

CALL by Individual Teachers

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要 旨

初めに、教師がそれぞれのクラスのニーズ分析に基づいてCALLプログラムを準備することを妨げる原因となる問題について論ずる。続いて、個人で働く教師が利用可能な3つのCALLプログラムの案を提示する。それぞれの案は、多額の予算や、商業的コンピューターゲームをプログラムの水準とする学生達のニーズや期待に答えられるようなプログラムを開発するために通常必要とされる専門家集団の必要性を避けている。

Abstract

This paper first discusses some of the problems which prohibit individual teachers from preparing CALL programs based on the results of the needs analysis for their classes. Three proposals for CALL programs that are within the capabilities of the working-alone teacher are then proposed. Each of these methods avoids the requirements for a large budget and a team of specialists which are normally necessary in order to develop programs that will meet the needs and expectations of students who use the commercial computer games that they play as standards for program quality.

Introduction

CALL (Computer Assisted Language Learning) first began appearing in EFL (English as a Foreign Language) classrooms during the mid-1980s. The 1990s saw the more flexible computer labs beginning to replace the older language labs with their dedicated audio and audio-visual machines. The advent of computer labs with a LAN (Local Area Network) and more recently with access to the Internet has further increased the potential usefulness of computer labs and thus their attractiveness to potential students. This in turn has encouraged administrators, who are responsible for establishing the school image and for recruiting, to expend large sums of money on computer labs which are frequently under-utilized.

This paper will first summarize some of the reasons why many teachers find it difficult to include CALL in the curriculum and then offer three possibilities for overcoming these problems.

The Problems and Three solutions

When creating a properly constructed curriculum, the first step is the completion of a needs analysis (Dubin & Olshtain, 1986) during which the curriculum content is decided in relation to the needs of the students, the needs of other related people, the needs of the school, and the needs of society. This initial specification of the curriculum is then modified according to a number of factors, such as the training and experience of the teachers and staff, funding, the time available for the training, the equipment that is available, and the materials that can be provided for student use. These days the next to last category tends to consist of computers and their associated networks, and possibly some LLs, video or audio players, and OHPs. The last category tends to consist of books, tapes, videos, classroom handouts, the content of the Internet, and CALL programs. Depending on the results of the needs analysis, each may have its place in the curriculum.

A problem that frequently arises is that the teacher is required to use the computer lab but the available commercial materials are not designed to meet the needs of that particular group of students as determined by the needs analysis. With printed commercial materials, one of two solutions is generally adopted: either the materials are supplemented with handouts to provide content not covered in the book or portions of the book are not covered in class, eliminating content that was not included in the specified curriculum.

When the needs analysis calls for CALL to be employed, even if this is only to utilize the expensive equipment that the administration has purchased, the first solution above is difficult because most CALL programs are usually designed so that students work at their individual pace and may not even cover exactly the same content. Thus, supplements are frequently difficult to prepare and distribute effectively. The second solution is also problematic because omitting material would usually require modification of the computer program itself. However, the source code will have been compiled and it will not be available to the teacher. Also such modification normally requires programming skills that are far beyond the capability of most classroom teachers.

The obvious solution would be for the teachers to develop class specific CALL programs, just as many teachers prepared class specific LL materials to mesh with the curriculum. However, this is generally not practical for at least three reasons.

First, commercial CALL programs have become very sophisticated, utilizing graphics and sound in addition to text and frequently including extremely complicated programs that require many thousands of lines of programs written in difficult to master programming languages. While early CALL programs were within the capabilities of a single author (Adamson, 1997, 1998, 1999; Higgins), a look at the credits for any CALL program will show that

programs are now produced by large teams of people, each responsible for a particular portion of the content. Assembling such a team requires a large amount of in-place funding and this is beyond the capabilities of an individual teacher and usually of the individual school. Additionally, development and production costs are quite large and could not be recouped through the use of the program within a single class. Because the program was designed to fit the results of the needs analysis for a specific class, it would be extremely unlikely to be suitable for other classes at other schools, prohibiting it from being sold commercially to repay development costs.

A second factor prohibiting the preparation of CALL programs for specific classes is the time involved. University-level language teachers in Japan generally have at least twice as many hours a week in the classroom as do faculty members in other areas. One physics professor, who wishes to remain anonymous, stated that the hidden reason for this is financial. Faculty members are expected to service roughly equal numbers of students. Thus, teachers who can give lectures in a large hall full of students have fewer classes than language teachers who insist on smaller class sizes. This larger class load with its accompanying increasing in preparation time leaves the individual teacher little time to prepare CALL programs for a specific class. The situation is even worse in language schools or high schools. Such teachers are expected to be in the classroom for 25 or more hours a week, leaving no time outside of class for anything other than class preparation.

