

Chinese College Students' Reaction to CAI: A Case Study

Shen Shu

The Second Military Medical University, China

In this article a case study was made to examine and evaluate the effectiveness of College English Intensive Reading I courseware in particular, and evaluate the feasibility and effectiveness of computer assisted intensive reading course in college English in general. The results of the study turned out to be positive in actively engaging students in learning as well as in enhancing students' reading comprehension and motivating students to learn. Further instructive implications also remained.

Computers offer a different kind of reading experience to the language learners in contrast to traditional textbooks. Research has shown that reading instruction via the computer has the potential to engage students in the reading and learning process because of its capabilities to meet their varying needs. It can also help students perceive the value of success.

However, there is relatively little information available on language teaching through computer-assisted instruction (CAI) in China where many colleges are interested in using language teaching CAI programs, and most English teachers have accepted it as desirable reform. College English teachers in China on the whole have realized the importance of CAI and are trying to catch up with the new trend. A study was made to examine and evaluate the effectiveness of the College English Intensive Reading I (CEIR1) courseware in particular and to evaluate the effectiveness of

computer assisted reading course in college English in general by a group of undergraduate Chinese students at the Logistics and Engineering College of the People's Liberation Army (PLA). The study included measurement of students' computer experiences, their reactions to CAI application and expectations of the technology's potential by using questionnaires. It was designed in such way that it might contribute to two questions about computer-assisted instruction in reading. First, it was hoped that the results would provide evidence and pedagogical support for computer-assisted reading instruction. Second, it would facilitate the discussion of the key factors involved for a successful application of CAI in Chinese College English reading. It was hypothesized that college students would achieve and enjoy more in CAI reading. It was further supposed that CAI in reading would have greater potentials in China. We hoped that the findings of this report would be of interest to language teachers and course designers.

A CASE-STUDY OF CAI APPLICATION

Subjects

The case study was conducted in the Logistics and Engineering College (LEC) during the fall 2000 semester with students from two departments. Altogether, there were 120 first-year students (around 20% of whom were female students). They received both the traditional college English intensive reading in the classroom and the Computer-assisted intensive reading courseware in the computer lab alternatively. It was hypothesized that college students would be more motivated and interested in the computer-assisted approach.

Description of the Courseware

Selection of Courseware

Although a reasonable number of instructional software programs were

commercially available, we followed certain criteria in the selection process by searching the literature for evaluative reviews of reading programs. The criteria were: (1) the instructional program should be easy to use, either menu driven or point & click; (2) it should be easy to enter and exit, with clear, concise instructions and help facilities, so students can get on with the language learning task rather than wasting valuable CAI lesson time operating the program; (3) it should be interactive so that the students can progress at their own paces; (4) it should also provide clear directions on how to navigate through the various aspects of the program. A variety of demonstration copies were examined and what was finally selected is CEIR1 courseware. The courseware was technically supported by the Foreign Language Department of South China University of Technology (SCUT), (<http://www.scut.edu.cn/cwis/scut/setup/foreign/fldhp.htm>).

Contents of the Courseware

CEIR1 courseware was based on the contents of College English Intensive Reading (book one, edited by the Shanghai Foreign Language Education Press) and available on CD-ROM. The courseware had three main parts: Presentation, Consolidation, and Progress Check.

This courseware differed from many other commercially available CD-ROMs for language teaching in that it aimed at college English learners, based its design on the intensive reading textbook, and combined CAI and traditional college English teaching. It utilized multimedia capabilities to combine text, sound, animation, video, and graphics. It switched between entertainment and serious work, and provided a meaningful context for the language knowledge learnt. The content for the courseware was designed to practice a variety of instructions and exercises seen in class.

