
Hypermedia for language learning:

the FREE model at Coventry University

Marina Orsini-Jones and David Jones

Centre for Information Technology in Language Learning, Coventry University

*Coventry University is pioneering the integration of hypermedia into the curriculum for the teaching of Italian language and society with the creation of a package based on Nerino Rossi's novel *La neve nel bicchiere*. The novel was already in use as a basic course text, and developing a hypermedia package was felt to be the ideal way of creating a more stimulating means of access to it. The procedure used in creating the package is described, as are its contents, the ways in which the students use it and the tasks they are given to perform, the feedback from the students, and its impact on their performance. The testing of the prototype has helped in creating a new cognitive model: the FREE (Fluid Role-Exchange Environment) which functions as a fluid and interactive 'pool' where the three main actors, or actants, i.e. the learner, the lecturer and the computer, exchange roles. Within the FREE, students were involved in the construction and evaluation of the courseware, as well as testing the various versions of the prototype. The development and use of hypermedia inside and outside the classroom has made it possible to change both the students' and the lecturer's attitude towards the material being learnt. However, the courseware does not seem to equip students sufficiently for essay writing, and this problem needs further investigation.*

Introduction

The tradition of incorporating CALL into the language-learning curriculum goes back to the early 1980s at Coventry University, and since then has evolved in keeping with changes in the technology available (Corness 1984; Benwell 1986; Orsini-Jones 1987; Corness *et al* 1992; Orsini-Jones 1993).

Coventry University is at present pioneering the integration of hypermedia into the curriculum for the teaching of Italian language and society. The syllabus for a complete module of the BA Modern Languages and BA European Studies Degrees, which will count as 1/8th of the students' programme for year 2, has been designed upon in-house produced hypermedia courseware.

Although the module has not yet run in its present version, the prototype of the Hypermedia Italian Team's (HIT) project *La neve nel bicchiere* has been used, in the

academic years 1993/4, 1994/5 and 1995/6, with students taking Italian as an option in the final year of their BA Honours Degree in Modern Languages.

The testing of the prototype and its integration into the language-learning process have been very successful and have helped in creating a new cognitive model: the FREE – Fluid Role-Exchange Environment. The original concept of the FREE arose from the observation that the very nature of hypermedia technology allowed students not only to consume the finished product, but also to play an active role in its creation and in its regular revision and re-elaboration. Thus the experience of one cohort of students is fed back into the program for the benefit of the succeeding cohort (See Acknowledgements). They cannot do this directly, but indirectly via the lecturer and the technical designer. This was an essential feature of the development stage of the project but, due to the flexible nature of the technology, there is no reason why this process should not continue indefinitely in the future.

The Project *La neve nel bicchiere*: why, what, where, when and how

Origins of the project

The HIT project was born out of two main needs. The first was of a pedagogical nature: the need to find suitable materials for students taking Italian as a subsidiary language in the last year of their BA in Modern Languages. The course in Languages at Coventry is (or, at least, was at the time) area studies- rather than literature-based, but it was decided nevertheless to base much of the year's work on the study of a novel. There were several reasons for this decision: the wish to expose students to a different style of language from that encountered hitherto in newspaper and magazine articles; the coherence and continuity provided by a lengthy text; and the fact that works of fiction can sometimes provide a more lively, but nonetheless accurate, picture of social conditions than can the study of factual material.

It was, of course, necessary to choose the novel carefully. It needed to be by a contemporary author, and to deal with the lives of ordinary people in a realistic way. It also needed to be of the right length to be covered in the 25 teaching weeks available. The novel would be used for the purpose of teaching the language as well as the history and society of Italy. *La neve nel bicchiere* by Nerino Rossi (Rossi, 1977) was eventually chosen because it fitted perfectly within the lecturer's requirements. The book, written in the first person and clearly autobiographical in origin, describes the historical and social conditions of an Italian family over a period of 70 years (1880-1950). Furthermore there is a film based upon it, and it is easy to access materials about Emilia-Romagna, the Italian region in which the book is set.

The book and film were used for two years. However, the students' performance in their seminar presentations of the chapters in the book was poor. Students were finding using a book too difficult, and this reflected negatively on their ability to communicate effectively in Italian. It was therefore necessary to find a way of making the book more user-friendly, as it was felt it was vital to keep it as the textbook, but the way it was being used was obviously not achieving the objectives set in the syllabus.

