English Teachers' Barriers to the Use of Computer-assisted Language Learning

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Computers have been used for language teaching ever since the 1960's. This 40-year period can be divided into three main stages: behaviorist CALL, communicative CALL, and integrative CALL. Each stage corresponds to a certain level of technology and certain pedagogical theories. The reasons for using Computer-assisted Language Learning include: (a) experiential learning, (b) motivation, (c) enhance student achievement, (d) authentic materials for study, (e) greater interaction, (f) individualization, (g) independence from a single source of information, and (h) global understanding. The barriers inhibiting the practice of Computer-assisted Language Learning can be classified in the following common categories: (a) financial barriers, (b) availability of computer hardware and software, (c) technical and theoretical knowledge, and (d) acceptance of the technology.

Introduction

In the last few years the number of teachers using Computer-assisted Language Learning (CALL) has increased markedly and numerous articles have been written about the role of technology in education in the 21st century. Although the potential of the Internet for educational use has not been fully explored yet and the average school still makes limited use of computers, it is obvious that we have entered a new information age in which the links between technology and TEFL have already been established.

In the early 90's education started being affected by the introduction of word processors in schools, colleges and universities. This mainly had to do with written assignments. The development of the Internet brought about a revolution in the teachers' perspective, as the teaching tools offered through the Internet were gradually becoming more reliable. Nowadays, the Internet is gaining immense popularity in foreign language teaching and more and more educators and learners are embracing it.

The History of CALL

Computers have been used for language teaching ever since the 1960's. According to Warschauer & Healey (1998), this 40-year period can be divided into three main stages: behaviorist CALL, communicative CALL, and integrative CALL. Each stage corresponds to a certain level of technology and certain pedagogical theories.

Behaviorist CALL

In the 1960's and 1970's the first form of computer-assisted Language Learning featured repetitive language drills, the so-called drill-and-practice method. It was based on the behaviorist learning model and as such the computer was viewed as little more than a mechanical tutor that never grew tired. Behaviorist CALL was first designed and implemented in the era of the mainframe and the best-known tutorial system, PLATO, ran on its own special hardware. It was mainly used for extensive drills, explicit grammar instruction, and translation tests (Ahmad, et al., 1985).

Communicative CALL

Communicative CALL emerged in the 1970's and 1980's as a reaction to the behaviorist approach to language learning. Proponents of communicative CALL rejected behaviorist approaches at both the theoretical and pedagogical level. They stressed that CALL should focus more on using forms rather than on the forms themselves. Grammar should be taught implicitly and students should be encouraged to generate original utterances instead of manipulating prefabricated forms (Jones & Fortescue, 1987; Philips, 1987). This form of computer-based instruction corresponded to cognitive theories which recognized that learning was a creative process of discovery, expression, and development. The mainframe was replaced by personal computers that allowed greater possibilities for individual work. Popular CALL software in this era included text reconstruction programmers and simulations.

Integrative CALL

The last stage of computer-assisted Language Learning is integrative CALL. Communicative CALL was criticized for using the computer in an ad hoc and disconnected fashion and using the computer made 'a greater contribution to marginal rather than central elements' of language learning (Kenning & Kenning, 1990: 90). Teachers have moved away from a cognitive view of communicative language teaching to a socio-cognitive view that emphasizes real language use in a meaningful, authentic context. Integrative CALL seeks both to integrate the various skills of language learning (listening, speaking, writing, and reading) and to integrate technology more fully into language teaching (Warschauer & Healey, 1998). To this end the multimedia-networked computer provides a range of informational, communicative, and publishing tools that are potentially available to every student.

Why Use CALL?

Research and practice suggest that, appropriately implemented, network-based technology can contribute significantly to:
Experiential Learning
> The World Wide Web makes it possible for students to tackle a huge amount of human experience. In such a way, they can learn by doing things themselves. They become the creators not just the receivers of knowledge. As the way information is presented is not linear, users develop thinking skills and choose what to explore.

Motivation

Computers are most popular among students either because they are associated with fun and games or because they are considered to be fashionable. Student motivation is therefore increased, especially whenever a variety of activities are offered, which make them feel more independent.

