Computers in English Language Teaching and Research

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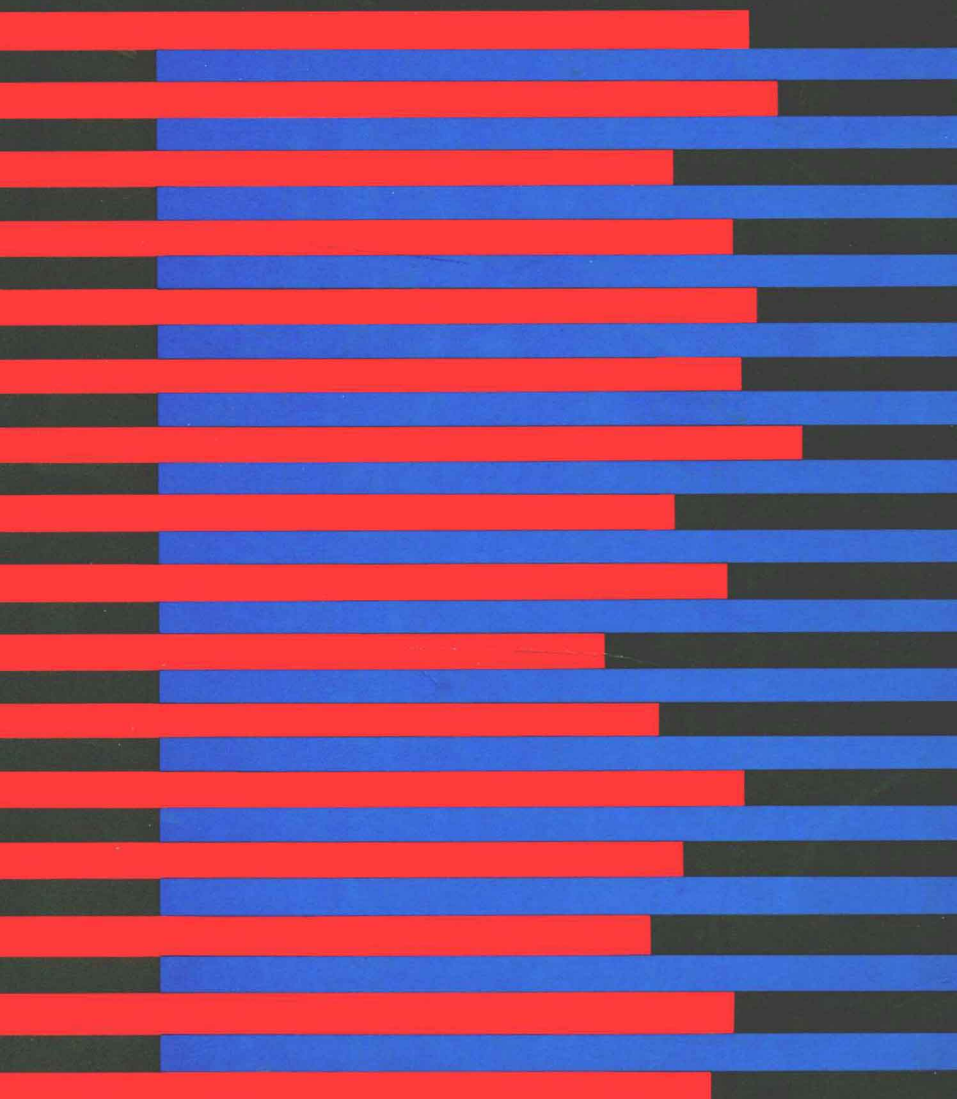
Computers in English Language Teaching and Research

Selected papers from the 1984 Lancaster Symposium 'Computers in English Language Education and Research'

