AN INVESTIGATION OF THE CURRENT STATUS OF AND PROBLEMS IN IMPLEMENTING COMPUTER-ASSISTED LANGUAGE LEARNING IN STATE UNIVERSITIES IN THAILAND AND RECOMMENDATIONS FOR FUTURE DEVELOPMENT

YAOWALAK POOLTHONG

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS
(LINGUISTICS)

IN

FACULTY OF GRADUATE STUDIES

MAHIDOL UNIVERSITY

1992

Thesis

entitled

AN INVESTIGATION OF THE CURRENT STATUS OF AND PROBLEMS IN IMPLEMENTING COMPUTER-ASSISTED LANGUAGE LEARNING IN STATE UNIVERSITIES IN THAILAND AND RECOMMENDATIONS FOR FUTURE DEVELOPMENT

Yaowalak Poolthong

Candidate

Graham K. Rogers, M.A.

Major Advisor

Anchalee Pongpun, M.A.

Co-advisor

Niramol Pachinburavan, Ph.D.

Co-advisor

Montree Chulasamaya, M.D., Ph.D.

Dean

Faculty of Graduate Studies

Dhanan Chantrupanth, M.A.

Chairman

Master of Arts Program in Linguistics

Faculty of Science

Thesis

entitled

AN INVESTIGATION OF THE CURRENT STATUS OF AND PROBLEMS IN IMPLEMENTING COMPUTER-ASSISTED LANGUAGE LEARNING IN STATE UNIVERSITIES IN THAILAND AND RECOMMENDATIONS FOR FUTURE DEVELOPMENT

was submitted to the Faculty of Graduate Studies, Mahidol University

for the degree of Master of Arts (Linguistics)

on

November 11, 1992

Yaowalak Poolthong

Candidate

Graham K. Rogers, M.A.

Chairman

Anchalee Pongpun, M.A.

Member

Niramol Pachinburavan, Ph.D.

Member

Montree Chulasamaya, M.D., Ph.D.

Dean

Faculty of Graduate Studies

Pornchai Matangkasombut, Ph.D.

Dean

Faculty of Science

BIOGRAPHY

NAME Mrs. Yaowalak Poolthong

DATE OF BIRTH 7 February B.E. 2504 (1961)

PLACE OF BIRTH Samutsakorn, Thailand

INSTITUTIONS ATTENDED

Chulalongkorn University, 1979-1982 :

Bachelor of Arts (English)

Mahidol University, 1990-1992 :

Master of Arts (Linguistics)

ACKNOWLEDGEMENT

I would like to express my sincere gratitude and appreciation to my advisor, Mr. Graham K. Rogers, for his constructive advice throughout the preparation of this study and for his tireless persistence in reading through the drafts. I would also like to extend this gratitude and appreciation to my co-advisors, Dr.Niramol Pachinburavan for her valuable suggestions in statistics, and Assistant Professor Anchalee Pongpun for her helpful criticisms and advice.

I am indebted to Mr. Maurice Broughton for his brilliant suggestion for my thesis topic, and to all the heads of English departments and teachers of fourteen state universities for answering my questionnaires.

Also, I offer my sincere thanks to Mahidol University for exempting educational fees during my studies.

Hearty thanks go to all my classmates who together created a very pleasant and enjoyable learning environment that will always be remembered.

Finally, my special appreciation is due to my family, especially my husband who provided me with encouragement and all kinds of support, and patiently waited for the completion of my study.

Yaowalak Poolthong

ชื่อวิทยานิพนธ์ การสำรวจสถานภาพปัจจุบัน อุปสรรค และข้อเสนอแนะในการนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษาอังกฤษในมหาวิทยาลัยของรัฐ

ผู้วิจัย เยาวลักษณ์ พูลทอง

ปริญญา ศิลปศาสตรมหาบัณฑิต (ภาษาศาสตร์)

คณะกรรมการควบคุมวิทยานิพนธ์

Graham K. Rogers M.A.

อัญชลี พงศ์พันธุ์ M.A.

นิรมล ปาจีนบูรวรรณ์ Ph.D.

วันที่สำเร็จการศึกษา 11 พฤศจิกายน พ.ศ.2535

บทคัดย่อ

การวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาสถานภาพปัจจุบัน อุปสรรค และข้อเสนอแนะในการนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษาอังกฤษในมหาวิทยาลัยของรัฐ ตัวอย่างประชากรในการวิจัยคือ หัวหน้าภาควิชาและอาจารย์ผู้สอนภาษาอังกฤษในหน่วยงานที่รับผิดชอบวิชาภาษาอังกฤษพื้นฐานของมหาวิทยาลัยของรัฐจำนวน 14 แห่ง รวม 186 คน เครื่องมือที่ใช้ในการวิจัยเป็นแบบสอบถามส่งทางไปรษณีย์จำนวน 2 ชุดซึ่งมีความตรงตามเนื้อหาเนื่องจากได้ตรวจแก้ตามคำแนะนำของผู้เชี่ยวชาญในสาขานี้และข้อมูลจากการวิจัยนำร่อง ค่าความเชื่อถือได้ของแบบสอบถามได้จากการตรวจสอบความสอดคล้องภายในของแบบสอบถามและจากค่าสถิติของ t-test และสัมประสิทธิ์แอลฟ่า

ผลการวิจัยสรุปได้ว่ามหาวิทยาลัยของรัฐที่ร่วมในการวิจัยครั้งนี้ มีเพียงแห่งเดียวที่นำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษาอังกฤษแล้ว โดยใช้คอมพิวเตอร์ใน 3 รูปแบบกล่าวคือ ใช้เป็นอุปกรณ์ทางการศึกษาชนิดหนึ่งในชั้นเรียนปกติ จัดให้นักศึกษาใช้เพื่อการเรียนรู้ด้วยตนเอง และเพื่อการเรียนซ่อมเสริมสำหรับนักศึกษาที่มีจุดอ่อนเฉพาะเรื่อง อุปสรรคในการนำคอมพิวเตอร์มาประกอบการเรียนการสอนภาษาอังกฤษในมหาวิทยาลัยของรัฐ มีสาเหตุมาจากการที่อาจารย์ผู้สอนภาษาอังกฤษส่วนใหญ่ยังไม่เข้าใจเรื่องคอมพิวเตอร์ช่วยสอนชัดเจนเพียงพอ งบประมาณมีจำกัด ขาดการสนับสนุนจากผู้บริหาร และผู้ตอบแบบสอบถามบางส่วน

เห็นว่าควรรอให้มีการพัฒนาโปรแกรมสอนภาษาให้ดีกว่าปัจจุบันเสียก่อน มหาวิทยาลัยทั้ง 14 แห่งมีโครงการที่จะนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษาอังกฤษในอนาคต แต่มีมหาวิทยาลัยเดียวที่มีแผนขยายงานเรื่องนี้ในช่วงแผนพัฒนาเศรษฐกิจและสังคมแห่งชาติฉบับที่ 7 (พ.ศ.2535-2539) ส่วนมหาวิทยาลัยอื่นอยู่ในระหว่างเตรียมการ ข้อเสนอแนะสำคัญที่ได้จากแบบสอบถามคือ ควรมีการฝึกอบรมเรื่องคอมพิวเตอร์ช่วยสอนภาษาเพื่อให้บุคคลากรมีความเข้าใจเรื่องคอมพิวเตอร์ช่วยสอน แก้ไขและวางแผนเรื่องงบประมาณ คอมพิวเตอร์ช่วยสอนเหมาะสำหรับใช้ในการเรียนรู้ด้วยตนเอง (Self-access study) และการเรียนซ่อมเสริม (Remedial study) และควรมีการร่วมมือกันระหว่างสถาบัน

