

*A NEW MEDIUM AND TOOL
FOR LANGUAGE TEACHING*

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Changing technology

We have recently had a government campaign in Britain to make us all aware of the information revolution, for "there's no future without it".¹ We were asked to think what part split-second processing, transmission and presentation of information might play in our workaday lives and at home. From many sides the message seems to be that if we do not voluntarily participate in the computer revolution then it will be forced upon those who have spurned or tried to avoid this particular advance. So far access to computers has been limited but they may soon be almost as common as pocket calculators are now. One of their multiple uses is for teaching, and some programmes using computer-assisted learning (CAL), such as PLATO at the University of Illinois, have been developing for many years. CAL projects in second and foreign language learning are becoming increasingly common and materials are offered with the home computers (or micro-processors) now on sale.

If the pundits are right, then before long many language teachers and, more significantly, learners, will have access to a micro-processor. It seems nearly certain as well that this will not just be true in the richer countries but also in the Third World. A micro-processor may soon cost no more than a fairly ordinary cassette-recorder : one already does, but it is not powerful enough yet to have many uses in language learning. Having obtained your micro-processor, all you need is a television set to connect it to for use. So we can see that this new piece of educational technology may easily spread world-wide in use.

The reactions I have encountered to this piece of information seem to be to regard this as either a threat or some kind of panacea. I want to consider both views and see if they are justified.

The technological spectre

One reaction of those who see CAL as a threat is to say that such machines are an abomination and a menace to teachers, whom they will replace. This Luddite fear comes from a failure to understand the computer and its potential. For like the language laboratory and video-recorder, the former of which was viewed in exactly the same terms, the computer is only another teaching aid. However, the spread of its use will require teachers to be prepared to change and adapt their methods, so that CAL can be integrated as part of the syllabus. In other words, there is no evidence to suggest that CAL can do all the work of a teacher; it is suited for a variety of learning tasks but not all that are current in language teaching : learning to talk to people for example. Some learners are found to prefer working with a computer to working with a teacher, and the potential value of CAL in a self-access mode is considerable. Certainly it is true that used in this way CAL may reduce the amount, and change the kind of contact between teacher and learners, giving the teacher a more administrative role. The teacher may also have to be prepared to adapt or write material for use in CAL programmes; even the most powerful computer at present available does not have the intelligence of an earwig, so there will be work creating materials and monitoring learners' use and progress in CAL programmes.

Although the advent of CAL in language teaching should not be considered as a threat to the number of teaching posts, it is not without implications for the nature of the work that teachers will be required to do. Because its range of potential uses is greater, proper mastery and control of the computer in language courses will demand more skill and adaptation than the introduction of the language laboratory did. For some people introduction of this technology will need to include showing them how to overcome their fear of machines and the enthusiasts might remember that an unwilling, incompetent user of a machine is a bad user.

The seduction of technology

A more real threat is created by the panacea approach, which has a number of variants. We should not forget the unthinking enthusiasm with which other technological aids have been accepted : "This is the latest thing, everyone says they are good: let's get one". The aid is made available and teachers are expected to use it with their classes, while it is forgotten this also requires that they should be given adequate training in how to exploit the new resource, so that it is used efficiently; it requires technical back-up, so that the aid can be adapted to meet the needs of its users and so that it is reliable, in good working order; it also requires an adequate provision of software. Adopting the use of a new aid requires consideration of the consequences of that decision.

Why, though, might you have decided to adopt the use of CAL in the first place? One argument I have heard I would qualify as the Everest approach: because it is there. "If we, the ELT profession, do not use CAL, it will be forced upon us", the argument runs. "There will be a computer in every home in a few years and people will be using computers for everything." The *reductio ad absurdum* of this might be to point out that every home has a bath... But that is not a means of communication. Many homes have a television and more a radio; several have telephones, but we have not found their presence a compelling reason to make more than limited use of them and certainly not general and almost continuous use in the way some enthusiasts would predict for the computer. "That is because they are not as flexible or interactive as a computer", comes the reply.

There are limits on the flexibility. While even the very small home computers now available permit some animation of diagrams, it is not always possible to find a computer that will permit integration of a video-recording with the CAL programme. Soon there will be systems of voice synthesis available to satisfy language teaching needs but voice recognition is still in its infancy, so there are several areas of language teaching which computers are not yet ready to handle. The flexibility needs to be understood largely in terms of access and availability.

A computer can be programmed to be user-friendly, to say (that is, display) "hello" and "good-bye" to its users and to address them by name; it can be programmed to give feedback on the performance of a task, to display "Well done, you got that right" or "Oops! Wrong, have another go". Hence the claim for the interactive nature of CAL programmes, and it is an interesting one because no other teaching aid can claim it. Learners are reported to like this and the apparently caring, attentive nature of the computer is undoubtedly one of the factors which make it an aid that can reinforce or even increase learner motivation. When the learner makes a mistake there is none of the stress of this happening in front of a class of peers. However, it should not be forgotten that it is not the computer that is friendly, but the human being who wrote the programme it uses.