Secondly, there was a need of a more practical nature: the teaching hours for the Italian

option were reduced from three to two per week after the introduction of modularization (1992). It was obvious that it would be impossible to cover the book in the existing format of lecture/seminar presentation/language work, particularly in view of the difficulties students were experiencing with the material. It was felt that developing a hypermedia package to be used both inside and outside the classroom would be the ideal way of creating a more stimulating means of access to the book for the students.

Creating the package

The way in which the HIT proceeded in building the package on screen was the following: in the first place, each screen was designed on paper by the lecturer creating the package, then submitted to the rest of the team for comments. Once the screen was in its electronic version, feedback was asked of students too. Their feedback was also used by the lecturer and the technical designer to further modify the package. All the texts but one (the chronology, see below) were first typed in Word for Windows, then transferred into ToolBook. The whole of the text was transferred to the computer (manually, by two research assistants) after the issue of copyright was cleared with the publisher.

In constructing the courseware, the HIT tried to avoid making the mistakes outlined by Khan (1995), i.e. producing courseware which is visually attractive but educationally weak: 'Too many people put a linear book online, give it some bookmarks, and call it a hypertext; worse yet, they add a few scanned-in photographs and a soundtrack and call it multimedia' (p.99). Such 'mistakes' occur when courseware designers follow McLuhan's *dicta* (McLuhan and Fiore, 1967) too strictly, and become infatuated with the medium rather than the message. In the course of the development of *La neve*, the HIT became increasingly aware of the negative attitudes to multimedia which have developed among some colleagues involved in CALL, probably due to exposure to educationally weak products. Bad multimedia products reinforce the old 'not invented here' syndrome, and encourage the recent backlash against information technology which is becoming increasingly fashionable – see, for example, the various articles in the Multimedia insert in *The Higher* (such as the centre-page on 12th March 1995, pp. vi–viii).

Using the courseware

The starting point of the students' activities is the text of the book (which they also have in hard copy). After the credits screens comes a summary page: by passing the pointer on the various buttons for the different chapters, a brief summary of each chapter appears on the left-hand side of the screen (Figure 1). This was done in order to allow students to skim and scan for major topics in the book. By clicking on the buttons called *Capitolo 1*, *Capitolo 2* (Chapter 1, Chapter 2) etc., students access the text of each chapter (Figure 2).

On this screen are two sets of buttons. On the right-hand side are the 'books' buttons which lead to information about:

- Italian history – *Cronologia* (Figures 3 and 4);
- a glossary activated via hotwords in the main text – *Vocabolario*;
- a description for each character mentioned in the book, both fictional and historical – *Personaggi non storicilPersonaggi Storici*;

- geography of the region connected to the places mentioned in the book – *Luoghi* (Figures 5 and 6);
- the revision exercise for each chapter, in a multiple-choice format – *Revisione Capitolo*.

Some pictures (historical characters, places, etc.) and some extracts from the film (chosen by the students in 1995/6) have been incorporated into the courseware too.

The words in the glossary have mostly been chosen by students. Feedback from students also affected the way the words in the glossary were explained: originally it was thought the glossary should be monolingual, but this idea encountered strong resistance from all cohorts of student users. The compromise solution is that there is a translation of each word in the glossary, but any further explanations are in Italian.

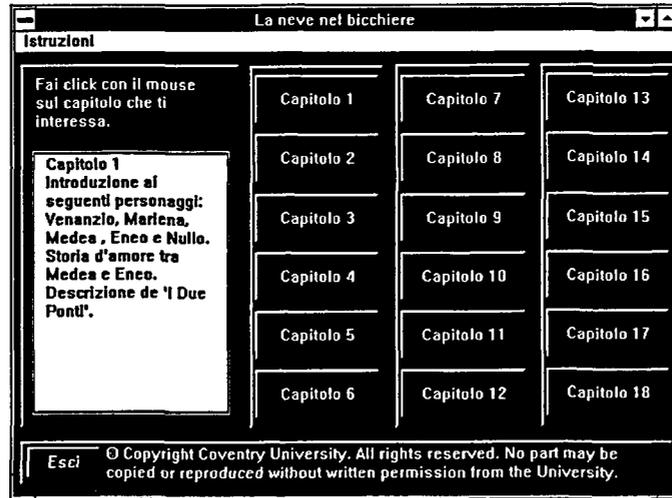


Figure 1: Summary page with buttons for each chapter in the book. Summary of Chapter 1 has been activated in this screen by clicking on the button Capitolo 1.