ข้อเสนอแนะจากผลการวิจัย เพื่อนำไปปฏิบัติในการเตรียมนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษาคือ ควรจัดฝึกอบรมให้บุคคลากรมีความรู้ความเข้าใจในลักษณะของคอมพิวเตอร์ช่วยสอนภาษา รูปแบบและกิจกรรมต่าง ๆ ในการใช้คอมพิวเตอร์ประกอบการสอนภาษา และวิธีดำเนินการ นอกจากนี้ควรได้รับการสนับสนุนจากผู้บริหารทั้งทางด้านงบประมาณ โอกาสในการรับความรู้เพิ่มเติมเรื่องคอมพิวเตอร์ช่วยสอนภาษา และความร่วมมือจากศูนย์คอมพิวเตอร์ของมหาวิทยาลัยในการดำเนินงานเบื้องต้น อีกประการหนึ่งที่สำคัญคือ ควรมีการร่วมมือกันระหว่างมหาวิทยาลัยในการจัดซื้อ ประดิษฐ์ และพัฒนาโปรแกรมคอมพิวเตอร์ช่วยสอนตลอดจนตั้งศูนย์กลางเพื่อเผยแพร่ความรู้ ข่าวสาร และแลกเปลี่ยนประสบการณ์

Thesis Title An Investigation of the Current Status of and Problems in Implementing Computer-Assisted Language Learning in State Universities in Thailand and Recommendations for Future Development

Name Yaowalak Poolthong

Degree Master of Arts (Linguistics)

Thesis Supervisory Committee

Graham K. Rogers, M.A.

Anchalee Pongpun, M.A.

Niramol Pachinburavan, Ph.D.

Date of Graduation 11 November B.E. 2535 (1992)

ABSTRACT

The intention of this study was to investigate the status of and problems in implementing Computer-Assisted Language Learning (CALL) in state universities in Thailand and to make recommendations for future development. The subjects of the study were heads of English departments and English language teachers in offices responsible for basic English courses in fourteen state universities. The total number of subjects was 186. The instruments employed were two sets of mailed questionnaires. The questionnaires were assumed to have content validity after being criticized by authorities and revised according to their comments and suggestions coupled with the implications of the pilot study. The reliability of the study was confirmed by internal consistency checking of answers of the questionnaires, and by means of statistics: t-test and Alpha coefficient.

The findings of the present study can be summarized as follows:

Among those participating in this study, only one university had already implemented CALL. The computer was used in three types of activities: used as an educational tool in English classes; provided for students' self-access study; and provided for students' remedial study.

That teachers did not have a clear understanding about the nature of CALL caused problems in its implementation. There were also problems of inadequate budgets and a need for support from administrators. In addition, many mentioned a preference to wait for better CALL programs.

All fourteen universities indicated that they had a future plan for CALL implementation. However, only the university that already used it had an expansion plan for CALL during the period of the 7th National Development Plan (1992-1996), while other institutions reported that they were at the preparation stage for CALL.

Significant recommendations obtained from the informants were that: there should be CALL training for better understanding of CALL's nature; budget allocation should be solved and properly planned; the computer was best suited for self-access and remedial study; and cooperation among educational institutions in purchasing and developing CALL software should be established.

Suggestions, based on results of the present study, for implications in the preparation of CALL implementation are:

CALL seminars/training should be arranged for manpower development. The training should include contents on the nature of CALL; how to integrate it into language classes; how to manage it; and types of activities.

There should be support from administrators in terms of budgets, opportunities to get more information on CALL, and cooperation from the computer center of each university.

Cooperation among universities should be established in developing, purchasing, and sharing CALL software for their mutual benefit. A CALL center should be set up to act as a focal point in this cooperation.

TABLE OF CONTENTS

TABLE OF CONTENTS (Cont.)

LIST OF TABLES

LIST OF TABLES (Cont.)

CHAPTER I

INTRODUCTION

This study investigated the current status of and problems in implementing Computer-Assisted Language Learning (CALL) in state universities in Thailand and made recommendations for future development. Fourteen universities participated in this study. The subjects were 14 heads of English departments and 172 randomly sampled English language teachers. After related literature and studies were reviewed, two sets of questionnaires were designed and employed as the research instrument. Some statistical procedures were used to ascertain reliability of the questionnaires. The information obtained was analyzed, categorized, and tabulated. Results were used to identify the current situation, and factors and problems in implementing CALL in Thai state universities. Finally, recommendations for future development and suggestions for implications were made.

The presentation of this study is divided into five chapters as follows:

Chapter One discusses the rationale of the study, statement of the purpose, scope and limitations of the study, and definition of terms used in the study.

Chapter Two reviews related literature and research on the background on CALL, its advantages and disadvantages, CALL development in other countries, CALL research and projects in Thailand.

Chapter Three explains the procedures in the study and the analysis of data.

Chapter Four presents and discusses findings of the study.

Chapter Five contains suggestions for implications and recommendations for further studies.

Rationale of the Study

Living in a world of technology, its influence inevitably had an impact on education. Computer-Assisted Instruction (CAI) arose from the combination of two separate factors: educational needs and technological development. It is a means to serve an educational purpose in increasing the efficiency and effectiveness of teaching and learning. The computer as educational technology has been brought into classrooms in an attempt to enhance the teaching and learning processes. The computer has also influenced the field of language teaching and learning. Computer-Assisted Language Learning (CALL), which is a sub-field of CAI, made its appearance in language classrooms in the 1960s.

Ahmad et al. (1985) stated that in the 1960s CALL made its start with the early work that was developed on large computers, mainframes or minicomputers. At the beginning, CALL required a great amount of budget and not all schools could afford it. Later, around the 1970s, developments in computer technology made some mainframe capabilities available on microcomputer systems. Decreasing in cost but increasing in capacity, the microcomputer, at present, has established itself as a modern example of in-house electronic

equipment. Plenty of CALL software or programs have been developed to run on microcomputers. With the interactive feature of computers coinciding with the Individualized Learning Approach, a number of educators in many countries have tried to make use of computers in language classrooms. The computer serves either as a teaching aid or as an infinitely patient tutor in self-access study. CALL is considered as a means of language teaching and learning that attempts to relieve pressure on classroom time and to allow learners to work at their own pace.

During the past decade, a great number of books and articles on CALL have been published. They indicate that CALL has proved its value in many countries. This is also supported by the evidence of the popularity of microcomputers. According to Higgins and Johns (1984:10), in England nowadays computers are to be found in schools at all levels. They are handled by teachers who have no formal qualifications in computing. In a great many homes, computers are also used by both children and adults.

CALL tends to play a greater role in the field of language education. Starting from the 1960s, it has been noted that the purpose of early software was to develop learners' reading and writing skills, and for translation. As technological development carries on and becomes more and more applicable to the field of language education, an aural dimension for the interaction between computers and learners is now possible. This is done by combining computers with other media such as videodisc, compact disc, and digital audio tape. Combinations of the computer and other media, at present, are generally referred by the term "Multimedia".

Marcus (1990) referring to technology development stated that it was reassuring to note that technological innovations are now available for the whole language arts spectrum of reading, writing, speaking, and listening. Voice recognition and sound digitizers and synthesizers, video overlay cards, and other multimedia applications allow students to see and hear, to illustrate and animate their own and others' texts. Students can do all this in instructional settings that have the interactive and flexible nature that derives from computer-based applications. Allan & Cook (1990) added that it is now possible to store on one optical disc, audio and video recordings, photographs and graphics, text and computer data. These media can then be driven in various combinations by a computer, giving rise to the terms Interactive Audio, Interactive Video and Interactive Media.

Currently, in Thailand it is not surprising to find a computer center or computer rooms in the majority of universities. Students of the institutions are allowed to use computers, and generally most of them use computers for scientific subjects. If CALL can be implemented, it is another means to make greater use of an existing resource, the computer center. It will also help the teaching and learning of another subject: language education. However, CALL has not yet made its appearance in our language classrooms even though some Thai research studies prove its merits.

