Learning Latin by Electronic Media: Edging into the Future*

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ABSTRACT
Changes in the English educational system have brought classical subjects to the edge of extinction in state schools. The Cambridge School Classics Project (CSCP) has therefore begun to explore the practicalities of providing Latin teaching over the Internet. This paper examines the decline in Latin provision in English state schools before discussing practical, technical, and pedagogical issues arising from a small-scale, one-year project in which two state schools ran Latin classes without Latin specialists but with the support of by Web-based electronic resources and e-mail tutors. Consideration is then given to different electronic resources currently under development to enhance the study of Latin.

KEYWORDS
Latin, Online Learning, Vocabulary Testing, Gap-Filling Exercise, Electronic Dictionary, Morphological Analysis

INTRODUCTION: SETTING THE (ENGLISH) CONTEXT
The aim of this article is to give a brief outline of the position of Latin teaching in English schools today, to consider in some detail a project we have undertaken offering Latin to schools with no specialist classics teacher, and to provide an overview of electronic resources currently under development to supplement students’ learning of Latin.

*This article is based on a presentation given at the Annual Institute of the American Classical League in Bloomington, Indiana, June 2000.
The last ten years have proven difficult for Latin teachers, with statistics showing a steady decline in public examination entries. Between 1990 and 1999 there was a 31% drop in Latin entries at A level (normally taken by students in their final year of secondary schooling), and a 28% drop at GCSE level (normally taken two years before A level).

The decline has been considerably sharper in state (i.e., publicly funded) schools than private schools. At GCSE, for instance, state school entries dropped by more than 40 percent, while private school entries fell by little more than 10 percent. The reasons for this disparity are easy to identify. First, while private schools are free to offer any curriculum they wish, state schools are required by law to follow a national curriculum, which dictates the curriculum for the compulsory subjects (Math, English, Science, History, Geography, Religious Education, Modern Foreign Languages, Technology, Music, Art, and Physical Education) and leaves almost no room for optional subjects such as Classics and Economics. Second, state schools are unable to sustain small group sizes in the same way that private schools can.

These factors have led to the disappearance of classical subjects from many state schools to the extent that fewer than 10% of them now offer classical subjects at any point in their curriculum. At the same time, however, the government has been seeking to improve standards in numeracy and literacy. This situation has led to a return to more formal methods of English teaching, including more systematic approaches to the teaching of grammar and spelling which, in turn, has led to calls for more formal methods in modern languages, and some demand for more Latin in schools.

Classicists have been quick to pick up on this demand for more Latin, led by Barbara Bell (2000), who has recently brought out a new textbook for younger students. Her Minimus: Starting out in Latin textbook is a story-based introduction to Latin and language awareness which features a mouse living on Hadrian’s Wall. Its publication received a good deal of publicity and led to the formation of a number of Latin clubs in primary schools (with students aged five to eleven) throughout England.

However, developing an interest in Latin among younger students is of limited value if those students are then denied access to Latin when they move to secondary school. Given the increasingly precarious position of Latin, we decided in early 1999 to explore the possibility of offering the distance teaching of the Cambridge Latin Course (1998) to schools via e-mail. Following discussions with two state schools who were interested in introducing Latin into their schools, the Online Latin Project was launched in September 1999 with financial support from the University of Cambridge Faculties of Classics and Education.
THE ONLINE LATIN PROJECT 1999-2000

Project Outline

The Online Latin Project (hereafter OLP) was designed from the outset to be a low-budget, low-level technology pilot aimed at testing the usefulness of e-mail as a way of providing specialist tutoring for students in schools with no classics teacher. Each of the two schools selected a group of students on the basis of ability to join the project, selecting 25 12-year-olds in one school and 20 13-year-olds in the other. The students met once a week in their respective schools for a study session of approximately 50 minutes. They studied under the supervision of a nonspecialist facilitator (who did not teach the students) and sent their work by e-mail to their tutors at Cambridge for marking. Nine e-mail tutors were involved in the project, all of whom were trainee teachers studying for their Postgraduate Certificate of Education.

To encourage a sense of community across the two schools, a web site was set up to provide some resources and activities such as quizzes and a vocabulary tester (not included in the Cambridge Latin Course) along with information about the OLP for casual browsers. In order to encourage use of the web site, the students were set a joint assignment to design a tourist guide to Pompeii using resources and links provided on the OLP web site. This assignment was followed by a visit to the Bay of Naples towards the end of May 2000. Thirty-five of the students spent a week in Sorrento, visiting the main classical sites, starting with a climb of Mount Vesuvius to get a feel for the geography of Campania.