Evaluation of the Courseware

The typical characteristics of CEIR1 were summarized as follows:

Interactivity

The courseware creates a situation in which learners can interact with the learning materials and reference materials by way of hypertexts. Hypertext technology enables a quicker, more convenient access to target areas and also enables the courseware to be simple, attractive and user-friendly. The most important aspect in hypertext is the multiple scanning. That means that the different text resources are all linked together and learners can navigate their own path simply by pointing and clicking a mouse. The image of a student working at a computer conjuring up material from a variety of sources and media at the touch of a finger is a powerful one. This control allows learners as individuals to approach the material with their own agendas and their own actions. Learners using the courseware are not passive; they need to think about the language, engage with it and to respond to it.

Individual Learner Differences

Language learners are very different in terms of their needs, interests, strengths and weaknesses, motivations, learning styles etc. This courseware can be used as a flexible self-study resource and is useful in accommodating the learner differences. Learners can focus on language areas in which they decide they need help and ignore others. They can take as much time as they like and exploit whichever of the variety of media on offer that they prefer to learn from. They can work at whatever pace they choose. Each reader works individually without the pressure of finishing classroom tasks together with others. Using the hypertext, students have great control over their learning, since they can not only go at their own pace but also on their own individual path, going forward and backwards to different parts of the program, honing in on particular aspects and skipping other aspects altogether. Besides, this courseware can be used in a variety of ways within different learning situations either as a self-access resource or as a supplement to the class-based instruction.

Non-threatening, Non-judgmental

Work completed in the computer environment is essentially a private affair. Usually only the learner knows any errors. There is no public loss of face at errors on what teachers and classmates may presume to be elementary language knowledge or skills and assumed as already having been mastered. The non-public domain of this form of learning may free learners to explore areas that they may not like to admit failing to having understood and thus in a class situation saving the time of teachers and other learners. This may well serve to lower affective filters.

Motivation and Interest

The multimedia is enclosed in the courseware, such as the picture, sound, and animation. There is evidence to show that the use of multimedia is seen as more motivating and attractive than the traditional books and tapes (Brett, 1997). This may be due to the novelty factor or to the very appealing features of multimedia.

Repeatability

Unlike human teachers, the computer is a tireless workhorse; all descriptions in the courseware can be run endlessly. The interactive nature of multimedia software and its ability to provide tasks receive learner reactions to those tasks and provide an evaluation to those responses can all be endlessly invoked.

Procedure

The first-year college students, according to the teaching program, should have 36-hour (18 weeks) intensive reading instruction to learn 9 texts in one semester. In this study, the CAI was made a required component of the course for the subject students, that is, the intensive reading lessons were conducted alternatively in classroom by teacher and in the lab by courseware (with the teacher's presence). Typically, students would spend at least 2

hours in two weeks with their regular classroom instructor in computer-equipped labs studying the according lesson in CEIR1 in any way they want to. Besides this, all students were allowed to come to the computer laboratory as often as they wish in their own time to use the courseware. At the end of the semester, the students were given a questionnaire to complete. An important consideration in this study was that the courseware was evaluated in the context of the students' regular teaching program and environment. While this limited the research design and the generalizability of the findings to a great extent, it was felt that the information gathered observationally in an authentic teaching environment would be more useful than what might result from an artificially controlled experiment.

Data Collection

Reaction to the CAI component of the college English reading course were sought through a courseware evaluation questionnaire administered towards the end of the course. The questionnaire was designed to find out how students reacted to the courseware generally and to certain specific aspects of CAI in reading. Efforts were made to make the questionnaire more valid and reliable (The detailed contents of the items are in Appendix).

RESULTS

Opinions were sought through 5-point scale, open-ended and closed-ended questions on a wide range of topics ranging from their perceived degrees of difficulty and usefulness to the further application and implication of CAI in the college reading courses etc. Comments at the end of the questionnaire were mostly very positive as the following representative samples showed:

Overall a most helpful course actually inspired me to learn more.
Great fun. I looked forward to coming to CAI classes and loved to be able to test myself.

Overall, CEIR1 has been fun and informative.
I am actually starting to look forward to CAI classes.

Overall, the feedback received was favorable that the students valued computer-assisted reading activities. And the results were generally satisfying. The following section described the responses of students to specific items mentioned in the questionnaire (See Appendix).