Since CALL tends to have a greater role in the field of language teaching and learning in many countries, in Thailand where English has been taught as a foreign language for a very long time, it is worthwhile for Thai educators to pay attention to this kind of

teaching aid. CALL may help Thai learners in the same manner as it does to learners of many other countries.

In these circumstances, it seemed reasonable to conduct this study to investigate the current status and problems of CALL implementation in state universities in Thailand. The study thus aimed at collecting and presenting data on the present situation and the important factors involved in the adoption of such a new medium to language teaching and learning, particularly in Thai state universities. The information obtained that is relevant to the real situation was expected to be useful for Thai educators. In addition, it was anticipated that findings should properly provide considerable criteria and recommendations for the future development of CALL in Thailand.

Statement of the Purpose

Despite the fact that CALL has been developing for more than two decades, it seems to have been overlooked by most Thai educators. Even though some research studies have been conducted to prove the value of CALL, it is generally known that CALL still has not been seriously implemented in Thai educational institutions. Compared with the era of the language laboratory, the situation is different from the history of English teaching and learning: Thai educators generally tend to recognize new approaches, methods and techniques within a short time.

Given such evidence, the present study was conducted with an intention to find out the exact situation, factors and current problems of CALL implementation in Thai state universities. Considerable

criteria and recommendations based on the results of this study were also discussed to provide a reasonable basis for the direction of any future development of CALL in Thailand.

Thus, this study was designed with an intention to answer the following research questions:

1. What is the current status of CALL in state universities in Thailand ? How many institutions have CALL in use for their English teaching and what role does it play ?

2. What are problems in implementing CALL ?

3. Does each university have a future plan for CALL ? If it does, to what extent does it give the emphasis to, and make provision for CALL in the 7th National Development Plan of Thailand ?

4. What are recommendations for future implementation of CALL at the university level ?

Scope and Limitations of the Study

1. This study covers fourteen firmly established state universities out of twenty universities controlled by the Ministry of University Affairs which are shown in TABLE 1. They were: Chulalongkorn, Kasetsart, Khon Kaen, Chiang Mai, Thammasart, Mahidol, Ramkhamhaeng, Silpakorn, Prince of Songkla, Sri Nakkharinwirot, Maejo Institute of Agricultural Technology, King Mongkut-Thonburi, King Mongkut-North Bangkok, and King Mongkut-Chaokhuntaharn Ladkrabang.

The reason for excluding Sukhothai Thammathirat Open University was that it is an open university so there is no classroom teaching. And the National Institute of Development Administration (NIDA) was

excluded because it does not have a Bachelor Degree program. Therefore, the two universities are not within the scope of this study.

2. For universities that have more than one campus, the biggest campus (in terms of the amount of faculties and students) was selected.

3. For the collection of data, this study is limited to information gathered from administrators and randomly sampled English language teachers of Thai state universities. The interpretation of data is therefore relevant to English language education in Thai state universities only.

Definition of Terms

Author Language : A scaled-down programming language which is much less powerful than a full programming language and is designed to help the user give instructions to the computer more easily than is possible with a full programming language. (Ahmad et al. 1985:97)

Authoring Programs : Programs that enable teachers to enter their own texts, vocabulary lists and test items into program frameworks, and make it possible to link computer activities with current classroom work. (Jones & Fortescue 1987:4)

Authoring Package : A program framework which allows users to enter their own data for use with a ready-made program. (Jones & Fortescue 1987:150)

CAI : Computer-Assisted Instruction.

CALL : Computer-Assisted Language Learning. (However as the terminology has not yet settled, these three terms; CAI, CAL, and CALL are sometimes used interchangeably.)

Compact Disc (CD) : Disc that is capable of storing large amounts of data. Commonly used for high-quality audio recordings, but can also store computer data, or video, or all three at once. (Jones & Fortescue 1987:150)

Interactive Video : A computer/video combination enabling the user to see and hear video extracts linked to computer programs. Possible with both videocassettes and videodiscs.

Courseware : Software that is specifically designed for teaching purposes.

TABLE 1

List of Government Educational Institutes

Under the Supervision of the Ministry of University Affairs

as of 1990

No.	Name
1.	Chulalongkorn University
2.	Kasetsart University
3.	Khon Kaen University
4.	Chiang Mai University
5.	Thammasart University
6.	Suranaree Technology University
7.	Mahidol University
8.	Ramkhamhaeng University
9.	Silpakorn University
10.	Prince of Songkla University
11.	Sri Nakkharinwirot University
12.	Burapa University
13.	Naresuan University
14.	Sukhothai Thammathirat Open University
15.	Ubolratchathani University
16.	The National Institute of Development Administration
17.	Maejo Institute of Agricultural Technology
18.	King Mongkut's Institute of Technology Thonburi
19.	King Mongkut's Institute of Technology North Bangkok
20.	King Mongkut's Institute of Technology Chaokhuntaharn - Ladkrabang

CHAPTER II

REVIEW OF LITERATURE AND RELATED RESEARCH

The purpose of this study is to investigate the current status of, and factors and problems involved in the implementation of Computer-Assisted Language Learning (CALL) in Thai educational institutions, particularly the state universities in Thailand. Attitudes of Thai educators towards CALL were included. The results obtained were expected to give a considerable basis for the development of this kind of teaching aid (CALL) in the future. In order to provide a clear picture of CALL, it is necessary to study the background, the pros and cons, and related areas of study and projects about CALL.

This chapter covers four major parts: background on CALL; advantages and disadvantages of CALL; CALL development in other countries; and CALL research and projects in Thailand. The purpose of this chapter is to provide general information on work related to CALL.

Background on CALL

In the history of education, it is evident that educators are constantly looking for aids to increase the efficiency and effectiveness of teaching and learning. Together with the fact that we are living in an increasingly technological world, few teachers today, especially in the Western world, rely solely on chalk and blackboard. A number of technological developments take place in the classroom. CALL which, according to Carrier (1987) is not an approach to teaching but an aid to language teaching and learning, has come into existence since the 1960s.

When CALL was first introduced in the 1960s, it served primarily as a tutor, assessing a learner's response, recording it, pointing out mistakes, and giving explanations. The major role of CALL has been described as a means of "presenting, reinforcing and testing" particular language items. In other words, the learner is presented with a rule plus examples, and then answers a series of questions which tests his/her knowledge of the rule. The computer then gives appropriate feedback and awards a mark, which may be stored for later inspection by the teacher. In this instance, CALL offers privacy, allowing learners to work on their own, in their own time and most importantly, at their own pace.

An interactive ability distinguishes the computer from other technological equipment, such as audio tape recorders, video tape recorders and film projectors. Pongpun (1987) explained that the unique property of the computer as a medium for education is its ability to interact with the student. Books and tape recordings can tell the student what the rules are and what the right solutions are but they cannot analyze specific mistakes the student has made nor can they react in a manner which leads her not only to correct her mistake, but also to understand the principle behind the correct solution.

Technically, early CALL projects around the early 1960s and 1970s, were developed on large computers. The PLATO project, a large system developed at the University of Illinois, the computer-based foreign language teaching project at Standford University, the work at Dartmouth College in New Hamshire, and the Scientific Language Project by Alford of the University of Essex are all examples of early CALL projects. These depended on mainframes, minicomputers or terminal-

based systems. Owing to the high cost of mainframe and computer time, it was very expensive either to develop courseware or to have on-line computer-assisted instruction, and not many educational institutions could afford this.

More recent developments in computer technology made some mainframe capability available on microcomputer systems, and in relation to a comparative cheapness, make the microcomputer very popular. Ahmad et al. (1985) noted that the late 1970s should be remembered as a period in which the microcomputer established itself as a consumer product. Microcomputer sales are now quoted in millions; retailers of various types stock "micros" as well as the programs accompanying the machines. The programs are categorized as recreational, commercial and educational. The educational programs almost invariably include some language-teaching program. The relative cheapness of the microcomputer means that computing facilities are now much more widely available. The teacher may well have access to a machine at work or at home, and it is probable that several students in a given class will own one. As a result, educational programs, including language teaching programs, were developed to suit the role of microcomputers.