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Preface

The contents of this latest volume in the *Applied Linguistics and Language Study* series have already had a 'dry run' at a British Council Special Course* held at the University of Lancaster in September 1984, which was attended by teachers and educators from many parts of the world. Those closely involved in the organization and teaching of this course agreed that the experience was a remarkable one. There was an almost inspirational feeling of being engaged, as a small but growing community of enthusiasts, in the opening of doors to new and exciting educational opportunities, and the contacts made on the course have already led to more than one international meeting. The enthusiasm exemplified in that course seems to be found wherever teachers are finding or being given the chance to harness their imaginations to the power of computers. But it needs to be combined with a healthy practicality and realism – perhaps with a dash of scepticism – if it is to produce the best results. Above all, innovations in CALL (computer-assisted language learning) need to be firmly set within a curriculum framework, advancing rather than setting back developments in modern language teaching and learning, gained with difficulty over the last decade.

Specifically within the context of other volumes in the *ALLS* series, the collection of papers presented here continues the theme of inter-relating theory and practice. It does so by exploring common interests between CALL and computer-based language research. In the immediate future, both hardware and software developments are likely to bring these two areas of inquiry and practice together, so that, for example, 'intelligent' text processing systems developed in research can be adapted for the more powerful micros where they can in turn be used for CALL. In the same way, no doubt, networking will lead

*Course 458: 'Computers in English Language Education and Research'

to the availability for educational use of text databases such as those developed for purposes of research.

Geoffrey Leech and Christopher Candlin highlight this convergence as well as giving attention, through the papers, to other educational applications of the computer: for example, in language learning databases and computer-based language testing. In all of these areas, the purpose of the collection is to further the concerns of applied linguistics, especially in demonstrating how the interests of the practitioner and the researcher are less compartmentalized than they are frequently held to be.

Christopher N. Candlin   *Lancaster*
General Editor   *1985*

Introduction

From the list of this book's contents, it will be seen that the topics of contributors 'fan out' from a concentrated focus on CALL (computer-assisted language learning) represented by the first seven contributions, to a more general educational perspective, and finally to a broader context including computational research on English, seen as a background to the educational applications.

Some readers will perhaps feel (at least initially) that the book would have been more useful if we had focused more directly on the computer as a tool for the classroom. It is no doubt true that CALL is the lure which has attracted the ELT professions to the computer, and equally CALL will be the most immediate interest in computing for a large proportion of our readership. (Apart from anything else, many educators have had to develop rapidly some kind of limited expertise in CALL, if only to justify a decision either to invest or not to invest in educational hardware and software.) At the same time, we have to be wary of dangers which may arise from a naive or addictive enthusiasm for CALL, if it is allowed to develop without critical scrutiny. As we shall now proceed to argue, the best corrective to these dangers is to step back a pace or two in order to see how CALL fits into a more general programme of research, educational and curriculum development in the use of computers.

Our first argument is that CALL is still in an experimental stage, when the potentiality of the medium is still being explored, and software (particularly good software) is in short supply. There is therefore a danger, as has already been seen in applications of computer technology elsewhere, that the innovatory powers of the computer will be oversold, and that a backlash will follow, accompanied by the usual obfuscatory effects of controversy. Already one can sense, in overheard conversations, that the battle lines are being drawn up between technophiles and Luddites.

In this exploratory phase, it is important that many points of view

should be given an airing. Our contributors on CALL therefore include not only leading pioneers and practitioners, such as Graham Davies and John Higgins, who by their commitment, skill and imagination have opened up the possibilities of this newly-fledged medium, but also those who are prepared to take a more critical or at least non-committal stance, such as Jenny Thomas and Charles Alderson. A negative point of view, however, is not for any of our contributors a blanket rejection of computers in the classroom, but rather a plea for discrimination between the good and the bad products of the micro revolution. To that end, Scott Windeatt and Annette Odell offer ways of evaluating both CALL products and CALL process in the classroom.