The third problem is that, even if time were available, few language teachers have the necessary programming skills. Early programs were generally written in interpreted BASIC, an easy-to-learn programming language. However, BASIC no longer meets the needs of modern programs and compiled languages such as C++ are now used for most programming. These languages, however, take hundreds

of hours to master at a level sufficient for CALL requirements.

While these problems are definitely real, there are ways around them if we prepare material that is based on text rather than visuals plus text. Currently HTML (Hyper Text Mark up Language) provides simple access to quite sophisticated text presentation which should to a very large extent alleviate the first problem. HTML is easy to learn and even easier to use, making the second and third problems less important. Additionally authoring programs which are available either freely or for a small fee can also reduce the effect of these two problems.

There are three solutions that quickly come to mind. First, the teacher could locate authoring programs and insert the appropriate content for the class in question. A second solution is a return to the programmed learning methods that were popular in the 1950s and 1960s. Finally, there is the development of old-fashion text-based adventure games, which are now relatively simple to prepare and use.

The following paragraphs discuss in some detail the problems and benefits associated with each of these potential solutions to the problems of adapting CALL to the results of the needs analysis.

Solution 1: Shareware programs

The expansion of the Internet has brought with it the establishment of a great many sites which contain sample programs which teachers may use for free. Many of these programs are authoring programs which allow the teacher to insert text or questions and answers into a programmer-designed format. This means that the teacher can prepare such programs with little more effort or time than that required for the preparation of the usual printed materials.

These sites come and go frequently, often changing addresses a number of times over their life span.

Therefore, there is little value in citing specific sites. An interested teacher could quickly locate numerous sites by employing any of the common Internet search engines. It is even possible to locate websites that contain lists of references to other websites that contain authoring or sample programs.

Many of these programs are written in JAVA or JAVASCRIPT, so that they can be used on any computer regardless of what operating system is in use.

Solution 2: Programmed learning

In the 1950s and 1960s it was possible to buy programmed learning texts on almost any subject, including languages. This author has had many successful learning experiences with subjects ranging from mathematics to classical Japanese. It is not entirely clear why such materials went out of fashion, but it is probably related to fall of the Skinnerian ideas on which such materials were based rather than their actual effectiveness. The shortness of this paper precludes the discussion but programmed learning can be supported by arguments based on the current views of applied linguistics and cognitive psychology.

In programmed learning, the material is presented in frames which contain the answer to a question from the previous frame, some new information and another question. The student compares his or her response to the answer given, reads the new material and the new questions, then answers the question and moves to the next frame.

Sometimes an alternate format is used where the questions are multiple choice and each answer refers the student to a separate frame. This allows the material to be revised in direct relation to student mistakes.

Three physical layouts were common. In one, the frames were arranged vertically on the page with the answers on the right-hand side. The student covered this with a piece of paper, moving it to

uncover the answers after completing the remainder of the frame. In the second, the frames were arranged on consecutive pages and the student was forced to turn to the next page before being able to see the answer. The multiple-choice type format was similar, except that each answer referred the student to a frame on a specific page. Thus, the student proceeded through the book in a linear fashion in the first format, in a linear but recycling format in the second, and in a random order in the third.

In order to make programmed learning materials, the content to be learned is broken down into small, bite-sized chunks, each of which is presented in a separate frame. The questions address the main point of the chunks, their main purpose being simply to focus the student's attention on the material in the frame. This approach appears to be possible in EFL no matter which pedagogical method is being used as a basis for the material.

Thus far, CALL has not been mentioned in regard to programmed learning, but the computer is an ideal tool for presenting programmed learning material to the student. Rather than presenting the frames to the student in book form, the frames can be presented in electronic form using HTML (Hyper Text Markup Language) to organize the frames and to locate and display the next frame. The student could access the frames through data stored on a computer's hard disk memory, a CD ROM disk, a LAN within the school, or an Internet website.

HTML is actually quite simple to learn so a computer literate teacher should be able to master it sufficiently for programmed learning purposes with just a few hours of study. A search engine will locate dozens of Internet addresses containing HTML self-study sites. There are also numerous sites containing sample programs that can be downloaded, possibly modified, and then reused. Additionally there are free or inexpensive authoring programs

that allow the teacher to avoid programming altogether.

An additional advantage of the CALL approach to programmed learning is that electronically presented frames, in addition to text and pictures, can display both audio sound tracks and videos.