The Role of Technology Within the Project

Over the 24 weeks of the project, the students covered the first eight Stages (out of 12) of the Cambridge Latin Course. Their performance in attainment tests at the end of Stage 4 and Stage 8 was in line with the performance of students taught Latin by more traditional means in the classroom. It is not clear, however, to what extent their success was due to the use of electronic media and resources to deliver the course. Even though a significant number of the students indicated in an initial questionnaire that it was the opportunity to work on computers that had attracted them to the project, in practice they spent most of their time in study sessions working from the textbook, using the Independent Learning Manual to guide them through the course. They tended to work in small groups clustered around tables rather than in ones and twos around computers.

Even with this small-scale project, some major problems occurred with the technological aspect of the pilot. When the project started, the stu-
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dents in one school did not have individual e-mail addresses, which caused obvious problems when tutors were returning the work that they had assessed. Although computer suites were reserved for the Latin sessions, access was not always guaranteed, and in one school the technical infrastructure was insufficiently robust to handle 20 students going on-line on separate computers at the same time. Furthermore, with the sessions only taking place once a week, students who missed the session and did not have Internet access at home, could, and did, lose touch with their e-mail tutor all too easily. Such problems explain in part the tentative nature of the second part of the title of this article, “edging into the future.” We are not convinced that new technologies necessarily provide the answer to the precarious position in which Latin finds itself in English schools.

Nevertheless, the two facilitators thought that the use of technology was an important part of the project, not because it helped the students to understand Latin but because it required them to make purposeful use of the Internet and e-mail. It introduced the students to the protocols of e-mail communication and highlighted the potential value of e-mail as a means of gaining access to specialist knowledge. Also, as noted above, the fact that involvement in the OLP guaranteed a certain amount of access to computing facilities was a strong motivational factor for the students and helped dispel the notion that studying Latin might be an old fashioned pursuit. In both schools, two or three students took full advantage of the electronic resources on the web site to produce their own work, and one student on the visit to the Bay of Naples took dozens of photographs every day on his digital camera, downloading them onto a laptop every evening.

Independent and Individual Learning

For much of the project, the students worked in much the same way as they would have done if they had been enrolled in a correspondence course, one of the standard ways of delivering distance learning before the advent of personal computers. The OLP was a new experience for the students; they found it disconcerting to have their work marked by a tutor whom they never saw. “It’s hard not having a tutor, because there’s no one to discipline me,” observed one student, who apparently did not even think that the e-mail tutor counted as a tutor. Another commented, “I’m finding the work quite difficult because we are working so individually.” A third student said, “I feel a bit nervous about learning Latin without a teacher because it’s hard if I get stuck, but now it’s not too bad.”

Such comments suggested that the students had not been required to take responsibility for their own learning in everyday schooling and perhaps found it disconcerting when teachers adopted the role of “guide at the side” instead of “sage on the stage.” Students, teachers and e-mail
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tutors found the asynchronous nature of e-mail communication frustrating because it could not generate the spontaneous dynamism of face-to-face classroom contact. As one student succinctly expressed it, “I like being taught.” This comment is a helpful and reassuring reminder that electronic resources can supplement, but not replace, teachers’ expertise. Computers are an excellent tool for providing and accessing information but a very blunt instrument for developing knowledge and understanding.

Future Developments

In spite of the limitations of e-mail as a medium for providing tutoring in Latin, we feel that the feedback from students has been sufficiently positive to warrant further research and development. The most heartening aspect of the project was the fact that only two students dropped out during the year, and the large majority indicated that they were as enthusiastic about Latin at the end of the year as they had been at the start.

We were also delighted by the level of response to a front-page article on the project that was published in the London Times newspaper. Within a week of the article’s appearance we had received requests for information about on-line Latin from as far afield as Abu Dhabi, Thailand, Brazil, New Zealand, and Zimbabwe. Most of the e-mail correspondents were adult learners, seeking either to learn Latin for the first time or to renew their acquaintance with it after a long absence. In response to this expression of interest, we started a trial in June 2000 with 15 adult learners, who are studying Book I of the Cambridge Latin Course using the Independent Learning Manual and with support from a moderated webboard.