It is noted that during the decade 1965-1975 CALL was almost entirely based on teaching the written language and towards beginning students. Then software developed rapidly. The word processor, a utility program, became popular. Komarakul Na Nagara & Woodhead (July 29, 1992) noted that results of studies on the use of word processing programs indicate a number of benefits such as increased motivation in writing and self-expression; increased willingness to experiment with

words; and increased self-confidence and attitudes. It was further recommended that students be encouraged to use word processing as a productivity tool to write class reports, letters, short stories, and any other variety of learning skill. Apart from allowing students to develop language skills, these allow them to develop basic word processing skills as well.

There are attempts to combine the computer with other technological learning media to cope with all skills of language teaching and learning. As technology has rapidly developed, CALL has increased its capacity in the language learning activities of all four skills. Marcus (1990) reported that it is reassuring to note that technological innovations are available for the whole language arts spectrum of reading, writing, speaking, and listening. Voice recognition and sound digitizers and synthesizers, video overlay cards, and other multimedia applications allow students to see and hear, to illustrate and animate their own and others' texts; and they can do all this in instructional settings that have the interactive and flexible nature that derives from computer-based applications. Also Allan & Cook (1990) point out that:

> It is now possible to store on one optical disc, audio and video recordings, photographs and graphics, text and computer data. These media can then be "driven" in various combinations by a computer, giving rise to the terms Interactive Audio, Interactive Video and Interactive Media....It seems certain that we will use some form of optical disc technology in teaching over the next decade....We do already have experience of using computers and media in ELT and we can use that to prepare for these new forms of technology.
>
> (Allan & Cook 1990: 5-6)

Komarakul Na Nagara & Woodhead (1992) added that the new generation of computers most likely will have built-in audio components. Special programs have been developed by adding an audio component to the word processing function, for example: "Talking Text Writer" which reads the text typed by the computer; "Sound Ideas" which teaches phonics; and "Ollie Hears and Remembers" which is for vocabulary, memory and sequencing skills.

Being an aid to teaching and learning, CALL has various applications: as many forms as teachers can invent and students find effective and useful. Nevertheless, this does not mean that language teachers have to learn how to program by themselves. For the same reason that, when teachers want to use video in the classroom, they do not think about training as film directors or camera operators. Authoring programs and authoring packages are solutions to this. They are designed for use by teachers who either have no time or no desire to learn about the working of computers, but who do want to be creatively involved in the materials their classes are using.

The important thing for the essence of CALL is that teachers involved in CALL should learn how to author new learning material; to enter new words, sentences, or texts into authoring programs that already contain the mechanisms of the activities and exercise types but are content-free. This is done by having the teacher respond to requests for information, which the computer displays on the terminal in ordinary language. The teacher types in the instructions which the learner will have to follow, the exercise task, examples with gaps and the expected answers. Other features may also be built in, for instance, whether the user should have a score and the number of

attempts at the answer to be allowed. Within these parameters, writing CALL materials can be easy, and it does not require language teachers to learn how to become computer programmers.

An authoring program normally has a minimum of three separate components: a writer program, data files, and a student program. A writer program is what the teacher uses to write and edit sets of data. It gives the teacher simple instructions to follow. Data files are what are written (typed) by the teacher. Following an easy and non-technical way of writing new data provided by a writer program, the teacher can create CALL materials that are suitable in level and content for the students. A student program is the program that manipulates the data in the data files. A great number of authoring programs are now available in the market. Author languages are another alternative for creating CALL materials. An author language enables teachers to produce CALL materials more quickly and easily than would be possible with an ordinary programming language. However, in order to make productive and creative use of CALL, the teacher should also understand the ways in which the computer can relate to language teaching, and to a particular class as well (Jones & Fortescue 1987).

One of the most important features of CALL in language teaching and learning is that it allows self-pacing for individualization and self-access learning. Individualization and small group activities have been advocated in language teaching since the early 1970s. The idea is basically that students have distinct likes and dislikes about different classroom activities (Stern 1983). Additionally, each learner has different capabilities in learning: in the ordinary classroom some students may be unable to catch up with their

classmates. CALL can serve as an alternative to their self-access study outside classroom. They can use the computer and courseware to study particular items as long as they need, and at their own pace. Consequently, CALL lessons should be linked with ordinary classroom work, just like any other teaching aid.

Higgins and Johns (1984) explained that there are three obvious ways in which the computer can be exploited: whole class activity; group activity; and individual activity. Firstly, for the whole class activity, the machine, which is possibly combined with a special device used with the overhead projector, serves as a teacher's aid: the electronic blackboard. It is mainly operated by the teacher. Students can be called up to operate the keyboard, just as they would write or draw on the blackboard. The main advantage of the computer in this mode is that it can give an immediate response or feedback and report the consequences of a decision. Therefore, it can create a sense of excitement and participation in a class.

Secondly, the computer can be used for group work, either with or without immediate teacher supervision. Students work on their own while a supervisor just gives them initial training of how to operate the machine. In a case where there is only one machine, the computer assignment can rotate while other groups carry out different activities. One advantage the computer has in this case is that it is silent, therefore it does not disturb other groups in the same room like a tape recorder or video playback does.

Lastly, the computer is used as an individual resource. In this mode, students are allowed to work in their free time, by

borrowing software to work in the computer center or at their home if they have their own computers. The computer can provide various activities to integrate with the lesson, such as drills, quizzes, simulations, communicative games, and programmed learning. If properly utilized, CALL can be very effective, enabling the individual to carry out tasks inconceivable by other means.

These are some factors that give computers a greater role in the field of education. If the language teaching profession does not pay serious and considerable attention to computers, it may be left behind as others take advantage of this powerful new resource.

Advantages and Disadvantages of CALL

In an attempt to bring CALL into the field of language education, just like other technological tools, there are debates as to its pros and cons. Ahmad et al. (1985) divided the advantages of the computer into three types: its inherent nature; those that benefit the teacher; and those that benefit the learner. To begin with the inherent nature of the computer, it can handle a much wider range of activities, and is much more powerful than other technological aids. It can offer interactive learning for the reason that it possess not only the ability to reveal the correct answer like a textbook, but also the ability to assess the student's response. It can repeat an activity with none of the errors which easily arise from repetition by humans. Apart from the ability to handle a very large volume of interaction, it is able immediately to deliver feedback to the student. The computer is time-flexible. It is different from class attending as the student can come to it any time and spend as long as he/she

needs to gain full benefit from the materials. It accommodates different learning speeds. Alternatively, for testing purposes, limits can be imposed on the time available for answering questions as well.

Next, from the point of view of the teacher, the versatility of the computer in handling different kinds of material is prominent. It displays a one-way presentation of information, in the form of text, graphics, audio and video. It can also handle question-and-answer routines, simulated dialogues, hypothesis testing, and many other types of exercise. Questions can be chosen in sequence or at random. When the student has completed the session, the computer can record results, errors, success rates, the time spent, and much more information for the teacher to view later. Therefore, from this point the teacher can revise and refine the materials at any stage, unlike textbook lessons that the teacher cannot easily change. The computer also provides a type of private practice facility that differs from book exercises and language laboratories in that it is responsive to the individual student. Because of its interactive ability, this entire process allows the teacher to have more time available for other class preparation especially when there are constraints imposed by heavy teaching schedules.

Finally, from the student's point of view, the computer's time flexibility allows her a choice of when to study particular topics and how long to spend on them. The branching capacity that enables the student to go to different parts of the program, depending on many different factors, is sensitive to the learner's pace and needs. Each student can work at the speed best suited to her. A failure to respond correctly will not cause the student embarrassment which is typical in

some classroom interaction. More advanced, the computer also allows distance learning possible because computers can be linked by telephone lines or special land-lines. Therefore, a student in one country can easily use CALL materials on a computer located in other country.