Solution 3: Old-fashioned adventure games

In the early 1980s, when the Apple IIe computer was state of the art, text-based adventure games were extremely popular. The structure of these games was in many ways similar to programmed learning. A frame was presented with a text that described what was located in the physical space or time that was represented by that frame. The user moved to the next frame by responding to a question or by inputting an order in a simplified language that the user was required to learn. These languages had an extremely limited vocabulary, consisting of fewer than 100 words in most cases, and a limited syntax, usually a verb followed by an object, e.g., move left, pick-up box, or open door. Obviously the question-and-answer format would be more appropriate for EFL students since the reduced language would be of little use and NLP (natural language processing) programming is far beyond the capabilities of a single, working teacher. The story line of these adventure games was often related to some kind of quest where the player was looking for something. The player moved through the gameland until the object was located and the game was won.

The continuing appeal of text-based adventure games is demonstrated by the hundreds of games that are currently available on the Internet. There are also authoring programs available free of charge, but these use reduced language input and are thus not optimal for EFL students.

HTML Program Characteristics

The following paragraphs describe in some detail the characteristics of HTML text-based programs

as adapted for EFL students that were introduced above. For this discussion, we will assume that the needs analysis has determined that reading is a primary goal.

The program will consist of teacher-developed hyperlinked HTML pages. There are basically two ways that pages can be hyperlinked: a single link and multiple links. A single link is a one way link connecting Page A to Page B. A multiple link connects Page A to Pages B1 to Bn, where n is any number larger than 1, depending on some response by the user. Making links bidirectional allows the construction of more complicated networks. This is done by pairing two single links so that one connects Page A to Page B and the other connects Page B to Page A. This means that the student player can freely move between the two pages. With these basic link types, it is possible to construct extremely complicated networks, including loops where the user moves from page to page for a while but eventually returns to the starting point. It is also possible to construct modules, a group of interlinked pages that can only be accessed from a limited number of pages.

The actual network that is constructed will depend upon the content and the content will depend upon the outcome of the needs analysis. If the pages (frames) contain content and the choice of the next pages is made on the basis of the student's answer to a question, or questions, on this content, then we basically have programmed learning. If, however, the page contains a segment of some kind of story and the next page is determined by the student's choice of an action based on the overall goals and the information available, then we have an adventure game. It is also possible to combine the two formats. In this case, the story line would continue but periodically the student would have to pass a test in order to enter the next module. With a little thought, it should be easy to construct the tests in such a way that the

tests appear to be a natural part of the story. The details of this will vary depending upon the specifics of the story that is used.

One advantage of the adventure game or programmed learning format is that it can be easily expanded at any point. Adding new pages requires only the new pages and the addition of new hyperlinks to the existing pages, a simple operation requiring only a minute or two. Thus the teacher can begin by preparing

a minimal program and then expanding it as time becomes available. In much the same way that many teachers improve the handouts that they prepare by a yearly revision or additions, the adventure game could be extended each year by adding new pages within the existing network or by extending the system into new areas.

Another positive point, one that applies to all three of the suggestions presented above, is that the materials can be presented to the student from the hard disk of a computer, from a CD or other memory device, from a LAN within the school, or from the Internet. This gives the teacher a great deal of flexibility in when and where the students use the materials.

Conclusions

While the problems of sophistication, time, and complex programming prohibit the isolated teacher from preparing CALL programs that can compete with commercial game programs for student attention, there are possibilities for preparing relatively sophisticated text-based CALL programs to support specific classes. The three possibilities presented above each include features which eliminate, or at least greatly reduce the effect of the described problems. Hopefully, the discussion has demonstrated that the individual teacher can consider the preparation of CALL materials which directly support the goals of the class as determined by the needs analysis. By using pre-written programs, authoring programs or HTML

with or without an HTML authoring program, the teacher can easily and quickly place class specific materials into fairly sophisticated CALL formats for the students to use in or out of class.

References

- Adamson, C.(1997). *The Growth of CALL Programming*. In P. Lewis (Ed.), *CALL: Basics and Beyond*. Tokyo: Japan Association for Language Teaching. (pgs.57-61)
- Adamson, C.(1998). *CALLing The Next Generation*. In P. Lewis (Ed.), *Teachers, learners, and computers: Exploring relationships in CALL*. Tokyo: Japan Association for Language Teaching. (pgs.215- 220)
- Adamson, C. (1999). *The development of SLA theory driven CALLware*. In P. Lewis (Ed.), *CALLing Asia*. Tokyo: Japan Association for Language Teaching.
- Dubin, F. & E. Olshtain. (1986). *Course Design*. New York: Cambridge University Press. (pgs.223-225)
- Higgins, J. See homepage at <http://www.stir.ac.uk/departments/humansciences/celt/staff/higgins.htm>