At the time of this writing, the Cambridge School Classics Project has just finalised an agreement with Granada Media (the largest independent television and entertainment company in Britain) to provide the subject expertise for a government-funded pilot to develop electronic resources for a one-year Latin course for 11- to 14-year-old students. Although e-mail tutoring will still be a central element of the pilot, the emphasis of the pilot will be on the creation of interactive materials. Proposed resources include video footage of key stories from the Cambridge Latin Course along with newly commissioned film clips from Pompeii and Herculaneum, a photographic gallery of archaeological evidence, and self-marking exercises. The aim of the pilot is to create a bank of resources for use both by experienced Latin teachers and by independent learners. The materials will be trialled by 20 schools, of which 15 will be offering Latin for the first time, and five independent learners. Initial meetings have taken place with schools and the first electronic resources are due to be available in January 2001.
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ELECTRONIC RESOURCES

For reasons that have been discussed earlier in this paper, the position of Latin in schools in England is under threat. What can we do with electronic tools to help and encourage the learning of Latin? There is a wide range of potential users, from school students faced with a decreasing number of contact hours with their teacher to independent learners of all ages.

Computer programs are best suited to individual use. They can stimulate classroom discussion and facilitate collaborative learning at a distance, but, at least at the moment, they are most effective when used by individuals. In this role, they offer the students the benefits of self-pacing, reinforcement, and an unthreatening environment for learning.

Learning a language is a communicative process, and it will almost always be better achieved with the help of, and in the presence of, a skilled teacher. However, students still need to do some work on their own because preparation will help them make best use of their time with their teacher.

What language tasks are students most often required to undertake on their own? Learning vocabulary, reinforcing one's grasp of inflections, and preparing passages of Latin for comprehension and translation are all core activities. In the remaining parts of this paper, we will describe three programs we have developed that address these areas. They are a vocabulary tester, a Latin endings program, and a parsing Latin dictionary. The first two are not new ideas but have some novel features that are worth mentioning. The Latin dictionary takes the familiar idea of an electronic dictionary a stage further by incorporating a parsing engine.

Vocabulary Tester

The Vocabulary Tester currently works for the first 12 stages of the Cambridge Latin Course, but it can readily be extended to other word lists. It is written as a Java applet so that it will run in a browser on any PC or Macintosh (see the Cambridge Schools Classics Projects student pages at www.caecilius.com). Students choose a stage; the program presents only words up to and including that point. Quite a number of new vocabulary items are met at each stage, but the course recommends that only a portion of these words be learned. Students can choose to be tested only on these checklist words or on the full vocabulary. The program offers three possibilities for translating each word. Students click on a translation to select it and then receive instant feedback (see Figure 1).
There are two main advantages to making the exercise multiple-choice, rather than requiring the student to type in an answer. First, it is very fast. Students can answer 30 or 40 questions a minute. Second, it avoids the problem of typing a translation which, though correct, is not precisely one of the answers accepted by the program. This problem is one thing that is guaranteed to annoy students and put them off using the program. If the correct choice of answer is made, the word and the correct translation are displayed discretely at the bottom of the window as confirmation and students’ scores are incremented. A new question is put up immediately so a good pace can be maintained.

The program is nonthreatening. Students can ask for hints with no penalty (and, having asked for two hints, has a very good chance of getting questions right on the third go). Pressing the Hint button causes one of the incorrect answers to be greyed out, with the right translation displayed alongside it. Students can also resort to the Reset button to start scoring from zero again. In its current version no record of the score is kept, and students do not log in to use the tester. We may introduce a clock and challenge students to see how many they can get right within a fixed period.

Questions are chosen at random out of the pool of words up to the selected stage. Inevitably the same words will come up more than once,
and the program makes no attempt to ensure that all words have appeared once before starting to repeat. Indeed, very occasionally the same word comes up twice in a row, but since the answers are reordered randomly, it requires a bit of thought to select the right answer again.

Although the words for testing are chosen randomly, the program ensures that all three possibilities are of the same word class (e.g., noun or verb). As a form of subliminal reinforcement, the options are displayed against a colour-coded background. For instance, the background for nouns is a light red, verbs light purple, and adjectives creamy yellow. The color coding makes the program look more attractive and may impart a subtle message about the parts of speech to the student.

At any time, students are free to change from having a Latin word presented along with three possible English translations to having an English word with three Latin translations. Making this change does not reset the score that has been accumulated and can be useful for injecting some variety while, at the same time, reinforcing the learning by viewing the words from a different perspective.

Learning vocabulary ideally demands a lot of repetition and can often be boring (especially for parents recruited to ask the questions). It is hoped that this little Java tester will make the process quicker and more fun.