Part I: The Computer Knowledge

Subjects were asked to rate their computer knowledge in part I on a five point scale. The college students had adequate basic knowledge about computer usage with almost 67% of students giving it a rating of 4 or higher. As the data showed, the college students had a good basic knowledge of computers and how they worked. Most of the college students were familiar with the computers' word processing and typing, and had great interest in the usage of computers. But they were not familiar with the many application packages and reading courseware suitable for them to use in classroom. And the result was not unexpected in modern China, since some basic computer courses were compulsory in most colleges. There is reason to say that college students' good mastery of computer and great interests in using it have made the application of CAI possible.

Part II: Motivation, Interest and Achievement

Generally speaking, of the students who used the courseware, 70% indicated that they liked what they had used. Furthermore, about 80% of the respondents stated the belief that the courseware was useful in helping them with their studies. As to the text comprehension, while it was impossible to draw conclusions that might be generalized from these results in the absence of pre- and post- tests, students rated their text comprehension in percentage terms and the data roughly suggested that students thought they comprehended 15 more percent by the CAI way than the traditional way. The

possible reasons from this greater achievement might be that CAI provided gains in efficiency and the provision of simultaneous, on-going feedback seemed to support learners' interpretations of messages. A survey of the students' attitude towards CAI at the end of the semester showed results in Table 1.

TABLE 1

After 18 weeks of both teacher-taught instruction and CAI, do you prefer ...	Students
1. totally teacher-taught classes and no CAI at all.	6.7%
2. a mixture of teacher-taught classes and CAI	81.6%
3. no teacher-taught classes but just CAI	11.7%

Further, for students who preferred a mixture of teacher-taught classes and CAI, the preferred proportion of teacher-taught classes to CAI was as shown in Table 2.

TABLE 2

The amount of course-time students want to spend in ...	Students
1. Teacher-led classes	30.58%
2. CAI	69.42%

The open-ended responses from the students in Part II also produced many positive comments about the CAI reading. Students' responses in the open-ended questionnaire included the following observations:

- They enjoy it;
- They believe the instructions with sound, pictures and a lot of background knowledge are interesting;
- They will like to try this kind of thing again if possible;
- It is as natural as reading a book;
- Using the computer helps students to concentrate more;
- More animation, video, picture or music will make it more interesting.

And those positive comments here confirmed that the activity was generally welcome.

Part III: Expectation and Implication

In this part, the students were allowed to express their opinions more freely in either English or Chinese on the computer-assisted instruction. Students' responses in item 10 (about the advantage and disadvantage of the CAI) were interpreted as follows:

They believe the CAI to be effective and interactive;
The computer makes reading more interesting;
It is extremely helpful to be able to review and practice repeatedly;
It is a good way of improving reading skills.
Using the computer helps students to concentrate more;
It is good for self-study;
The screen is tiring for the eyes; (A significant number of students agree that traditional reading materials are preferable. Since, on the whole, students enjoy using the computer, this seems somewhat a contradiction. However, most computer users will agree that reading on a computer is tiring for the eyes and not as pleasant as reading from paper.)
Students can go at their own pace, without feeling that they are falling behind others in the same class;
Students' needs are met in a custom-designed course;
Students can try exercises above their level if they feel they can do them;
Students are able to come every day of the week if they wish to do so.

Answering item 11, the students hoped and believed that their extensive reading and fast reading classes should have CAI components to improve their reading abilities. It was interesting, as an aside, that despite the group of students being relatively unfamiliar to the reading courseware available, they still had fairly high expectations of what the computer might offer them and they seemed to have full confidence in the efficiency of CAI. On the basis of the data gathered in the questionnaire, the students were almost unanimous in

their belief that the Internet was what they were most interested in and must be the most powerful tools for language learning, especially English reading. They were so eager to learn more about Internet and long for the opportunities to make full use of this powerful language-learning tool.

