The Computer-Based Reading Program for Literacy Enrichment*

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Abstract

It is generally accepted that computers can be used effectively to enhance language skills in either spoken or written languages. There are numerous research reports in the use of computers to assist language learning and instruction, which confirm the multiple roles of computers in language teaching and learning. However, there are pros and cons on the computer-based reading program to enhance literacy skills in the classroom. Those who are on the positive side believe that the computer is the effective tool to bring learners to actively participate in the learning process since the computer can activate learners to interact with the text lessons as well as among learners themselves. However, for those who are skeptic of the role of the computer in language teaching and learning argue that the computer cannot replace the teacher who are more actively feasible to monitor the learner's activities than the computer itself. In case of connecting computers to the World Wide Web (WWW) although the computer has the potential to become a research tool of communication---a conduit for information exchange, connection and interaction, the computer's importance is reduced, and it merely provides an interface or access to a large number of other computers, and the information stored on those computers, or the people using them (Willetts, 1995). Interactivity is possible in the form of "electronic communication on a one-to-one, a one-to-many, and a many-to-many basis" (Johnson, 1995). This paper will explore whether or not the computer-based reading program can enhance literacy skills of learners in the use of the English language to access knowledge and information from the many sources available from the CD-ROMs, Internet and World Wide Web.

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Introduction

The use of computer in education has rapidly growing in recent years. Many schools, colleges and universities throughout the world are using computers in a variety of ways such as word processing, a tool for information sharing in a local area network (LAN) and most recently in making connections to the Internet which is the world-wide computer connections. Much have been discussing on the use of computers in assisting teaching and learning for specific purposes such as to develop language skills of students in a classroom. But before the computer has come into its place in the classroom, it has been evolved through a number of years. Simic (1996) recounts the involvement of computer use in education in numerous phases. The first phase was on the need for "computer literacy.", which is generally defined as computer awareness and computer programming. The second phase put the emphasis on using the computer as a tool and as a method for teaching problem solving. Most recently, as counting as the third phase, it addresses issues related to computer applications in support of the curriculum. This paper will explore the roles of computers in assisting language teaching and learning. More specifically, it will look into the computer-based reading program to assist literacy enrichment.

The Role of the Computer in Language Learning and Teaching

Computers have been used to assist instruction and learning in a variety of ways. We have heard and seen many acronyms of this new technology in education such as CAI, CALL, CALLT, CAT, CBI, CEI, CMI, and the newest ones, IBT, IBI, WBI, WBL, WBT, WWWBT, WWWBI, etc. It is helpful to know the full term of these acronyms:

CAI = Computer-Assisted Instruction

CALL = Computer-Assisted Language Learning

CALLT = Computer-Assisted Language Learning and Testing

CAT = Computer-Assisted Testing

CBI = Computer-Based Instruction

CEI = Computer-Enriched Instruction

CMI = Computer-Managed Instruction

IBT = Internet-Based Instruction

IBI = Internet-Based Instruction

WBI = Web-Based Instruction

WBL = Web-Based Learning

WBT = Web-Based Training

WWWBT = World Wide Web-Based Training

WWWBI = World Wide Web-Based Instruction

It is helpful also to know more of these acronyms but it will be a lengthy paper which is not the intention at this time. However, we can envision the rapid developmental roles of computers in education. CAI seems to be fading out now since the Internet and World Wide Web have moved in to replace it. Nevertheless, while so many educators and

schools are lagging behind in a full installment of CAI in the curriculm there are still a niche market of CAI in education at present.

Many research studies such as Reiking's (1988) indicate clearly that computer instruction is effective for a wide variety of reading skill and concept areas. Gore, Morrison, Maas and Anderson (1989) in their studies of teaching reading skills to the young child using microcomputer-assisted instruction found the CAI program was effective in developing basic reading skills as well as computer literacy skills. The largest research report ever made on computer-based instruction is Kulik and Kulik's (1987). The study reports results of 199 studies of computer-based instruction at the elementary, secondary, university and adult education levels in the US. It was found that students made favorable achievements on standardized tests, learning time, attitude toward instruction and toward computers, while attitude toward subject matter was unaffected.