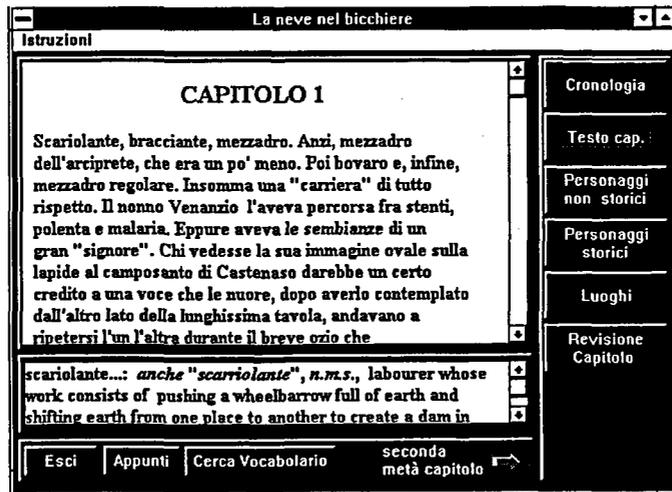


Figure 2: Screen with part of the text for Chapter 1: this is the main starting point for navigation into hypermedia.



Figure 3: Screen with main chronological index (Cronologia): on the left are the fictional events, on the right, historical events. Further information about characters mentioned is available by clicking on the buttons at the bottom of the screen (Personaggi non storici – Fictional characters and Personaggi Storici – Historical characters).

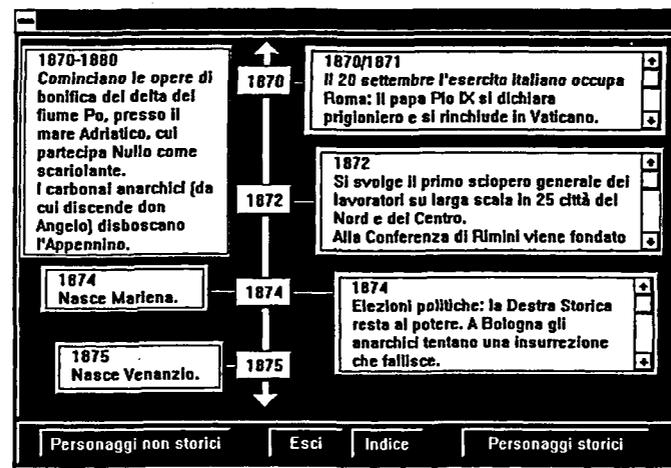


Figure 4: Example of the chronology: the years 1870-1875.

If we return to the main screen (Figure 2), on the left-hand side (at the bottom) are:

- the search button *Cerca* – which works like any other search facility in a word-processor;
- the notepad button *Appunti* – which enables students to take notes while they are working on the package and save them and/or print them out;
- the close button *Esci* – Exit.

The Help file – *Istruzioni* – is still under development.

In the academic years 1993/4, 1994/5 and 1995/6, the courseware *La neve nel bicchiere* was used by 50 undergraduates who approached the package in different ways, mainly in their guided-study time, according to the tasks assigned by their lecturer, to skim and scan the text(s) for information in order to:

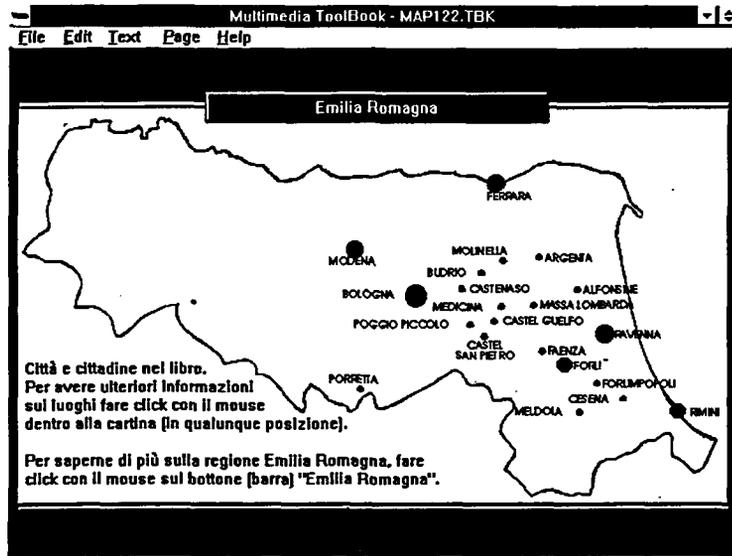


Figure 5: Map of the Emilia-Romagna region, where the book is set, with the towns and cities mentioned in the book.