This need for discrimination is the keynote of our second argument, heralded by Martin Phillips's paper, which is that CALL should be seen and evaluated as only one part – if the most conspicuous part – of a computational provision for educational purposes. This is true not only for language teaching, as Robert Lewis's paper indicates, but also for other areas where there are overlaps with the use of equipment and software. One such example is their use for what has come to be known as CBELT (computer-based English language testing), the subject of Charles Alderson's paper. Further, both CALL and CBELT connect with the use of computer databases for educational and research purposes, a topic explored by Jenny Thomas. The more educational computing can be seen as multi-functional, the less persuasive will be the argument that the classroom micro, like the language laboratory which resulted from an earlier technological revolution, is a technology vainly searching for an educational justification.

Our third argument is that it is hasty to evaluate CALL at the present stage of development, when software is so limited, and when hardware is far less powerful than it is likely to become within a very short time. To say that CALL for ELT is in the 'Stephenson's Rocket' stage is in no way to decry the excellence of some work that is now being done. But if we broaden our vision to look at some current developments in computational research, this will be a better guide to what CALL materials may be possible within the next ten years than restricting one's attention to what is being produced for the present generation of educational micros (already a *past* generation for more affluent users!). Hence the last three papers of this book are concerned with relevant tools now available on mainframe computers (Eric Atwell), with tools for lexical analysis (John Sinclair), and for grammatical analysis (Geoffrey Leech). But perhaps the most direct

demonstrations of the educational relevance of computational linguistic research are those provided by the papers which precede these. Geoffrey Sampson, for example, explains the need to incorporate advanced language-processing models, in particular augmented transition networks, into educational software. A comparable research background informs Gerry Knowles's paper on the computer in phonetics teaching. These are just two examples of many developing interconnections between research and the classroom.

We have been stressing the need to see how CALL fits into a general programme of research and development in the use of computers. We have also warned that any developments in CALL should be set within a curriculum framework. It is now time to bring these desiderata more closely together.

Any curriculum for language teaching and learning (one might say, any curriculum), whether viewed from the macro end of state or institutional policy or from the micro end of classroom management, is a compromise forged against a background of learner needs and abilities, teacher resources and society's requirements. A complex juggling act takes place, in which a number of distinct but relatable balls are in play: *data* (or texts to be worked upon and transmitted), *information* (or tools needed to access and make accessible those data), *process* (or tasks and means whereby the accessing and the making accessible of data take place), and, finally, *procedure* (or the classroom scenarios drawn up by teachers, learners and authorities in their various roles, within which all the balls combine).

Broadly speaking, two perspectives have traditionally been taken on the execution of this act. On the one hand, the components (now leaving the juggling metaphor) may be locked tightly together so that their interdependence is, as it were, prescribed for the benefit of learners on their behalf. On the other hand, the process of artfully combining and recombining the components in response to classroom eventuality and learner/teacher need may be seen as the way in which the curriculum itself is created in the procedures of teaching and learning.

In terms of *language* teaching and learning, a number of recent papers (Breen, Candlin and Waters 1979; Breen 1983, 1984; Candlin 1984) have set out the alternatives and have argued, on linguistic, psycholinguistic and educational terms, for the latter course. In a prescriptive and product-oriented curriculum, data are typically selected or manufactured, as language texts, in order to highlight aspects of linguistic information, whether phonological, lexico-syntactic, semantic, or (more rarely) discoursal and pragmatic. Alternatively,

data are introduced and particular items of linguistic information are deemed to be notable and learn-worthy for whole classes of learners. Yet again, whatever data are selected and whatever information highlighted, certain processes of accessing and making accessible those data, aided by the given information, become valued as the most effective aids and means to learning. All this, as we say, is done prescriptively on behalf of unfamiliar learners. In a negotiated and process-oriented curriculum, on the other hand, the modes of combination are not pre-set. Data to be worked upon and made accessible arise from classroom decision, as does the information needed by teacher and learners in the class. Range, speed and user-friendliness of such access to information is what is important. Moreover, given the extreme variability among learners, in terms of a host of criteria, what is needed in process terms is a bank of authentic and interactive tasks, available to be accessed by learners at different levels of competence and with different learning styles and strategies in the accomplishment of problem-solving activities. In this model, judgements about the curriculum are made within the process of teaching and learning, very much as an expert system guides a set of procedures. Here instruction is negotiative within a framework of curriculum guidelines, not transmissive on the basis of a set of regulations.