Other research studies in developing reading skills with computers have also proven effective results in teaching reading skills. Kauchak and Eggen (1993) report that in one program of Golden, Gersten and Woodward (1990), computers were used to help middle school students make inference from text. Students were provided with individual practice identifying relevant from irrelevant inferences. Students trained on this program made both short and long-term gains on this skill and had positive attitudes toward the immediate feedback provided.

Most often computers are used in a direct, one-to-one approach, that is, one person working at one machine. More opportunities than this one-dimensional approach are explained below (Ray and Warden, 1995)

1. Enhancing existing materials and approaches: word processing software can be used to generate attractive and accessible professional-quality lecture materials, such as overhead transparencies and slides :

2. Using existing software : a more recent trend that has made another crop of courseware more widely accessible is the bundling of software with textbooks :

3. Adapting existing software and videodiscs : for examples Hyper Card have been used to create stacks that provide instructional context for specific video images :

4. Creating original courseware : Because of the ease of use of Hyper Card and other authoring programs, it is a short step from adapting materials to creating your own.

The level of popularity of computer-based instruction in reading may vary, but few will dispute the fact that computers have won a permanent place in most classrooms (Simic, 1996). The most common concerns of educators now have to do with the effectiveness of computer-based education, and with the appropriateness of the many possible roles computer can play in language instruction. Moreover, the emphasis should not be on using

computers to increase reading and writing achievement, but rather on whether teachers use computers for meaningful reading and writing instruction, or are locked into computer-based drill and practice software.

Despite the effectiveness of using computers to assist reading instruction, there are some arguments on the real role of computers in connection with the World Wide Web (WWW). When connected to the WWW, the computer has the potential to become a research tool and communication device-a conduit for information exchange, connection and interaction. In this model the computer's importance is reduced. It merely provides an interface for access to a large number of other computers, and the information stored on those computers, or the people using them (in the case of Electronic Mail, MOOs, MUDs and "Chat" sites). Interactivity is possible in the form of "electronic communication on a one-to-one, a one-to-many, and a many-to-many basis" (Johnson, 1995).

The Use of Computer-Assisted Instruction as a Teaching Aid

There are two studies to be reported here. The first one was conducted by Wanakarn (2000), another was Piromruen's (2000).

CD-ROM as a Teaching Aid in Teaching English Courses

The first study used CD-ROM as a teaching aid in English III and IV courses for second year students of the Faculty of Arts at Silpakorn University, Thailand. The purpose of this research was to study the achievements and attitudes of tertiary students who learned by the use of computer-assisted instruction.

The study emphasized the efficiency of computer-assisted instruction in the following areas:

1. Basic reading skills : vocabulary recognition, vocabulary in context, reference and text structure.

2. Achievements in learning the lessons from computer-assisted instruction.

3. Students' attitudes towards learning by using computer-assisted instruction.

4. Reading comprehension using computer-assisted instruction.

The methods employed for data collection consisted of : (1) a reading skills test (2) two CD-ROM achievement tests (3) a questionnaire (4) two reading comprehension tests.

The sample group understudy consisted of 151 second year students from the Faculty of Arts, Silpakorn University, who studied 412 150 English III and 412 151 English IV in the academic year 1998 by using computer-assisted instruction in the form of CD-ROM. Basic reading skills: vocabulary recognition, vocabulary in context, reference and text structure were tested before and after the study. Students' achievements in learning CD-ROM lessons and reading comprehension were tested at the end of each course. Moreover, students' attitudes

towards using computer-assisted instruction were surveyed after the study.

Results were as follows:

1. Basic reading skills: vocabulary recognition, vocabulary in context, reference and text structure, of the sample group before and after the study were significantly different. Students gained a higher mean in every reading skill.

2. Achievements in learning CD-ROM lessons were significantly different. Students gained a higher mean after the study.

3. Students had a positive attitude towards learning by using computer-assisted instruction.

4. Reading comprehension of the sample group was significantly different. Students gained a higher mean after the study.

CD-ROM as a Supplement to Reading Lessons

The second study was conducted by Piromruen (2000). It was conducted during the first semester of the academic year 2000. The purpose of this study was to investigate the effectiveness of using CD-ROM as a supplement to reading lessons for literacy enrichment.

Fifty-two second year university students participated in this study. They were enrolled in a general education course, English 331: Technical English and Report Writing, offered for a bachelor's degree program English for Business Communication, Engineering and Communication Arts.