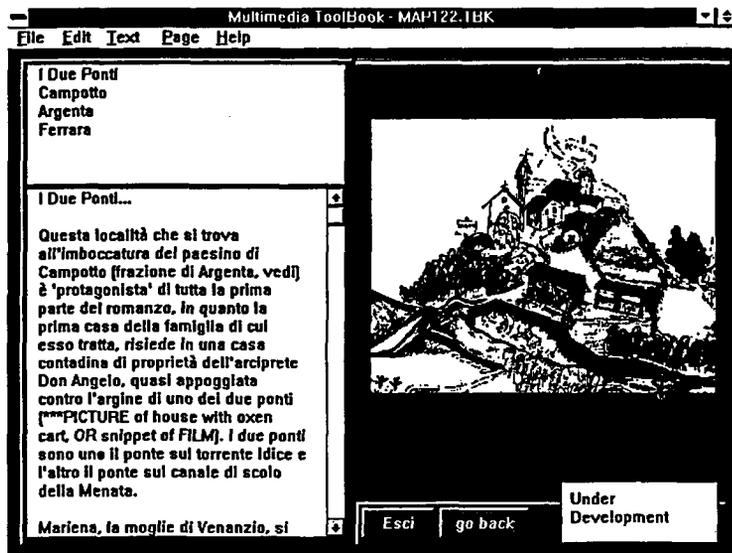


Figure 6: Detailed description of one of the places mentioned in the book.

- a. prepare for seminar presentations;
- b. write essays about topics in the book *La neve nel bicchiere*;
- c. revise the book before the written examination;
- d. practise their grammar.

Here are some examples of tasks given during the academic year 1994/5:

- a. Prepare an oral presentation on one of the fictional characters in the book (pair work), by searching the text of the various chapters (button *Cerca*), by consulting the initial summary of each chapter, and by using the button *Personaggi non storici*. You may even use the button *Cronologia* to trace further information relating to the character in question in the historical context of the book. Please provide word-processed hand-outs for your colleagues.
- b. Compare the fictional representation of the First World War in the book with what is reported about it in the *Cronologia*. The buttons *Personaggi storici*, *Cronologia* and *Luoghi* can all be used for this purpose.
- c. Analyse the major differences in the representation of the region Emilia-Romagna in the book and in the film. Please refer to the button *Luoghi* for this task.
- d. Look for the sentences in which the following verbs occur in the gerund form in Chapter 2: *amando*, *pestando*, *aiutandosi*, *cercando*, *insistendo*, *passandole vicino*, discuss in pairs the different meaning of each gerund according to the context in which it occurs, draw up some general rules on the comparison between the use of the gerund in Italian and in English. You may use your grammar reference book.

Students can moreover listen to some of the texts, but there are no listening comprehension exercises in the courseware as yet (1996). There is, however, a reading comprehension exercise for each of the 18 chapters in the book.

Students receive training to learn how to use the courseware prototype in its different versions. Students who want to use the prototype in their self-study time can easily do so as it is available on the network in three different open-access laboratories.

To sum up, to date the project has helped students of Italian to develop:

- their ability to make cross-references between the different components of their syllabus for Italian (i.e. history/language/present-day society);
- their linguistic/communicative skills;
- their information technology skills.

The feedback and the outcomes

The HIT has been pleased with the feedback obtained both from the students using the prototype and from the teachers/lecturers who have seen it at CALL conferences and/or workshops. The general comment has been that they find it extremely easy to understand how to navigate the hypermedia environment in *La neve*.