DISCUSSION

The questionnaire probes general reactions to the use of CAI in reading, attitudes to its learning efficiency and attitudes to CAI as a study tool. The results showed strongly favorable attitudes to CAI. The learners believed they could learn effectively from CAI and that it delivered a high quality independent learning experience. Most college students were in favor of using computers. They felt comfortable with computers and were very receptive to any learning activities that involve the computer. Increased motivation leads to increased language use, which in turn leads to improved proficiency. Implications are that CAI has a beneficial role to play in the curriculum and may have potential to facilitate effective language learning. It may motivate, have special value for learners regarding themselves as less able, be useful for self-access, supersede other language learning technology and warrant further courseware development.

It is fair to say that the use of CAI in reading by way of the exploratory intensive reading courseware is, according to these indicators, indicated, and that the hypothesis about the efficiency of CAI and its feasibility in Chinese college reading courses was confirmed. In the context of the present study, it showed that the computer would produce greater achievement and better motivation. This would be achieved through a process of exploration that fostered a spirit of individual endeavor and learner-autonomy. The final result showed the great increase in the motivation for reading among college students, development of wider knowledge and higher expectation for the further application of other reading courses in college English. The conclusion is that the CAI should be incorporated into classroom. The students prefer using CAI as a part of a learning environment that includes a

teacher. This questionnaire showed that on the whole students were very enthusiastic about using this multimedia program as a resource for college English reading. Besides, the final result has also shown more instructive implications for the further development of CAI as follows:

Teachers' Role in CAI

In the questionnaire, respondents were asked to indicate their preferred problem-solving strategy by completing the following phrase: "When I do not understand the computer activity and instruction contents..." A summary of the responses received to this survey item was given in Table 3.

TABLE 3
Problem Solving Strategies at the Computer

When I do not understand the computer activity and instruction contents...	Frequency
the computer is the only thing I need	6
my friend helps me	10
My teacher helps me	104

The results in Table 3 clearly showed that it was the teacher, who would be referred to when the "exploratory" computer activities were not understood. The presence of technology cannot stand alone as it invariably falls danger to being viewed with suspicion if its purpose is not made explicit. What is required then, (and this has been known by CAI practitioners for a long time now), is pedagogic support. This means, in the first place, that the teacher can make the difference between success and failure especially in CALL requiring exploration (Jones, 1986). Given this, the teacher's responsibility is to recognize and then utilize the power of the computer to assist teaching and this takes us beyond simply supplying the answers to exercises from the sidelines. Once the computer is successfully integrated into classroom practice, the CAI-aware teacher is empowered to assist language learning from a student-centered perspective. The methodology at the heart of this

strategy is to instruct students to make informed choices about how to learn at the computer. Anything short of this is likely to reduce the effectiveness of CAI. So we can see that the teachers' presence and function in the application of CAI reading is essential and imperial. Also when asked if teachers would be replaced by the computers with the development of the computer technology, students strongly believed in that the program should be used in conjunction with good classroom teaching and that a teacher should be available to answer questions and give guidance during computer sessions.

Just as Kulik J. A. and Bangert-Drowns R. L. (1983-1984) pointed out, the teacher remains an essential element in the students' experience. Several researchers have found that CAI is considered more effective as a supplement to, rather than a replacement for, teacher-based instruction, especially for younger learners. Today CAI is viewed as an enhancement of, rather than a substitute for, traditional or alternative methods of instruction.

Individualization: An Essential Part in CAI

The very positive result of questionnaire should be seen in this context that the students' comments appeared to suggest that the opportunity to learn and practice computer-assisted reading was greatly appreciated. Students particularly enjoyed the instant feedback, the non-threatening environment and the self-access in the CAI. In the questionnaire, many commented on the fact that one of the benefits of using a computer was the possibility of working at one's own pace and in one's own time. And It is assumed here that the most typical and useful area where CAI might offer potential should lay in the individualized instruction, according to the reality of Chinese college, i.e., its population factor, students' various learning styles in reading.

Internet: The Trend of CAI

Not only from our daily communications with the college students, but also from the result of the questionnaire, the students' passion for Internet

seemed quite amazing. Muehleisen (1997) outlined this quite clearly in stating that students are interested in joining the Internet revolution for many reasons. On a very basic level, students see the Internet as trendy and want to be a part of it; the practical aspects that will be useful in life also draw others. Whatever reasons are at the root of this motivation, it is clear that a great many students are excited about it.