For the implications of CALL, Pongpun (1987) noted that computers are suitable for self-access, tutorial, or remedial work with weaker students. This is because they can provide, far better than most human teachers, the great degree of patience required in moving at the pace set by such students. Moreover, the presentation of texts combining graphics displays, which is a feature of the computer, is sometimes more attractive to students than lesson books.

Komarakul Na Nagara & Woodhead (1992) tell us that those involved in education have noted a positive correlation between the extent of control a student can exercise over the learning process and the level of interest in what they are doing and learning. The greater the awareness that students are responsible, the higher the interest level, and the greater the motivation. Students appreciate the fact that the computer acts only on the basis of what it is told, and that the students are responsible for that control. Especially for Thai students, it was noted that:

> ....For many students, especially in Thailand, the computer has represented the first opportunity for students to assume responsibility for their actions in the classroom. Rather than reacting only to the direction of an instructor, they are responsible for obtaining a reaction from something, or someone else.
>
> (Komarakul Na Nagara & Woodhead 1992:9)

Having control over the computers by themselves, students must be prepared to take responsibility for those commands. Some interesting personality changes also take place. They enjoy the sense of control, both over what they are doing and the pace at which they progress. Being responsible for their own pace of learning plays a major role in maintaining their interest. The non-threatening atmosphere of this learning situation is a very important element in a classroom atmosphere.

Mentioned above are advantages of CALL. However, it is common for most things in the world to have both positive and negative sides. Ahmad et al. (1985) also wrote about disadvantages of the computer in language learning: some problems stem from the nature of the computer itself and some relate to the present state of CALL. The majority of CALL programs available in the market are usually written by computer specialists who are sometimes unaware of what really happens in a language classroom. As a result, language teachers found those programs unsatisfactory for language teaching and learning. Like any other educational materials, the quality of CALL programs needs to be evaluated. So, even for those teachers who do not wish to develop their own CALL programs, a knowledge of their operation and possible scope is essential for assessing their potential value. Therefore, for development of effective CALL programs knowledge of three fields is desirable: competence in the taught subject area; pedagogical skills; and computing expertise. In language teaching, however, it is seldom the case that any one individual has these skills sufficiently from the beginning. One solution is that computing and language experts will work together. Author languages and authoring programs are also

designed to solve this problem. They enable language teachers to produce CALL materials more quickly and easily than using an ordinary programming language. However, they exclude some possibilities and tend to discourage innovative work in some aspects.

Additionally, the computer itself can be used only for certain types of teaching, and only with certain types of material if used in a tutorial mode. For example, it cannot effectively conduct an open-ended dialogue with the student. It does not have the vocabulary, the ability to understand the enormous range of utterances possible in any human language. It can learn only in a restricted sense even though there are attempts to develop more advanced authoring programs. The practical matter of equipment is another point. It is common that computers have been used mainly for scientific subjects. Language teachers often do not have much to do with the computer and usually find that it may not easily accessible. In making productive and creative use of CALL, the teacher needs to understand what the computer can do in order to relate it to language teaching and language classroom.

Carvalho (1990) also mentioned a problem that derives from a rapid change in the technological development of hardware. Since things are changing so fast even if schools had the money they would not be able to keep abreast of innovations in the field. This means that when students come out of school they would be confronted by much more sophisticated equipment than before. However, some educators argued that it is better for students to experience the use of computers, even though they would be out-of-date one day, than not. The experience can serve as basic knowledge for any future use of computers.

As mentioned earlier, it is common for most things to possess both positive and negative sides. Therefore in bringing CALL into particular curricula, it is important that the advantages and limitations should be considered in relation to a particular situation and context. Being properly utilized, CALL will then be useful.

CALL Development and Research in Other Countries

The evidence that CALL has rapidly grown in the field of language education especially during the past decade is supported by publications of some new journals for the special interest group on CALL. Also many existing journals provide additional sections for CALL. Around 1984 the International Association of Teachers of English as a Foreign Language (IATEFL) started publishing a new journal "MUESLI News" which stands for Micro Users in English as a Second Language Institutions. Its aim is to serve the worldwide special interest group of English language teachers in CALL to share their ideas and experiences. Teachers of English to Speakers of Other Languages, TESOL, has also officially published "Computer-Assisted Language Learning Newsletter" for years. The "Auteursgroep Educatieve Software vzw" and "Informatique & Enseignement" of Belgium, "Athelstan Newsletter" of U.S.A., "CALL Austria" of Austria, and "On-call, The Journal of the National Call Clearing-House" of Australia, all include sections for CALL.

Nowadays, it seems that every conference of English teaching organizations, for example, IATEFL, TESOL, and ELT, includes topics on CALL. In addition, the annual CALL conferences, for instance, Computer Aided Language Learning and Instruction Consortium (CALICO), EUROCALL,

made provision many years ago for members to share knowledge about CALL. In 1990 Klagenfurt University, Austria, hosted the "EUROCALL 1990" in September of that year. Around 60 participants came from a wide spread of mostly European countries including Hungary, Germany, Yugoslavia, and Russia. Moore (1990) pinpointed that what emerged from the conference was a keen desire to start with the needs of language learners, and find appropriate ways of using computers to help them, rather than make the needs of learners fit in with new technical developments.

According to the CD-ROM abstract database, which comes from computer-assisted technology, there are many research studies conducted to prove the merits of CALL in the U.S.A. Five of them are referred to in this study as examples of those researches. Firstly, Hoffman (1984) conducted a doctoral dissertation on "Reading Achievement and Attitude toward Reading of Elementary Students Receiving Supplementary Computer Assisted Instruction Compared with Students Receiving Supplementary Traditional Instruction at Ball State University". The purpose of the study was to determine if there was a difference in reading achievement and attitude toward reading of elementary students receiving supplementary traditional instruction. Also determined was whether or not there was a difference in reading achievement and attitude toward reading of boys and girls.

Conclusions based on the findings are: (1) Differences in gender contributed significantly to student attitude toward reading. (2) CAI was more effective for males than for females. (3) Student supplemented by CAI in vocabulary and comprehension performed as well as students supplemented by traditional instruction in vocabulary and

comprehension. (4) Males supplemented by CAI in vocabulary and comprehension performed significantly better than males supplemented by traditional instruction in vocabulary and comprehension. (5) Traditional supplementary instruction in vocabulary and comprehension was significantly more effective for females than for males.

Secondly, Ward (1987) conducted a doctoral dissertation on "A Comparison of Computer-assisted and Traditional Drill and Practice on Elementary Students' Vocabulary Knowledge and Attitude toward Reading Instruction at the University of Southern Mississippi". The purposes of this study were to: (a) determine the effects of computer-assisted and traditional vocabulary drill and practice on elementary basal reading students' vocabulary knowledge; (b) determine if computer-assisted and traditional vocabulary drill and practice affect students of high reading ability and low reading ability differently; (c) determine if computer-assisted and traditional vocabulary drill and practice affect males and females differently; and (d) determine the effects of computer-assisted and traditional drill and practice on students' attitudes toward reading instruction.

Results indicate that the group taught using computer-assisted instruction scored significantly higher than the traditional group on the vocabulary test. A significant interaction was found between methods of vocabulary drill and practice and reading ability. There were no significant differences between the scores of males and females.

Thirdly, Schwartz, M. (1988) of Harvard University conducted a doctoral dissertation on "Anxiety in the Language Classroom and

Computer-Assisted Language Learning". The study was to investigate anxiety in relation to language learning and the use of CALL. The researcher explained that computers are, by design, interactive machines, and since interaction is fundamental to language learning, the computer lends itself perfectly well to learning languages. The computer is also beneficial in this domain since it allows students to work independently and at their own pace. The research showed that independent study eliminates anxiety since students are not called upon to perform before their peers. Students can also review difficult lessons, drills, and exercises as often as they like without the computer becoming impatient as a teacher or tutor might. The analysis of data gathered for two and a half years demonstrates that CALL actually helps to alleviate the anxiety normally associated with language learning.