However, students varied in their initial reactions to hypermedia. In the academic year 1994/5, at the beginning of the first term, some were very reluctant to use the courseware, mainly because they did not have any IT skills. For some, this issue was overcome after the four hours IT training provided as part of the Italian course; for others, extra hours of IT instruction were needed (4-6) and were provided as guided-study time hours.

By the end of the second term, even the most reluctant students had been converted to hypermedia – mainly because their oral performance in Italian had improved

dramatically. This change was noticed by the lecturer in charge of the course, who found that students who had used hypermedia presented their material in a more effective way than those who had used the book before the introduction of the courseware.

The biggest achievements brought about by the use of hypermedia in the academic year 1994/5 – the year in which the feedback was monitored in a more systematic way – were as follows.

- Even the most computer-illiterate students had acquired word-processing skills: all students word-processed both the hand-outs for their seminar presentation and their assessed essays.
- Using the courseware *La neve nel bicchiere* had had an impact on the learning and presentation techniques of the learners. The structure of the courseware, which is topic-driven, was clearly reflected in the re-elaboration of the material carried out by the students, who gave highly structured and well-presented ‘lectures’ and made extensive use of various teaching aids (such as OHP transparencies, extracts from the film, pictures, charts, etc.). Students, moreover, prepared and distributed to their colleagues good-quality hand-outs used for their presentations.
- Students enjoyed the courseware and were keen to contribute to its construction.

Theoretical considerations

The main aim of the HIT project was the creation of a learning environment which was filled with content consistent with the medium carrying it. The HIT also wanted to involve students further in their ‘learning contract’, to enable them to participate in the construction of hypermedia on as equal terms as possible with their lecturers. The objective was a more democratic setting where roles could be easily exchanged.

The starting point was the adoption of the constructivist theory of learning (Barker and Proud, 1987; Merrill, 1991; Cunningham *et al*, 1993; Barker, 1993), according to which individual students and groups of learners should be actively involved in constructing knowledge, rather than being mere consumers of other people’s. Because of its inherent flexibility, hypermedia lends itself to this approach to learning.

It was of course necessary to prepare the ground for the introduction of truly integrated CALL materials into the classroom. Both lecturers and learners needed briefing about their new functions. The cognitive model represented in the FREE (Table 1) stemmed both from the experience of integrating hypermedia courseware and from that of keeping records of the students’ and lecturers’ feedback about the courseware.

The FREE functions as a fluid and interactive ‘pool’ where the three main actors, or *actants*, i.e. the learner, the lecturer and the computer, exchange roles. The choice of the word *actants* instead of *actors* is deliberate. *Actants*, which originated in French linguistics, is widely used in Italian linguistics – *attanti*. In etymological terms it is a noun which derives from a participle, an indefinite mood which better embodies the dynamism of the interchangeable roles the *actants* can assume in a hypermedia environment. *Actors* would convey the idea of a more passive role. The hypermedia environment – which is three-dimensional by nature – enables the three *actants* to amplify and multiply their

various roles in a fluid web of cognitive relationships (represented by the arrows in Figure 7).

Using hypermedia encouraged an on-going, open-ended redefinition of the 'imaginary borders' around the three above-mentioned *actants*. This is meant to be in keeping with the philosophy underlying the approach to the integration of IT expounded by the more Piaget-oriented CAL theorists (see for example Papert, 1980; Varisco and Mason, 1989; Paterson and Rosbottom, 1995). In the FREE model, the word *tool* is intended as meaning a flexible 'inanimate object'. It is applied only to the computer, which is thus similar to the computer in the role of 'pedagogue' as described by Higgins (1983). In this role it serves both learners and lecturers. But the computer is not only a tool, as it can be a tutee too (students constructing hypermedia/lecturer constructing hypermedia) and/or a tutor (self-access, open-study). Similarly, the lecturer can be both tutor and tutee (sitting back and learning from the learners) and the same applies to the learners. Within the FREE, students were – and are – involved at the following levels:

- testing, both inside and outside the language classroom, of the various versions of the prototype;
- evaluation, via questionnaires in Italian and English and weekly reports in both Italian and English about the courseware;
- construction: compilation of lists of hot-words to be included in the glossary of the electronic version of the book, writing of the Help file for the courseware (in English), etc.