It is suggested that Internet use should be incorporated into college English curriculum for students. One supportive and potentially motivating outcome of Internet use is that students begin to realize that not only is the world connected together through the use of this technology, but as the majority of information on the Internet is in English, they begin to appreciate in more concrete terms the usefulness of acquiring English skills. Thus, English is taken to a new level, no longer an interesting curiosity or hobby, it now takes on the characteristic of a vital and important skill that will be useful later in life (Muehleisen, 1997). Internet use also offers a more practical real life language experience, providing students with functional communicative experiences that serve the learners needs as well as motivate them to use English in their daily lives.

From a teacher's standpoint, involving students in Internet usage also promotes a variety of activities and learning outcomes. First of all, as the Internet is primarily text driven, electronic discourse that students will participate in tend to be lexically and syntactically more complex than oral discourse (Warschauer & Whittaker, 1997). A positive outcome is the increased reading and writing skills that are developed as a result of using the Internet effectively. Singhal (1997) further stated, "Although electronic, the Internet is entirely related to literacy. People still interact with it through reading and writing."

Since there are many odd sites and bizarre bits of information on the web, this may well require some active teacher participation to keep students on the right track. As many previous researches have showed (Warschauer & Whittaker, 1997), students do not always have the necessary computer skills to manage the use of the Internet. Indeed, it was found in the questionnaire

that few students could surf the net freely. Thus, first and foremost, the instructor must be willing to spend a fair amount of time helping students acquire the basic skills that will make the Internet a fun and rewarding part of their language education experience, particularly at the early stages. If this is not addressed properly, students will be quickly overwhelmed and frustrated by the complexity of Internet usage on the language learning. This of course has required the teachers to learn about Internet.

LIMITATIONS OF THIS STUDY

Because the time was quite limited in doing the research, there existed a lot of limitations in it. The number of students involved in the study was relatively small and they were not representative enough. The program used in the study was limited in terms of the presentation of information. No test of reading skills or language proficiency was undertaken to check the students' improvement in their reading abilities. Although their progress and performance were checked carefully during the computer work, some changes in the students' behavior might have been missed. Given more time in the future, these problems could be modified and the study results more complete and convincing.

CONCLUSION AND IMPLICATION

It seems that computer-assisted reading activities have the potential to actively engage students in learning because of their capabilities to allow repeated practice with instant feedback, to allow students to work at their own pace, to provide them with interactive reading tasks and to help them perceive the value of success. This particular group of students felt comfortable and enjoyed participating in the computer-assisted reading activities. Although the CALL program used in the study required some improvements for future

use, the students used it actively and tended to demonstrate a positive attitude toward CAI while exploring it and afterwards.

There are several implications of this study. First, it will be worthwhile for teachers to develop their own CAI materials in their teaching situations. They can create CAI materials, which meet both their own needs, and students' needs and integrate these into the existing curriculum. It is clear that the development of CAI software applications requires time, programming skills and tools, but it can make a large contribution to the understanding of the nature of CAI. Second, it will appear that the evaluation of a particular program should involve students as users. Students' comments, which can be collected from surveys or interviews, are necessary in revising any kind of CAI materials because the students are the learners who learn languages assisted by the computer and who know how the programs affect their learning. Third, it will appear that even a small study like this provides CAI researchers and practitioners with useful classroom data. To reinforce the links between CAI and the language classroom, researchers need to conduct more CAI research in the classroom. That is, more data on how students make use of CAI lessons needs to be collected in the classroom. In doing so, researchers should look not only at new discoveries but also at how a particular program helps students with their specific learning task. Finally, further research is necessary on what students do with CAI. Describing what teachers and students do and say in CAI environments will help establish the value of computer programs in the students' engagement with language learning activities (Chapelle, Jamieson & Park, 1996). To strengthen our understanding of CAI, students' interactions need to be described and analyzed through empirical research on CAI. In addition, more research is required to investigate the specific ways that CAI materials can improve learning in a language course.