Next, Meskill (1988) conducted a doctoral dissertation on "The Exploratory Mode in Computer-Assisted Language Learning: The Study of an Application for Students of English as a Second Language Using the Interactive Video Medium at the Boston University". The study tested the theory that a less structured or "exploratory" computer learning environment better suited the needs and learning styles of different language learners. The investigator designed an exploratory program incorporating the interactive video medium. The program, entitled "English Conversation Strategies", allows students of English as a Second Language full control over the sequence and type of on-line activities.

Movement through the exploratory program, total time on task and degree of user satisfaction were compared with language learning

ability as reflected in a rating given the students by their English teacher. Results support the intuitive assumption that less structured on-line instruction is appealing across a range of language learner types and, by extension, allows for individual language learning strategies.

Finally, Fitzgerald (1989) of the University of Oregon conducted a doctoral dissertation on "A Comparison of Two Methods for Teaching Expository Writing to Fourth-Grade Students: Computer-Assisted Language Experience Approach Versus Traditional Textbook Approach (Writing)". Two studies were conducted, involving a total of 53 fourth grade students in two schools. Both studies compared the effects of a computer-assisted language experience approach to writing instruction with a more traditional textbook approach. The primary difference between the two studies was mode of writing practice, students at one school practiced with paper and pencil while students at the other school practiced on computers.

The results of the study indicate a significant difference between the two treatment groups in both quality and quantity of writing, as well as attitude towards writing instruction. The group receiving the computer-assisted language experience approach scored significantly higher on measures of writing quality ($p = .016$), writing quantity ($p = .007$) and attitude towards writing ($p = .009$) when compared to the group receiving the traditional textbook approach.

In addition to the above, a lot of articles were contributed to language education journals about various experiences, new innovations based on computers, and recommended software in CALL.

Dawson (1990) suggested ways of using word processors for materials preparation. He recommended that a word processor is a powerful tool for a teacher when creating lessons. Many teachers use typists' correction ink or strips of paper with sticky tape to blank-out texts. A few hours spent learning the basics of word processing would avoid this and save time. The finished original is much neater in appearance and can be changed easily without destroying it. The most important point is that once a text is typed in, it can be used again and again or changed very simply.

Hult (1990) wrote that computers can be invaluable tools for students conducting their own research and writing research papers. Students can exploit the power and flexibility of computers when writing research papers and reports by means of finding, organizing, and storing information and then composing, revising and editing papers.

Allan and Cook (1990) of the University of Queensland, Australia, stated new directions media technology is taking. This included the development of interactive media materials for second language teaching and learning. Media such as optical discs, audio and video recordings, photographs and graphics can be driven in various combinations by a computer. This combination gives rise to the terms Interactive Audio, Interactive Video and Interactive Media. The focus is on spoken language with a set of speech recordings on compact disc. A computer is used as a kind of toolbox. Their pilot stage of the project is to develop a program which examines intonation.

Tutunis (1990) of Bogazici University, Turkey is conducting a study focusing on the relationship of computers to teacher training and EFL/ESL practice within a variety of British educational institutions. The population will include three groups involved in TESOL and CALL. Firstly EFL/ESL teachers will be asked how they are trained and how they integrate CALL into their teaching. Secondly EFL/ESL students will be asked for their linguistic backgrounds, their difficulties in second language acquisition and their attitudes towards CALL. Finally experts, software producers and publishers will be asked about their present opinions and future expectations of CALL.

In India, Bose (1990) noted that in 1983-1984 the Government of India initiated a project called CLASS (Computer Literacy and Studies in School). This project has involved nearly 800 schools and has generated great interest among students and teachers in the use of computers. The AC (University Grants Commission) provides financial assistance for making available computer facilities in colleges, universities and teacher education institutions, while the Technical Education Bureau of the Ministry of Human Resources Development of the Government of India has made available computer facilities in engineering colleges and polytechnics. According to a recent newspaper report, by 1990 about 10,000 new computers mostly PCs, PC/XTs and PC/ATs and minis will be introduced into the educational sectors. There were at this time about 60 resource centers in India.

They encountered, however, a problem of inadequacy of teacher training in CALL. In higher education no such training was provided, and as a result the available computers are either lying idle or being handled by computer specialists who are not necessarily teachers. Bose

(1990) further remarked that there was an urgent need for relevant teacher training. In 1987 the Central Institute of English and Foreign Languages (CIEFL), Hyderabad, planned to introduce a teacher training course in CALL as a part of its Postgraduate Diploma in the Teaching of English. The motivation for this was that some of the course participants were from institutions where computers were available but actually used only by teachers of science and mathematics. The first CALL course started in December 1988.

In Malaysia, Daud (1990) experienced with the use of videotext to teach English for Specific Purposes (ESP) to business students in their final year of the Bachelor of Business Administration at the International Islamis University. The Malaysian videotext system called TELITA, which is like PRESTEL in the UK, consists of a central videotext computer which serves customers via the public switched package telephone network. A customer is linked in to it via the computer terminal, a modem and telephone line equipment. TELITA offers on-screen indexes which give information that a Malaysian businessman would be interested in. Therefore the information was authentic, the teacher could make the lesson as close as possible to a real-life situation. A discussion and a follow-up writing practice were classroom activities based on the current information, for example, of the Stock Exchange from the videotext.

Carvalho (1991) reported on an Information Technology (I.T.) project in Portuguese schools. It is called Projecto MINERVA which intended to introduce I.T. across the curriculum in state schools in Portugal. The project has two phases: the first one, called the pilot phase, lasted until 1989 and the second one, the operational phase,

was to continue until 1992. The project received EEC funding. It has working bases in Universities and Higher Education Institutions which are called Poles. Each Pole works with a number of schools: primary, preparatory and secondary. By 1992 every preparatory and secondary school was to be involved in the Project, plus 25% of all primary schools all over the country.

In each preparatory and secondary school involved in the Project there is a Resource Center called the MINERVA School Center. Every school to have joined the Project has 2-8 computers in its resource center. Three to six people act as its coordinators, developing strategies which foster the use of I.T. in schools. These resources centers have three functions. Firstly, they are for teacher (and student) training in the use of I.T. in general. The main objective is to provide a practical knowledge of suitable tools and help teachers develop a critical attitude towards education as a whole. Secondly, they are to serve as resource centers by making material available to the whole school community. Thirdly, they are to be vehicles for the transformation of the school environment by supporting activities that help the coming together of the various parts that constitute schools as a whole.

It is further noted that in running the Project, there are various factors which have to be taken into account. They are hardware, software, curricula, materials, the status of teachers and teacher trainers. Concerning CALL and the MINERVA Project, Carvalho remarked that:

> ....In this particular beginning, computers were the territory of Maths and Physics teachers....Language teachers, who have always thought of themselves as privileged in their connection with the ineffable, regarded all this as another of those fads that would be swallowed by the unquenchable thirst of history. Yet, they soon came to realize that the fad was here to stay and that students were eager to use these machines. So, they were forced to step into the speeding wagon.
>
> (Carvalho 1990:4)

Regarding the use of utility software, it is found that the word-processor program is the most widely used. Much has been written about the virtues of this tool. Many discovered by trial and error that the approach to writing as a process could be helped and indeed enhanced by its use. Desktop-publishing programs are also favorites with both students and teachers and are used in publishing newspapers in schools. Database management systems have also played an important role in the languages area of the project. Some teachers have used them to build what is called "active dictionaries". Among educational software, Adventure games and simulations have been used a lot. They are very popular in that they allow very different kinds of curricular and extracurricular use. Text reconstruction programs are nearly everywhere and students always enjoy having used them. (Carvalho 1990)

These are some examples of CALL development and research in other countries. It can be noted that there is a variety of activities using computers in the process of language learning. This information may be used and adapted for the Thai situation when CALL is developed in the future.