FREE: FLUID ROLE-EXCHANGE ENVIRONMENT

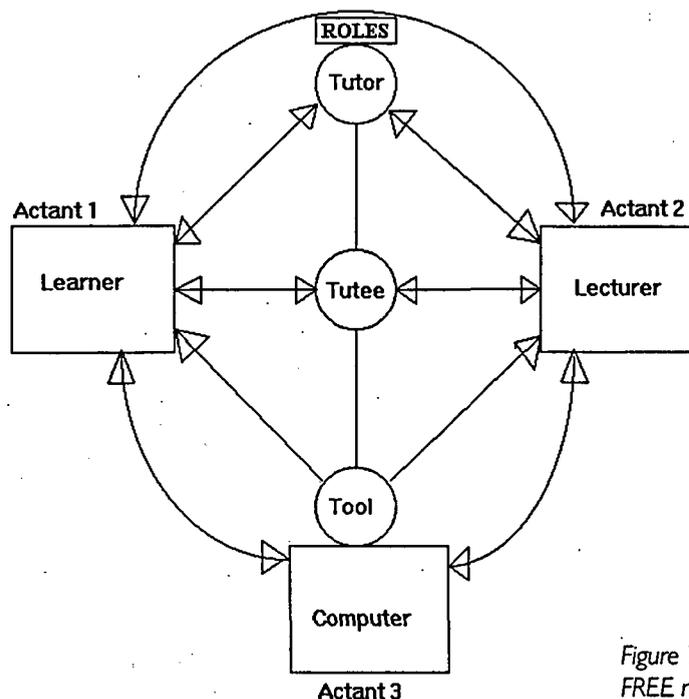


Figure 7: Graphic representation of the FREE model.

The students' feedback, filtered by the lecturer and the technical designer (the Experimental Officer within the School – Vic Tandy), feeds into the courseware which is then tested again by the students. Further feedback is collected and incorporated as much as possible into the package and so on and so forth in a kind of circular paradigm of knowledge. In this way we can truly talk about tailoring the prototype according to students' needs. We must stress though that construction here refers to construction of contents, rather than programming.

The process of student involvement was enhanced by the support of funding from both the Enterprise in Higher Education Initiative and the Learning Development Systems Funds within Coventry University. Funds were obtained, for example, to pay some students as research assistants so that they could keep a weekly diary – some in Italian and some in English – of their use of the HIT project and of their reactions to it. Other students received funding to select the hot-words, and subsequently to check the accuracy of the English for each definition in the glossary. More recently, the allocation of some European funding (Leonardo Transnational Pilot Project for the Dissemination of Innovation in Language Teaching) has made it possible to pay some students to create the Help file for *La neve*. Needless to say, it boosts students' confidence to know that:

- a. their feedback is valued by the designers of the product;
- b. their feedback is incorporated, where possible, into the product; and
- c. they can earn some money by participating in the creation of the project. The vocational aspect of receiving funding for their contribution motivates undergraduates further, particularly in the present climate of diminishing grants.

Conclusion

The experience of integrating the courseware via students' involvement has been positive. The development and use of hypermedia both inside and outside the classroom has made it possible to change both the students' and the lecturer's attitude towards the material being learnt. The aim of boosting students' communicative competence was achieved: it would appear that the integration of hypermedia is ideal for developing the skill of speaking in the foreign language, as well as that of taking notes in order to prepare for seminar presentations.

It would also appear that the courseware *La neve nel bicchiere* has been effective in creating a new CALL model – the FREE – within which students, lecturers and computers can interact in a fluid and flexible way.

However, the courseware and/or the module do not seem to equip students sufficiently for essay-writing. This skill needs to be further developed in order to avoid repetition, plagiarism and lack of originality. In 1993/4 there was the embarrassing recurrence of the same piece of text, reproduced word for word from the courseware in the essays in the written examination. In 1994/5 students were therefore warned repeatedly against plagiarism. This time the essays did not reproduce large chunks of texts from the courseware, but were mainly descriptive and not at all satisfactory. This compared unfavourably with the analytical quality of the seminar presentation and of the rest of their work during the year.

The latter issue will be investigated in a systematic way – jointly with the English Language Unit at Coventry University – in academic years 1995/6 and 1996/7, in order to collect sufficient evidence as to why the students' written performance is not as good as their oral one. The following are the questions which will be addressed.