THE AUTHOR

Shen Shu obtained her master degree of linguistics with more specific research field in Computer Assisted Language Teaching. She has done research on how to improve college English teaching aided by computers especially on the basis of networks.

REFERENCES

- Brett, P. (1997). Do-It-Yourself multimedia. *Recall Journal*, 9(1), 34-42.
- Chapelle, C. A., Jamieson, J., & Park, Y. (1996). Second language classroom research traditions: How does CALL fit? In M. C. Pennington (Ed.), *The power of CALL* (pp. 33-53). Houston, TX: Athelstan.
- Jones, C. (1986). What you do with it: The importance of methodology. *CALL System*, 14(2), 171-178.
- Kulik, J. A., & Bangert-Drowns, R. L. (1983-1984). Effectiveness of technology in precollege mathematics and science teaching. *Journal of Educational Technology Systems*, 12, 137-158.
- Muehleisen. (1997). Using the internet in college English classes. *The Internet TESL Journal*, 3(6), 1-3.
- Singhal, M. (1997). The internet and foreign language education: Benefits and challenges. *The Internet TESL Journal*, 3(6), 8-9.
- Warschauer, M., & Whittaker, P. (1997). The internet for English teaching: Guidelines for teachers. *TESL Reporter*, 30(1), 27-33.

APPENDIX

Questionnaire for Students

College English Intensive Reading I Courseware Evaluation

DATE: DD__MM__YY__

Part I: Computer Knowledge (5-Point Blanket: Strongly Agree to Strongly Disagree)

Directions: Please mark ONE "X" on each scale to show how you rate the Following

concepts.

How much have you used a computer?

often ____: ____: ____: ____: ____ never

How are you good at typing?

good ____: ____: ____: ____: ____ bad

How can you deal with mouse well?

well ____: ____: ____: ____: ____ badly

Do you have much basic computer knowledge?

much ____: ____: ____: ____: ____ no

How do you like computers?

much ____: ____: ____: ____: ____ no

Part II: Attitudes towards Computer Assisted Language Learning in College English Intensive Reading I

Directions: Read the following sentences and indicate your opinion with a tick in the appropriate box. You can choose more than one answer for each question.

1. The computer programs:
 - are useful for my faculty.
 - are interesting.
 - help me understand the College English Intensive Reading I textbooks.
 - help me learn by myself.

2. Using the computer:
 - helps me learn English faster.
 - helps me understand the English I do not know.
 - makes learning English interesting.

3. I like:
 - to choose my own computer programs.
 - my teacher tell me which programs to use.
 - repeating computer exercises.
 - writing English on the computer.
 - learning English on the computer.
 - writing English on the paper

4. When I do not understand the computer activity and instruction contents:
 - the computer is the only thing I need.

Chinese College Students' Reaction to CAI: A Case Study

my friends help me.
my teacher helps me.

5. I prefer to work on the computer:

on my own.
in pairs.
in a group.
with my teacher.

6. The computer sessions are:

too long.
too short.
about right.

7. I know how to use the computer to help me learn English.

Yes
No
I need some instructions

8. I wish:

for more time to practice with CAI
to continue the CAI next semester
for more time for the teacher-taught instruction

9. After 18 weeks of both teacher-taught instruction and CAI, do you prefer:

totally teacher-taught classes and no CAI at all.
a mixture of teacher-taught classes and CAI
no teacher-taught classes but just CAI

*If you choose "a mixture of teacher-taught classes and CAI", the preferred proportion of teacher-taught classes to CAI is:

Teacher-led classes (____%)
CAI (____%)

PART III: Further Comments

Directions: Please use the space below to write any other comments you wish to make about using the computer to learn English in the College English. You can

write in English or Chinese

10. What are the positive and negative points of CAI in reading?
11. Do you think that CAI is a trend in college English teaching? Why?
12. What would you like most to do by using the computers in English learning?