CALL Research and Projects in Thailand

Sangrawee Chaopricha (1985) has carried out a CALL research project funded by Rajadapisek Fund of Chulalongkorn University. It is an empirical study called: "A Study in Developing the Usage of Microcomputers as a Medium for the Individualized Learning and Teaching English Reading Skills". The study was designed to find out whether it would be feasible to integrate the use of a microcomputer program developed in BASIC into the language teaching curriculum for individualized instruction of English reading skills. The subjects were graduate students majoring in political science, commerce and accountancy, science, and engineering. They were divided into two groups. One, the control group, was taught by a teacher using traditional methods. The other, the experimental group, used a microcomputer as the teaching medium to practice reading skills according to their individual needs on a tutorial basis.

A program was developed in BASIC to teach English reading comprehension. Passages were selected and adapted from reading materials used in the English Intensive Courses of Chulalongkorn University Language Institute. Lessons were in conversational instructive language. There were also questions and answers as well as computer expressions to indicate right and wrong answers and compliment or disapproval.

It was found that the students using the microcomputer scored significantly higher on tests of achievement than the control group whose teachers used traditional methods in the classroom. The differences were statistically significant at the level of .05. The

conclusion made was that the use of microcomputers can be of great benefit in the teaching of reading skills.

Tawat Hmoryadee (1989) conducted "A Comparison of Learning Achievement and Retention in English Subject of Mathayom Suksa Two Students in Learning from Computer-Assisted Instruction (CAI) Lesson with and without Sound Accompaniment" at the Graduate School of Chulalongkorn University. The study compared learning achievement and retention in English subject between CAI lesson with and without sound effect. The subjects were Matayom Suksa two students of Wat Benjama Borpit school in the 1988 academic year.

Three findings were made at different periods of the study. It was firstly found that the achievement of the subjects studied from CAI lesson with and without sound effects was not statistically significant at .05. Then after two weeks testing indicated a significant difference at .05. The subjects who studied the CAI lesson with sound effects had higher achievement than the subjects studied the CAI lesson without sound effects. Finally, after four weeks testing indicated a significant difference at .05. The subjects studied CAI lesson with sound effects had higher achievement than the subjects studied CAI lesson without sound effects.

In 1985 a committee chaired by Dr. Nitaya Kanchanawan and composed of linguists and Thai lecturers from six Thai universities conducted a project which aimed to produce computer translations of science and technology texts from English into Thai. This work was done as part of the English-Thai Machine Translation Project based on use of the ARIANE System, a generalized machine translation system

developed in France. The Thai project involved the preparation and programming of linguistic data to enable the ARIANE System to convert English lexical items to their Thai equivalents and use them in appropriate Thai sentence structures.(Pongpun 1987)

In 1990 Chulalongkorn University Language Institute (CULI) established the CULI Resource Center. It was equipped with a range of teaching media for faculty members, students and the community at large who were interested in strengthening their English language skills. This time was also the beginning stage for CALL implementation. Five PCs with color monitors were initially available in the resource center for students to try out various CALL programs. Some of them were language game programs that include different objectives in language learning apart from fun. Those programs were, for instance, Eclipse, Sequitur, London Adventure, Fast Food, Pinpoint, Choicemaster, Clozemaster, Testmaster. Also there were attempts to combine the course lessons into the authoring programs available for students to try out in their self-access study.

CULI held an in-house teacher training session on CALL during the Chulalongkorn Annual Exhibition 1990. Later, there were a few CALL training/seminars. More formal training was also expected to be organized. CULI had a plan to purchase more computer hardware and CALL software for its expansion plans in the near future. Some teachers at CULI were also developing their own CALL software.

CULI resource center had the "English-Word-A-Day" program in which teachers worked on five word cards a week and shelved them in the center. Each word is accompanied by an accompanying code, the part of

speech, its pronunciation written both in Thai and English. In addition, each of the lists are accompanied by supplementary activities and a test, which students can complete. An answer key is provided so students can conduct self-checks to determine how they performed. CULI is now considering a follow-up project to this program by producing a fully computerized version of the existing word lists, so they can be accompanied by graphics and sound. Since the technological developments in the area of sound and graphics capabilities available, the feasibility of such development appears to be quite realistic. Developments in this area would greatly enhance student's language learning. (Komarakul Na Nagara & Woodhead, September 30, 1992)

Komarakul Na Nagara & Woodhead (August 26, 1992) reported their visit to the new International School Bangkok (ISB) and its resource center which is called the Media Services Department. ISB has been using computers in its education program for quite some time. It probably represents one of the more forward-looking computer using educational institutions in Thailand at this time.

The Media Services Lab, which is a part of the Media Services Department, has around 8 different workstations. They are three Macs, one Apple IIe, one Tandy and two IBMs. The computers in the Media Lab are being used in very special way. The different is that the computers in the Media Services Lab are primarily used to drive other projects. They are, for example, Earth Station Bangkok where information from weather satellites is analyzed; the Compton's Multimedia Encyclopedia; the ABC News Laser Disc collection; as well as CD Newsbank. The laser disc player and the overhead projector device here are also driven by the computer.

Rubis (cited in Komarakul Na Nagara & Woodhead 1992), the ISB Director, explained that some teachers actually bring their students into the Media Services Lab to conduct classes. Teachers working with English as a foreign language like to bring students to the Lab. Students enjoy being there and using the learning tools on the workstations. The ability to work at their own pace on lessons and assignments makes the task a very non-threatening type of experience.

The Bangkok Post Newspaper, at present, provides a column for education and computers in its Wednesday Post Database section. Many issues concerning computers in education are constantly contributed. Weekly published articles on CAI tend to provide a useful basis for Thai educators who are interested in using technology in their teaching practice.

This general information on CALL was expected to serve as a basic idea in the present study. Since this study intended to find out the status of, and problems in CALL implementation in Thai state universities, and to make recommendations for future development, it was anticipated that the findings would reveal some implications proper to Thai situations.

CHAPTER III

METHODOLOGY

This study is a descriptive research that intended to investigate the current status and problems of Computer-Assisted Language Learning (CALL) implementation in state universities in Thailand. It also intended to provide recommendations and suggestions for future development of CALL. The researcher began with a documentary survey of CALL in various aspects. They are, theoretical background and the fundamental features of CALL, advantages and disadvantages, projects and developments in other countries and in Thailand, and suggestions for integrating CALL into language classrooms. The information obtained was then described under the five sections of Chapter Two. To find out answers to the four research questions spelled out in Chapter One, the method employed was a survey using two separate sets of questionnaires as research tools. Some interviews and a pilot study were conducted to serve in a preliminary survey. Prerequisite information obtained was used in the design of the final questionnaires. The construction of questionnaires was supervised by experts and the thesis supervisory committee.

This chapter describes the procedure of the study. Details are discussed in the following eight sections. They are: population; construction and development of the questionnaires; pilot study; the questionnaires; administration of the final questionnaires and collection of data; validity of the questionnaires; reliability of the

questionnaires, and finally, analysis of data and statistical procedures.

Population

A name list, as of 1991, of 368 English language teachers from fourteen institutions was obtained from the Ministry of University Affairs. All of them were working in the offices that are responsible for basic English courses. Based on the sample size table of Krejcie and Morgan (1970:607-610), the number of subjects to be used in this study was 186. Then they were divided into two groups. The first group were 172 randomly sampled English language teachers. The selection was made on the basis of the systematic random sampling method that every other name on the list was chosen. The second group were the fourteen heads of English Departments of those institutions, on behalf of the administrator of English teaching of each institution. The first group, teachers, were to answer the Questionnaire A, and the second group, Heads of English Department, were to answer the Questionnaire B. All the subjects selected were considered as representatives of English language teachers of each university.

The reason for selecting these two particular groups of teachers was that they deal with students of all faculties of the university. They do not teach only students majoring in English who have a higher motivation in studying English than students of other majors. Therefore, these English language teachers encounter all types of students whose attitudes, motivations, and abilities in learning English language may vary greatly. Furthermore, it was impossible for this study to investigate all groups of English language teachers.