Latin Endings

The Latin Endings program is a familiar cloze or gap-filling exercise. Its purpose is to drill the inflectional endings of Latin words. The program presents a list of grammar topics to students to practice and, for each topic, gives a series of sentences in English together and a Latin translation with key endings omitted. Help and information on students’ performance is also available.

The program was originally devised as a HyperCard program to run on a Macintosh. Its latest incarnation is a cross-platform Macromedia Director version with a more attractive interface, sound, and animation to provide amusement and diversion (see Figure 2).
Students fill in as many of the missing endings as possible and then press the Check button. The program marks the attempt, highlighting any incorrect endings and displaying a correct version of the complete sentence. At any point, students can ask for a score summary which is presented as a graph. The program maintains students' scores across sessions, organized by log in name, and offers the option of starting a new session from where the previous session left off.

The exercises are held as ordinary text files so it is very easy for a teacher to produce new material with any text editor or word processor. The conventions are simple. The first line is the title of the exercise, which may be optionally followed by lines of help text, and then terminated by an obligatory percent sign. Basic styling is supported in the help text through the use of <b> (bold) and <i> (italic) tags. If help text is provided, the program will offer a Help button that students can press at any time. The remaining lines in the file are alternating pairs, consisting of an English sentence followed by its translation into Latin. Curly braces mark the segments of the Latin words that are to be left as gaps for students to fill in. If acceptable alternatives are made available, they are separated by a slash.
as shown in the following sentence pair.

The master criticizes the unhappy slave.

\textit{dominus serv\{um/am\} infelic\{em\} vituperat.}

We have also written a Java version of the program and are experimenting with the use of a pop-up list of endings from which students select the endings with the mouse. This will make the program very quick to use so that more material can be covered in a short time. It requires some modifications in the format of the exercise file to list the options for each gap and to identify the correct choice. Ideally only valid endings should be supplied in the list of options for each word, since there is a risk that students will remember forms they have seen even though they are wrong.

**Parsing Latin Dictionary**

The \textit{Parsing Latin Dictionary} combines a regular electronic dictionary with a Latin parsing engine. This combination enables students to enter an inflected word form and to have the program immediately respond with a list of all the dictionary entries that can generate this form along with a full morphological analysis. The entry for the first parsing is shown automatically. Clicking on any parsing updates the display with the appropriate definition (see Figure 3).

**Figure 3**

Parsing Latin Dictionary
For fairly lightly inflected languages like English or Spanish, it is not unreasonable for a program to hold a complete list of all possible inflections and the head words they come from. Compiling the lemmatized lists of forms is laborious, but the resulting lists are not unduly large for inclusion in a program to run on standard computers. However, the scale of inflection in Latin is much greater, and a list of all possible forms would be enormous. A regular verb such as *porto*, for instance, has over two hundred inflections. Since the aim was to develop a dictionary that would run on a variety of hardware platforms, from powerful and capacious PCs and Macintoshes to tiny handheld computers with slow processors and very restricted memory, the parsing has to be done programmatically, combining regular rules for inflection with a scheme for irregularities.

There are two core data files: an enriched dictionary file and a file of inflectional endings, categorized according to different types of noun, verb, adjective, and pronoun. We have used the *Pocket Oxford Latin Dictionary* (1994) as a basis for the electronic dictionary, but several enhancements have been made. All principal parts of verbs and the genitive of nouns have been spelled out in full since the space-saving abbreviations used in a print dictionary are not necessary in an electronic version. The text is much clearer to learners without abbreviations. Head words in the dictionary are marked with their part of speech, and, in the case of inflecting word classes (e.g., nouns and verbs), the particular class of inflection is also recorded.

