Yao (1995) is of the same opinion, as we saw above.
26 This option provides fonnulation of object words, gender, case, number, person, tense, inood, etc.
27 This option gives both a general equivalent of tile word in PDE and a more specific translation given in the context it appears in tile text.
29 www.verbix.com/index.html. Tile same application under the name of Conjugate is available at loadsoft.narod.ru/education_and_science/languages/review_23490_index.html.
30 Technical features illiy be consulted at www.verbix.com/info.asp.
31 www.uicrcode.org and home.att.net/%7EJennaskass.
32 A little javascript applicationi which has caught our attention is Count the Mice (www.coda.freeserve.co.uk/omnos.htm) designed to learn to count in OE, up to number ten.
33 www.georgetown.edu/ebsl/lwaet/lwaet06.html.
34 TDOEC. www.doc.utoronto.ca.

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11 See Gray (1999) for a review of the programme.

42 The exercise can also be reached through the TEXPS mainpage at www.mirror.org/people/ken.roberts/king.alfred.html.

51 The author gives his email address (alex@mail.lisgroup.net), but not his name.

48 In the webpage about the project (amsanco.narod.ru/ex/Saxonicainf.htm), the author acknowledges that the idea of building this sort of cyclopaedia of Old Anglo-Saxon verse came to him or her whilst visiting C. Ball’s Heawer course, reviewed above.

52 Neither of these tools was operative on the day we visited the site (30 Nov 2001).

53 However, it may happen that some of these hosting servers may restrict access after a public period. Unless the OCAK is regularly updated, broken links may prevent activities from being implemented.

54 www.brown.edu/Departments/Medieval_Studies/lessons.

55 The author gives his email address (alex@mail.lisgroup.net), but not his name.

56 The exercise can also be reached through the TEXPS mainpage at www.mirror.org/people/ken.roberts/king.alfred.html.

57 Coiterary to the sentences used by Ee-Ing Ong in his Old English Lessons or C. Ball’s Heawer.

58 ASPR. The Anglo-Saxon Poetic Records have been encoded in html by McCrae-Gibson and are publicly available online from the Internet from various sources. Readers are referred to gopher.std.com/obl/Anglo-Saxon/asprindex.html for further information on this conversion into an electronic document.


60 www.geocities.com/indoeurop/project/grammar/grammar41.html;
   www.geocities.com/indoeurop/project/grammar/grammar42.html.

61 www.ucoliz.unc.edu/~bedex/exe.html.

62 The exercise can also be reached through the TEXPS mainpage at www.mirror.org/people/ken.roberts/king.alfred.html.

63 Coiterary to the sentences used by Ee-Ing Ong in his Old English Lessons or C. Ball’s Heawer.

64 ASPR, The Anglo-Saxon Poetic Records have been encoded in html by McCrae-Gibson and are publicly available online from the Internet from various sources. Readers are referred to gopher.std.com/obl/Anglo-Saxon/asprindex.html for further information on this conversion into an electronic document.

65 www.ucoliz.unc.edu/~bedex/parsc.html.


67 www.ucoliz.unc.edu/~bedex/exe.html.

68 www.ucoliz.unc.edu/~bedex/parsc.html.

69 www.geocities.com/indoeurop/project/grammar/grammar41.html;
   www.geocities.com/indoeurop/project/grammar/grammar42.html.

70 www.ucoliz.unc.edu/~bedex/parsc.html.

71 www.ucoliz.unc.edu/~bedex/parsc.html.


73 www.oats.ahds.ac.uk.

74 Also downloadable from the Dictionary of Old English Project (www.doc.utoronto.ca). The corpus is also available online by subscription at the University of Virginia (etext.lib.virginia.edu/oecl.html).

75 ftp.std.com/obl/Anglo-Saxon/aspr/contents.html.
102 Both the Alex Catalogue of Electronic Texts (www.infomotions.com/alex) and Eserver contain just PDE translations of Beowulf, as plain text or as a pdf document. Berkeley Digital Library SunSITE's Online Medieval and Classical Library (sunsite.berkeley.edu/OMACL/Junius) offers online translations of the OE poems of the Junius Manuscript. A similar site is the Internet Public Library (www.ipl.org).

103 For scholars and researchers in linguistics, history of literary criticism, electronic editions, “lend themselves to sophisticated searches, concordancing, collations, and other forms of text retrieval” (SEENET, 2001). Since scholarly research falls outside the scope of this chapter, we shall merely refer readers to Duggan (1994).

104 These pop-up comment boxes are precisely one of the outstanding features of OEAI.

105 This is precisely one of the most interesting features of Google's toolbar (www.google.com).

106 Symonscu Student University enrolled in the course History and Structure of the English Language (syllabus.syr.edu/ETS/Spamwood/ots121).


109 Byzah90@yahoo.com.

110 www.stockton.edu/%7Elkineel/itdept/engreses/brum/brun2.html.

111 www.nottm.ac.uk/~aczjm/nwp/angsp.html.


113 www.verylittlediarybook.


116 julio@otonet.nl

117 www.geocities.com/Athens/Academy/4506.


123 www.airflow.net/maldon/tlpepoem.html.

124 www.samizdat.com/brtitled.html#1300.

125 www.chadwyck.co.uk/products.

126 www.rodriguez.direct.co.uk/mainpagetemplates.htm.

127 Fuzzza@mailhost.tcs.tulane.edu.


131 jonkler@towson.edu.

132 www.oxford.edu/~rinker/yorwo/notes1.htm#oe.

133 www.engl.virginia.edu/~ms44a/intro.html.


135 abruce@bsouthern.edu.


138 www.humanities.mcmaster.ca/~beowulf/minmain.html.

139 taring@ms.usc.edu.mcmaster.ca.

140 chadwyck@ms.usc.edu.mcmaster.ca.

141 The authors have used the public domain electronic text of Altman’s transcription, obtained via the Online Book Initiative.


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OE CAI: Computer-Assisted Instruction of Old English

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See also A Guide to Web Sites with Anglo-Saxon Images, by J.P. Byrne et al.
www.perscon.tufts.edu.
Which is precisely what The Seafarer, A Voyage ... offers.
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