Enhanced Student Achievement

Network-based instruction can help pupils strengthen their linguistic skills by positively affecting their learning attitude and by helping them build self-instruction strategies and promote their self-confidence.

Authentic Materials for Study

All students can use various resources of authentic reading materials either at school or from their home. Those materials can be accessed 24 hours a day at a relatively low cost.

Greater Interaction

Random access to Web pages breaks the linear flow of instruction. By sending E-mail and joining newsgroups, EFL students can communicate with people they have never met. They can also interact with their own classmates. Furthermore, some Internet activities give students positive and negative feedback by automatically correcting their on-line exercises.

Individualization

Shy or inhibited students can be greatly benefited by individualized, student-centered collaborative learning. High fliers can also realize their full potential without preventing their peers from working at their own pace.

Independence from a Single Source of Information

Although students can still use their books, they are given the chance to escape from canned knowledge and discover thousands of information sources. As a result, their education fulfils the need for interdisciplinary learning in a multicultural world.

Global Understanding

A foreign language is studied in a cultural context. In a world where the use of the Internet becomes more and more widespread, an English Language teacher's duty is to facilitate students' access to the web and make them feel citizens of a global classroom, practicing communication on a global level.

What Can We Do With CALL?

There is a wide range of on-line applications which are already available for use in the foreign language class. These include dictionaries and encyclopedias, links for teachers, chat-rooms, pronunciation tutors, grammar and vocabulary quizzes, games and puzzles, literary extracts. The World Wide Web (WWW) is a virtual library of information that can be accessed by any user around the clock. If someone wants to read or listen to the news, for example, there are a number of sources offering the latest news either printed or recorded. The most important newspapers and magazines in the world are available on-line and the same is the case with radio and TV channels.

Another example is communicating with electronic pen friends, something that most students would enjoy. Teachers should explain how it all works and help students find their keypals. Two EFL classes from different countries can arrange to send E-mail regularly to one another. This can be done quite easily thanks to the web sites providing lists of students looking for communication. It is also possible for two or more students to join a chat-room and talk on-line through E-mail. .

Another network-based EFL activity could be project writing. By working for a project a pupil can construct knowledge rather that only receive it. Students can work on their own, in groups of two or in larger teams, in order to write an assignment, the size of which may vary according to the objectives set by the instructor. A variety of sources can be used besides the Internet such as school libraries, encyclopedias, reference books etc. The Internet itself can provide a lot of food for thought. The final outcome of their research can be typed using a word processor. A word processor can be used in writing compositions, in preparing a class newsletter or in producing a school home page. In such a Web page students can publish their project work so that it can reach a wider audience. That makes them feel more responsible for the final product and consequently makes them work more laboriously.

The Internet and the rise of computer-mediated communication in particular have reshaped the uses of computers for language learning. The recent shift to global information-based economies means that students will need to learn how to deal with large amounts of information and have to be able to communicate across languages and cultures. At the same time, the role of the teacher has changed as well. Teachers are not the only source of information any more, but act as facilitators so that students can actively interpret and organize the information they are given, fitting it into prior knowledge (Dole, et al., 1991). Students have become active participants in learning and are encouraged to be explorers and creators of language rather than passive recipients of it (Brown, 1991). Integrative CALL stresses these issues and additionally lets learners of a language communicate inexpensively with other learners or native speakers. As such, it combines information processing, communication, use of authentic language, and learner autonomy, all of which are of major importance in current language learning theories.

Teachers' Barriers to the Use of Computer-assisted Language Learning

The barriers inhibiting the practice of Computer-assisted Language Learning can be classified in the following common categories (a) financial barriers, (b) availability of computer hardware and software, (c) technical and theoretical knowledge, and (d) acceptance of the technology.