Another panacea argument follows this: "CAL programmes are motivating, just wait till we can put out language materials on a micro-processor". There is no consideration of whether CAL is suitable for all learning tasks, or for all learners, some of whom may be put off by having to use a machine just as some teachers are. The question of whether the computer is a suitable aid for use with a learning task is more fundamental.

Evaluating the technology

In order to incorporate a language learning task in a CAL programme it must, for the time being, be one that can be done in writing; it is often, but

need not be, one that can be expressed in a series of binary choices. The fundamental nature of CAL tasks is therefore that of the methods of programmed learning current twenty years ago. The computer has brought with it the technology to permit implementing the more sophisticated branching programmes then devised and to speed up and simplify their use for the learner : the programme decides which branch needs to be followed next and does it in a split second. This also implies that some of the learning tasks for which a CAL programme is suitable are essentially behaviourist habit-formation. It is interesting to note that if bibliographies provide any guide to volume of activity then CAL is more widely used at present in teaching foreign languages other than English, where structuralist and behaviourist methodology are still more commonly found.

Because of its motivating powers one British professor of French thought a CAL programme would be just the thing to take the drudgery out of mastering irregular verbs and that he might have found the solution for getting his more recalcitrant students to overcome their difficulties. It is certainly something to try in this way but its use will need to be evaluated: does it really serve the purpose for which it is intended? I may be wrong but I thought the language laboratory was claimed to be motivating, that it was going to help students get over near habitual errors. There is no guarantee that an aid will encourage learning, though it may be very good for teaching. It may certainly free teachers from conducting some mechanical learning tasks. There is a danger though, that because it offers a solution to the mechanical, practical problems encountered in developing programmed learning, many teachers will unthinkingly accept a return to a largely discredited theory of learning.

However, another sort of learning activity for which the computer is suitable uses problem-solving tasks, at which learners may work individually or in pairs. This introduces freer, more creative use of language as a means of communication. It emphasises the capacity of the computer as a means of storing and retrieving information which may be done more efficiently, with less distraction here than for a learner using a book. Here the computer is clearly seen for what it is and the role it may have in education as a learning aid, with the learner in control of the process, not the machine.

Unfortunately research in the field of educational technology is generally inconclusive; for example, no-one has ever been able to demonstrate the superiority of one aid over another if both were suitable for the task.² It is unlikely therefore that anyone is going to be able to demonstrate conclusively that CAL is better than any other technique, though properly evaluated work may show that it is appropriate for certain tasks, as an aid.

Some mention should be made of uses other than for learning. Mainframe computers have been used for some time for marking objective tests in public examinations and working out scores. There is a similar, useful role for the micro-processor in testing and it may display the questions and record the answers as well as calculate the results. Many offices make use of micro-processors as word-processors and this exploitation for education to produce or edit texts is a valuable one for language teaching.

One sphere of activity where the computer appeals to other modes of learning is in its use for simulation. Here the learner may work alone or with a fellow student on a problem-solving task. The learner is in charge, telling the computer what to do, rather than obeying the machine.

The main problem is to ensure that the aid is fully exploited and that tasks carried out with its help, however elegantly presented, are not trivial in terms of the learning objectives they set.

Conclusion

A new teaching aid that offers as many possibilities as the computer is not to be spurned. For example, with a system as sophisticated as PLATO it is possible to record and then monitor the kinds of errors students make in attempting a task, the number of attempts they make, how long they take to complete a task? So it offers a means of gathering information about materials and about learning for research into understanding second language acquisition. Obsession with the aid, the machine as a toy, is reported to become greater occasionally than the desire to learn the teacher-imposed task or the need to recognise the triviality of the task offered to learners. This new-toy fascination is most dangerous in the teacher-enthusiasts who may become more obsessed with doing something efficiently in terms of computer-programming than with its appropriacy in terms of language-learning.

I have seen no suggestion yet that we can be certain some learning objective mastered on the computer will necessarily transfer. I am thinking of our seeing a phenomenon similar to the one where learners became proficient speakers in a language laboratory but were still unable to talk outside the lab. Friendly computer users may still not manage to be friendly to other humans.

Finally, I would like to dedicate this paper to the lecturer in Computer Studies who when asked why there were no CAL programmes in use in his department, replied, "Well, we enjoy teaching, and anyway they're such a drag to prepare".

NOTES

An earlier version of this paper appeared in TESOL-France News.

1. Information Technology 82 advertisement
2. Schramm W. 1977 BIG MEDIA LITTLE MEDIA Sage