When the system is built, these core files are compiled and compressed. The compilation/compression minimizes the amount of disk space required when the program is installed and greatly improves access speed when looking up items. The dictionary file is first compiled into a set of intermediate files for stems, invariables, and validation patterns. The stems file holds a list of stems derived from the dictionary head words. Each stem record holds the class of ending that is permitted to supplement it and the number of the dictionary entry it is related to. The invariables file is used for words that are not amenable to a stem-ending analysis such as indeclinable words (e.g., conjunctions, prepositions, and interjections), and for some irregular parts of inflecting words. The validation patterns record any special parsing instructions that are associated in the enriched dictionary with certain irregular words. These patterns are held in a form of regular expressions, which can block certain productions during parsing and enable others. For instance, the entry for *filia* ‘daughter’ has a pattern that permits the additional, irregular dative and ablative plural forms *filiabus*. The verb *dico* ‘say’ has a pattern that blocks the regular imperative form and substitutes the irregular form *dic*. This mechanism should prevent false positives or missing analyses, that the dictionary data file has been correctly edited.
When an inflected word form is submitted for parsing, it is first looked for in the list of invariables, and any possible analysis is recorded. The word is then segmented at every letter boundary into a potential “stem” and “ending.” The stem and ending lists are consulted, and if matching entries are found and they share a common inflectional class, then these conditions are noted as a possible analysis. This analysis is finally accepted if it is not blocked by a validation pattern attached to the head word to which the stem record points. The program accumulates all possible parses. Even if it were possible to determine the correct analysis in every case from the syntax of the surrounding text, we felt it is more valuable as a learning aid for students to decide what is appropriate in the context. The program does not aim to do more than students could do more laboriously by consulting printed dictionaries and grammars. However, it will accomplish the task a great deal more quickly because the results of analysis are displayed instantly.

The program also displays macra (the horizontal bars above vowels to indicate a long pronunciation) on the Latin head words in the dictionary without the need for special fonts on the user’s system. This feature has proved beneficial in the Java version of the parsing dictionary since, when the program is used across the Web, it cannot assume that any specialized fonts will be installed on the remote computer.

The Windows version of the dictionary is especially easy to use with other applications such as word processors or Web browsers that might be displaying Latin text. When students double-click on a Latin word to select it, it is instantly looked up and parsed by the dictionary program. The dictionary has both Latin-English and English-Latin sections, and every word acts as an implicit hyperlink. For example, Figure 3 above includes the entry for the Latin verb *rego*. Clicking on the word ‘govern’ in its definition shows the corresponding entry in the English-Latin section. This procedure makes it very easy to follow up on nuances of a word and goes a long way towards compensating for the relative brevity of the definitions of the entries in this dictionary. In many ways, short definitions are desirable in a program that is designed to expedite reading speed. A backtrack mechanism allows students to return quickly to any entry that has been visited and thereby encourages exploration without the anxiety of getting lost.

In common with the other learning tools presented here, a version of the parsing dictionary has also been implemented as a Java applet so that it will run on a variety of computers in standard Web browsers. Undergraduates at the University of Cambridge are trialling the use of the Java dictionary with some first-year texts. The browser window displays the Latin text, the parsing dictionary, and a set of language notes in an integrated environment that should make the reading of the texts quicker and easier. At the other end of the spectrum is the implementation of the pars-
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ing dictionary running on the Psion palmtop computer. This version offers the full program for use while travelling or sitting in the comfort of an armchair.

CONCLUSION

The traditional teaching of Latin in schools in England is under threat. However, new initiatives give hope that the learning of Latin will continue with the help of new technology. We have presented some computer programs for independent learning that are available now and look forward to more advanced tools in the future.

REFERENCES


AUTHORS’ BIODATA

Bob Lister holds an M. A. in Classics from the University of Cambridge and a Postgraduate Certificate of Education from the London Institute of Education. He holds a joint lectureship in the University of Cambridge's School of Education and Faculty of Classics, dividing his time between training Classics teachers and teaching Latin language classes to undergraduates. He has particular interest in the role of information and communications technology in the teaching of Classics, both at school and university level. As Director of the Cambridge School Classics Project, he is responsible for the Cambridge Latin Course, the most commonly used Latin course in state secondary schools in England. In April 2000, he was appointed to the Classical Studies panel of the newly formed Learning and Teaching Support Network subject centre for History, Classics, and Archaeology. In addition to his work with Granada on a UK Government-funded extension to the Online Latin Project, he is currently collaborating with Tony Smith on the development of web-based software to assist students’ reading of classical texts.
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Tony Smith has a degree in Classics from the University of Oxford and a Postgraduate Certificate of Education from the London Institute of Education. After teaching in a unit for disruptive students for some years, he trained as a software engineer and worked on a variety of projects in communications and electronic publishing. For two years, he held a research post in the Department of Greek and Latin at the University of Manchester, working on a project to use computers in reading Latin and Greek texts. He has collaborated with Bob Lister over several years on computer programs for Classics. He works as a freelance software developer and has written a number of electronic dictionary products for Oxford University Press, including, most recently, the Tenth Edition of the Concise Oxford Dictionary.

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