1. Do students find it difficult to write essays in an analytical way both in English and in Italian? If so, why?
2. Did the fact that they had to hand-write the final exam paper up to academic year 1994/5 affect their ability to write a good essay? Students had in fact worked with word processors and the hypermedia package all year, but were then required to do their written examination in a traditional setting. As indicated by Martha Pennington, in the talk she gave at the CALL and the Learning Environment conference in September 1995: 'Writing the natural way: on computer', this could account for the substandard performance the students gave. In 1995/6 the first trial of an open electronic-book examination will be carried out during the May/June exam period, and the results will be compared with previous, hand-written, exam paper answers.
3. Does the lecturer in charge of the module put too much stress on oral presentation skills and not enough on writing skills?

These questions need to be addressed, and answers found, with hard evidence at hand (i.e. the students' exam-paper essays) in order to prevent a re-occurrence of the problem.

The above issues do not diminish the value of the introduction of hypermedia, on the contrary, they are proof to the fact that its introduction was invaluable for the lecturers involved both in terms of self-assessment and of staff development.

Finally, using the courseware has also resulted in higher student motivation, which was shown by the response to the module based upon the courseware – 301 LAI Italian Language and Society – given by the students in 1994/5 in the evaluation questionnaires filled in at the end of the academic year. The module scored 5/5 overall (on a 1–5 scoring system), i.e. total student satisfaction.

Acknowledgements

It was thanks to various brainstorming sessions with colleagues and friends – in particular Kathy Courtney (TLTP: project ASTCOVEA, Coventry University) and Frank Knowles (Linguistics, University of Aston) – that it was possible to arrive at the FREE definition of our model. We would also like to thank all the students of Italian who used the courseware and actively contributed to its construction and development in academic years 1992/3, 1993/4, 1994/5 and 1995/6.

References

- Barker, P.G. and Proud, A. (1987), 'A practical introduction to authoring for computer-assisted instruction. Part 10: knowledge-based CAL', *British Journal of Education Technology*, 18 (2), 140–60.
- Barker, P.G. (1993), *Exploring Hypermedia*, London, Kogan Page.

- Benwell, A. (1986), 'Integrating the computer into a language course' in Cameron, K.C. *et al* (eds), *Computers and Modern Language Studies*, Chichester, Ellis Harwood.
- Corness, P. (1984), 'Integrating the microcomputer into language teaching', *Language Monthly*, 9.
- Corness, P. *et al* (1992), *TIGER (Translating Industrial German): Computer-Aided Learning Package for German. Modules: Introductory, Intermediate and Advanced*, Coventry University.
- Cunningham, D.J., Duffy, T.M. and Knuth, R.A. (1993), 'The textbook of the future' in McKnight, C., Dillon, A. and Richardson, J. (eds), *Hypertext: A Psychological Perspective*, Chichester, Ellis Horwood.
- Curtis, F. (1993), 'Computer discourse: language imprisoned or empowered?' in Monteith, M. (ed), *Computers and Language*, Oxford, Intellect.
- Kahn, H. (1995), 'Effective CAL: theory and practice', *Association for Learning Technology Journal*, 3 (1), 98-102.
- Higgins, J. (1983), 'Can computers teach?', *CALICO Journal*, 1 (2), 4-6.
- McLuhan, M. and Fiore, Q. (1967), *The Medium is the Message*, New York, Bantam.
- Merrill, M.D. (1991), 'Constructivism and instructional design', *Educational Technology*, 31 (5), 45-54.
- Orsini-Jones, M. (1987), *CALL and Italian: Integrating a CALL Component into an Italian Language Course*, unpublished MA dissertation, University of Warwick.
- Orsini-Jones, M. (1993), 'A case for hypermedia in the teaching of Italian' in Wilkin, A. (ed), *Tuttitalia (The Association for Language Learning Journal for Italianists)*, 8, 23-37.
- Papert, S. (1980), *Mindstorms: Children, Computers and Powerful Ideas*, Brighton, Harvester Press/Basic Books.
- Paterson, P. and Rosbottom, J. (1995), 'Learning style and learning strategies', *Association for Learning Technology Journal*, 3 (1), 12-21.
- Rossi, N. (1977), *La neve nel bicchiere*, Venice, Marsilio.
- Varisco, B.M. and Mason, L. (1989), *Media, computer, società e scuola: orientamenti per la didattica in prospettiva multimediale e cognitivista*, Turin, SEI.