Students were given two CD-ROMs to read as the supplement to the reading and writing lessons. The first CD-ROM is the story of Mountain Crossing by a group of young boys, the second CD-ROM contains the story of James Makes Muffins. Each story is divided into three level of difficulty: Orange: Beginning, Purple : Intermediate and Blue: Advanced. At each reading level, five activities are provided with four worksheets for students. The work-sheet for each level contains the following exercises :

A. Comprehension Questions. Students answer the questions by writing in full sentences.

B. Learn some words: Students read the words given in the worksheet, say the words then write each word in a sentence.

C. Word study: Work with words, a) Homonyms, b) Word Endings, c) Blends write words that start with consonant clusters.

D. Writing a personal story such as spending holidays or outing the student had. Students are required the read what they have written. Check the punctuation and spelling.

A questionnaire was also given to each student after they completed the CD-ROM lessons. The purpose of the questionnaire was to get feedbacks from students on their attitudes towards the CD-ROM lessons. Forty-three questionnaires out of 52 (83%) were returned. Results of the students' responses are reported below.

Results of the study were as follows:

1. Forty-four students read the story of Mountain Crossing. Thirty students completed the Orange Worksheet, thirty-two students could completed the Purple Worksheet, and eight students were able to complete the Blue Worksheet.

2. Forty-five students read the story of James Makes Muffins. Thirty-nine students were able to complete the Orange, Purple Worksheet, and eleven students completed the Blue Worksheet.

3. Students showed progress in their reading and writing exercises. The could read and write long sentences after completing the orange, purple and blue levels.

4. Students were eager to learn when they were given a reading lesson from a computer CD-ROM. Collaborative learning could be seen when students read their CD-ROM story together.

5. The computer could facilitate the students' desire to search for more information with regards their reading lesson such as to look for meaning of unfamiliar words by using the word list provided in the computer library.

6. Students' responses from the questionnaire revealed favorable results:

6.1 The story which students liked most was Mountain Crossing (53%) while the story on James Makes Muffins were moderately prepared (49%).

6.2 Most of students (93%) confirmed their benefits in reading the story from the CD-ROMs.

6.3 Most of students found that they had learned many new vocabularies from reading the stories.

6.4 Most of students preferred reading a CD-ROM with the computer. They found that it was a modern way of learning, more interesting than the simple way their teacher used to teach. Moreover, it was easy to read from the CD-ROMs.

6.5 All students reported that they could write more stories after reading from the computer and CD-ROM lessons.

7. However, this study needs more investigations on the students' performance on their reading and writing discourse.

Guidelines for Computer and Reading

Based on the studies reported earlier, some guidelines for computers instruction in reading should

1) focus on meaning and stress reading comprehension,

2) foster active involvement and stimulate thinking,

3) support and extend students' knowledge of text structures,

4) make use of content from a wide range of subject areas,

5) link reading and writing.

Learners should have opportunities to create text with the computer for sharing and using by others. When students enter

information into the computer for someone else to retrieve and use, they must compose with the reader in mind. This frequently involves making explicit use of what they know about what makes a text comprehensible. Revision and proofreading strategies clearly involve the combined application or reading and writing skills (Simic. 1996)

Summary and Conclusions

Computers have played a greater role in language teaching and learning. Numerous computer-assisted instructions were used in schools and many reported effective results. The role of computers in education has moved from as tutor to as a tool whereby learners can use computers to facilitate their learning. A great number of research studies reported that CAI program was effective in developing basic reading skills as well as computer literacy skills, and students made favorable achievements on standardized tests, learning time, attitude toward instruction and toward computers. Reading instruction using other devices such as CD-ROMs could increase the students' vocabulary and enhance their reading comprehension skills. Another aspects of students' performance when they engaged in the computer-based reading program are their positive attitudes towards learning and the computers. They found that computers can assist them finding an easy way of learning and it was more interesting than the ways their teacher used to teach. Their literacy skills could be enriched when they were exposed to effective computer instruction in reading and writing. However, on the opposite side teachers should be aware of using computers for meaningful reading and writing instruction, rather than to be locked into computer-based drills and practice software. Nevertheless, in the new millennium, the computer-based instruction has moved into the Internet and World Wide Web. This new movement could facilitate the learners' access to a vast resource of information. While students could enjoy reading online from the WWW, what should the teachers do in order to be up front in their professional field. ❑

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