Returning now to CALL, what options are available in the light of these broad curriculum alternatives? The papers in this volume indicate both a present position and a future possibility, the achievement of which depends, of course, in part on software and hardware availability, but even more on the orientation of the computer-assisted curriculum. Crudely, we can remain where many individuals, institutions and publishers stand at present, offering teachers and learners software designed for a curriculum of the first type: packages in which data, information and practice material are presented as a system to be followed and within which there is little or no opportunity for flexibility, let alone user contribution. The self-containedness of the software encourages a transmissive view of the educational process. At one or two removes from this most convergent practice is the use of authoring systems and templates which allow users choices of content and information; the use of database systems with which learners can organize and manage all kinds of information and data relevant to their learning interests; and the use of open-ended packages which, in particular, permit the storage of new kinds of content. As soon as we can make the educational shift to the more divergent and process-oriented curriculum, however, three immediate consequences will

derive for our view of CALL, and, incidentally, for our view of the link between CALL and computer-based language research. Firstly, we will take a different view of the relationship between computer, teacher and learner. The computer will take on a function of mediating social interaction within the classroom, becoming neither (to cite John Higgins) master nor slave. It will offer the means for learners and teachers to design their own curricula by providing access to data, information and process in relation to their specific and changing demands. In short, it will offer conditions whereby the cognitive, social and communicative aims of the language classroom can be satisfied. Secondly, we will alter our perception of the economy of language learning and teaching. Rather than requiring teachers and institutions constantly to meet the fresh costs of packaged software (a cost already too high to bear in programming time for all except the professional, and in end-cost for all except the most affluent), the combinability of the curriculum components will allow us, in computing terms, to separate programs which can generate learner-tasks from files which provide texts upon which the tasks can operate. Such a system will, like the curriculum model it emulates, consist of an augmentable text bank on file, a suite of programs designed to generate tasks, and a control program to effect the variable co-selection of task and text. The economy will derive from the reusability of these tasks on new texts. What of the third consequence? No paper on CALL is without its futuristic appeal. Hopes are pinned on a judicious combination of hardware development, software innovation, and changes in user behaviour. Currently, interest is focused on interactive video, speech synthesis and recognition, multi-tasking and networking and the possibility of access to ever-larger and more specific databases greatly enhanced by the deployment of optical character readers. Many of these developments are already in experimental and laboratory use. To deliver these and other futures to the language learning classroom will require, however, more than merely an increase of resource; it will need, on the one hand, an interdependence between CALL and computer-based language research and on the other hand, especially, a curriculum framework appropriate and ready to receive them.

To conclude, we might, speculatively enough, indicate what such a curriculum for CALL ought to be requiring, if it is to be more proactive and less reactive to software and hardware possibilities. In the world of *data*, we will need a range of texts, interactively available in audio-visual and hardcopy modes, utilizing computers and videoplayers for classroom access. Furthermore, we will need the com-