Financial Barriers

Financial barriers are mentioned most frequently in the literature by language education practitioners. They include the cost of hardware, software, maintenance (particular of the

most advanced equipment), and extend to some staff development. Froke (1994b) said, "concerning the money, the challenge was unique because of the nature of the technology." Existing universities policies and procedures for budgeting and accounting were well advanced for classroom instruction. The costs of media were accounted for in the university as a part of the cost of instruction. Though the initial investment in hardware is high, inhibiting institutions' introduction of advance technologies; but Hooper (1995) recommends that the cost of computers will be so low that they will be available in most schools and homes in the future.

Lewis et al. (1994) indicate three conditions under which Computer-assisted Learning and other technologies can be cost-effectiveness: Computer-assisted Learning costs the same as conventional instruction but ends up with producing higher achievement in the same amount of instructional time, it results in students achieving the same level but in less time. These authors indicate that in examples where costs of using technologies in education are calculated, they are usually understand because the value of factors, such as faculty time and cost of equipment utilization, is ignored (McClelland, 1996).

Herschbach (1994) argues firmly that new technologies are add-on expenses and will not, in many cases, lower the cost of providing educational services. He stated that that the new technologies probably will not replace the teachers, but will supplement their efforts, as has been the pattern with other technologies. The technologies will not decrease educational costs or increase teacher productivity as currently used. Low usage causes the cost barrier. Computers, interactive instruction TV, and other devices are used very few hours of the day, week, or month. Either the number of learners or the amount of time learners apply the technology must be increased substantially to approach the concept of cost-effectiveness. There are other more quick and less expensive ways of reducing costs, no matter how inexpensive the technology being used (Kincaid, McEachron, & McKinney,1994.

Availability of Computer Hardware and Software

The most significant aspects of computer are hardware and software. Availability of high quality software is the most pressing challenge in applying the new technologies in education (Herschbach, 1994; Miller, 1997; Office of Technology Assessment, 1995; Noreburg & Lundblad, 1997). Underlying this problem is a lack of knowledge of what elements in software will promote different kinds of learning. There are few educators skilled in designing it because software development is costly and time-consuming (McClelland, 1996).

McClelland (1996) indicated having sufficient hardware in locations where learners have access to it problematic and is, of course, partly a financial problem. Computer hardware and software compatibility goes on to be a significant problem. Choosing hardware is difficult because of the many choices of systems to be used in delivering education, the delivery of equipment, and the rapid changes in technology.

Technical and Theoretical Knowledge

A lack of technical and theoretical knowledge is another barrier to the use of Computer-assisted Language Learning technology. Not only is there a shortage of knowledge about developing software to promote learning, as shown above, but many instructors do not understand how to use the new technologies. Furthermore, little is known about integrating these new means of learning into an overall plan. In the communication between McClelland and C. Dede (1995), Dede indicated the more powerful technologies, such as artificial intelligence in computers, might promote learning of higher-order cognitive skills that are difficult to access with today's evaluation procedures and, therefore, the resulting pedagogical gains may be under-valued. Improper use of technologies can affect both the teacher and learner negatively (Office of Technical Assessment, 1995).

Acceptance of Technologies

We live in a time change. Gelatt (1995) stated that change itself has changed. Change has become so rapid, so turbulent, and so unpredictable that is now called "white water" change (p.10). Murphy & Terry (1998a) indicated the current of change move so quickly that they destroy what was considered the norm in the past, and by doing so, create new opportunities. But, there is a natural tendency for organizations to resist change. Wrong conceptions about the use of technology limit innovation and threaten teachers' job and security (Zuber-Skerritt, 1994). Instructors are tend not to use technologies that require substantially more preparation time, and it is tough to provide instructors and learners access to technologies that are easy to use (Herschbach, 1994).

Engaging in Computer-assisted Language Learning is a continuing challenge that requires time and commitment. As we approach the 21st century, we realize that technology as such is not the answer to all our problems. What really matters is how we use technology. Computers can/will never substitute teachers but they offer new opportunities for better language practice. They may actually make the process of language learning significantly richer and play a key role in the reform of a country's educational system. The next generation of students will feel a lot more confident with information technology than we do. As a result, they will also be able to use the Internet to communicate more effectively, practice language skills more thoroughly and solve language learning problems more easily.

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