petence and resources in the classroom to create such texts and augment those already available. We need, in short, comprehensible input tailored to our learners' needs and abilities, deliverable to them in a user-friendly fashion. Looking farther ahead, perhaps, we need in the world of *information*, classroom access to language databases, lexicographic and grammatical corpora, oriented to learners' interlanguages and displayed in terms that learners (not only lexicographers and grammarians) can understand. Such corpora could, in principle, be augmented by speech analysers and synthesizers, focusing especially on the problems of supra-segmental patterning, and by pragmatic databases with their inventories of sociolinguistically specified forms of use. To these could be added a collection of discourse types, as a kind of text typology, covering a range of spoken and written activities. There is no doubt, too, that learners would find it useful to have access to diaries of the learning processes of other learners like themselves, routes through the problems of second language learning, if you like, displayed in the form of tried and tested learning procedures. What of the *process* tasks to be made available as problem-solving exercises for learners to apply to text? Two characteristics will predominate: they will have to involve learners in solving problems and experimenting with language learning, and they will need to be differentiated in terms of offering alternative routes, varying levels of demand and attainment, and alternative possibilities of solution. In short, they will need to mirror the cognitive requirements of language learning. More than that, however, since language learning is a social endeavour, such process tasks ought to encourage co-operation and negotiation among learners, and with the machine. Finally, what are the demands on *procedure*? We will need software which matches what we already know from research into second language learning; it will need to be reliable, able to be amended after evaluation, centrally cataloguable and easily accessible. Above all we need teacher and learner involvement in development. In hardware, we will need compatibility and the possibility of gradual augmentation in line with use and a marketing policy set at a price which educational establishments in a range of countries and systems can afford. Perhaps most important of all, however, we will need a shift in teacher attitude and competence through extended in-service education and training. Given that, CALL can move away from a hobbyist purism towards an attitude which will encourage utilization and adaptation of a whole range of presently existing software not specifically designed for language learning, but which can meet the criteria we have outlined. Central to the encouragement of that process of change, however, is

the need to keep open lines of communication between practice and research, and the need to begin from a curriculum base. Both of these desiderata, as we have said above, underpin this collection of papers.

Geoffrey Leech   *University of Lancaster*
Christopher Candlin

Contents

Introduction to Chapter 1

Innovations in educational technology, especially those, like CALL, which offer challenges not only to the established roles of teachers and learners, the nature of materials and the organization of classrooms, but indeed to the language curriculum as a whole, need to be provided with an educational rationale if they are not to become fashionable instruments of a self-promotive *avant garde*. In short, they need to be critically examined for their educational potential, their classroom costs and benefits. In the first paper in this collection, Martin Phillips offers just such a salutary critique. He does so by posing a series of questions for debate, selecting as his topic what he terms 'the boundaries of what is educationally computable'. In so doing, his paper sets the scene for the book as a whole, looking at CALL and computer-assisted language research as mutually influencing, but always within the framework of the professional context of the curriculum.

1 CALL in its educational context

Martin Phillips

What can be appropriately done in a paper such as this, in my view, is to try to provide some context for the activities in which practitioners of CALL, as teachers and as course participants, become engaged. In the immediacy of the appeal that interacting with computers has, it is unusually easy to lose sight of the *point* of using them, that is their educational rationale. More importantly, it is only rarely that consideration is given to when computers should *not* be used. And so a useful exercise will be to ask the kind of context-setting questions which will help stimulate debate on where the boundaries are to be drawn of what is educationally computable, if I may use the term. At this point it is usual to make the customary disclaimer to the effect that no attempt will be made to provide answers, merely to raise issues. This, of course, is a convenient evasion of responsibility which is perhaps not always entirely legitimate. And yet in this instance it is not only justified but inescapable. We simply do not have answers yet. Indeed we are only just beginning to explore what the appropriate questions are that need asking. It is important that we undertake this exploration. I believe that computers have much to offer us as English language teachers and will have more to offer in the future. But with so seductive, so powerful and so pervasive a technology it is vital to develop and maintain a continuous critique.

In one sense CALL is nothing new. We have always had educational technology of more or less sophistication. As Roe (1985) has pointed out, the original educational technology is the teacher's voice and it is still, potentially at least, the best. The first quantum leap came with a revolutionary technology for preserving the teacher's voice in writing. Chalk was invented. In the right hands it is a powerful if somewhat dusty tool! And then came ways of breaking down to some extent the barrier set up by the classroom walls between education and the world outside: tape recorders and language laboratories for sound and an increasingly sophisticated range of