Construction and Development of the Questionnaires

The questionnaires employed in this study were written in Thai in order to minimize problems of ambiguity and misinterpretation. In developing the questionnaires, some research studies and literature on the fundamental problems of CALL implementation were reviewed. Five English language teachers, from different universities, randomly chosen on the basis of accessibility, were informally interviewed. They were asked about the status of CALL in their institutions, their attitudes, opinions, teaching behavior, and the use of educational tools in their usual teaching practice. An initial questionnaire was then prepared based on the information obtained from the literature review and the interviews. After that it was revised according to suggestions of the thesis supervisory committee. This preliminary questionnaire was later tried out in a pilot study of the research.

Pilot Study

A pilot study using a questionnaire as a research device was conducted to obtain further information relevant to the two final questionnaires. Simultaneously, the pilot study was conducted so as to pretest the effectiveness of the questionnaire as well as the level of cooperation the subjects contributed.

Thirty English language teachers from Chulalongkorn and Kasetsart University were requested to participate in the pilot study. These informants were required to answer the preliminary questionnaire, and to identify ambiguities, and uncommon terms and statements. They were also invited to comment on the questionnaire's contents, and to express any other opinions or suggestions concerning this investigation

in general. Based on the information received, and suggestions made by the thesis supervisory committee, the questionnaire was once again modified. Some irrelevant items were excluded. Some missing points and possible choices were added. Finally, all ambiguous wordings were clarified.

The Questionnaires

Two separate sets of questionnaires were developed. The Questionnaire A (as shown in APPENDIX A) was designed for randomly selected English language teachers. Questionnaire B (as shown in APPENDIX B) was designed for Heads of English Department, on behalf of the administrator of English teaching of each university. The two questionnaires were in Thai in the hope that problems of ambiguity and misinterpretation would be kept to the minimum. Each question included in the two questionnaires was designed in relation to the purposes and analysis methods of this study.

Contents and purpose of every single item of the two questionnaires are discussed below.

The Questionnaire A.

The questionnaire A was designed with the intention to answer the research questions 1,2, and 4 spelled out in Chapter One. It was sent to 172 English language teachers of the fourteen state universities. This questionnaire contains two main parts. Part I of the questionnaire asked for general information of the respondents. Part II inquired about the respondents' teaching style, the status of

CALL in each institution, and the respondents' experiences, opinions and attitudes towards CALL.

The questions used in the questionnaire were of both close- and open-ended types depending on the different purpose of each item. The explanation of each question is as follows:

Items 1-4 asked about the general personal background of the respondents: gender; teaching experiences; educational degree; and experience of study abroad. These factors were intended to be later analyzed to see whether different background would affect attitudes towards the use of computers or not.

Item 5 asked whether the respondents had ever used computers before. If they had, then they were asked to answer items 6 and 7 about types of work and their attitudes deriving from their experiences using computers. Those respondents who had never used computers before were asked to skip items 6 and 7, and to answer item 8.

Item 6 required the respondents to identify for what types of work they had used computers. Four specific types of work were listed ranging from the simple use to the more complicated. An open-ended statement was also provided, should the respondents need this.

Item 7 asked the respondents who had experienced the use of computers for their opinions towards computers. Six specific sub-items were asked with "Yes" or "No" answers, and an open-ended statement was provided. Items 7.1-7.6 are as follows:

Item 7.1 There is no difference between working with and without computers.

Item 7.2 Learning how to use computers is complicated.

Item 7.3 Using computers enables you to work more quickly.

Item 7.4 Using computers enables you to work more effectively.

Item 7.5 Using computers makes you work more slowly owing to the need of time spent in learning how to use computers.

Item 7.6 Generally, learning how to use computers is worthwhile.

Items 7.1, 7.2, 7.5 represented negative attitudes while items 7.3, 7.4, and 7.6 represented positive attitudes if the respondents agreed with the statements.

Item 7.1 and item 7.4 were designed to confirm internal consistency of responses which substantiates the reliability of the questionnaire. They had related meanings. If the respondents answer "Yes" in item 7.1, their responses in item 7.4 should be "No". On the contrary, if the response in item 7.1 is "No", it should be "Yes" in item 7.4.

Items 7.3 and 7.5 are another pair of related statements designed in order to confirm internal consistency of the responses. Reliability of the questionnaire is confirmed if responses of these two items mean the same.

Item 8 inquired whether the respondents had any plan to begin or have additional study on how to use computers. This was intended

to be used as an indication of the respondents' interest and acceptance of computers in their future teaching.

Item 9 asked whether the respondents had ever played computer games or not. This was intended to find out whether the respondents were familiar with computer games which do not require any formal knowledge of computers. Also, it was to inform the respondents about computer games, another aspect of computer use, which are common to children and youths nowadays.

Item 10 asked whether the respondents had known of CALL in other countries. This question intended to find out how popular CALL was among Thai educators, which would be revealed by the proportion of teachers who already knew about CALL. Concurrently, this was designed so as to inform those respondents who had not yet heard about CALL and to lead them into the matter of CALL in the questionnaire later.

Item 11 requested the respondents to introduce any colleague(s) interested in CALL. The recommended name(s) would then be useful in an approach, if the researcher would like to gain more information about CALL in each university.

Item 12 asked about general characteristics of the respondents' English classes; what kinds of teaching aids were used and to what degree they were used. Six choices of particular behaviors were listed, and an open-ended statement was provided. The sub-items 12.1-12.6 are as follows:

Item 12.1 The overhead projector.

Item 12.2 The cassette player.

Item 12.3 The video player.

Item 12.4 The language laboratory.

Item 12.5 The computer.

Item 12.6 Others (Please specify)

Item 13 inquired whether the respondent's institution already had CALL in use.

Item 14 asked whether the respondents had used CALL before. If they had, they were asked to mention the name(s) of any software they had used. If they had never used CALL, they were asked to skip items 15-16 to answer item 17.

Item 15 required respondents who had experience of CALL to indicate where they used CALL: at their present office or elsewhere.

Item 16 again required respondents who had experienced CALL to identify types of activities.

Item 16.1 Used as an educational tool, just like a cassette player, a video player, etc. with a purpose to enhance teaching and learning in class.

Item 16.2 Provided for individual student's self-access study.

Item 16.3 Used as a remedial study for particular students.

Item 16.4 Considered as a requirement that students had to carry out after their classroom time.

Item 16.5 Others (Please specify)

Item 17 asked every respondent to answer 30 sub-items to indicate their opinions towards CALL. They are as follows:

Item 17.1 Using computers is complicated.

Item 17.2 Computers are probably not appropriate to language teaching and learning.

Item 17.3 CALL is not necessary because existing teaching methods are good enough.

Item 17.4 CALL may help to enhance the effectiveness of English teaching and learning.

Item 17.5 You have not yet been confident in the effectiveness of CALL.

Item 17.6 Generally, CALL should be worth investing.

Item 17.7 Investing in CALL might not be worthwhile.

Item 17.8 CALL will soon disappear.

Item 17.9 You are afraid that you will be disappointed of the effectiveness of CALL.

Item 17.10 The language laboratory is not as useful as expected.

Item 17.11 Existing CALL programs are not good enough.

Item 17.12 It is preferable to wait until better CALL programs are available.

Item 17.13 You would like the administrator to pay more attention to the matter of CALL.

Item 17.14 There must be a lot of computer equipment for the implementation of CALL.

Item 17.15 Those who are not good at computers are probably unable to use CALL in their teaching and learning.

Item 17.16 CALL tends to be impossible due to the need of a great budget.

Item 17.17 You would like to have chances to participate in CALL training.

Item 17.18 There is not enough CALL training in Thailand.

Item 17.19 Computers will one day replace human language teachers.

Item 17.20 Students are presumably not interested in using CALL.

Item 17.21 Students will plausibly be more interested in English if there is CALL.

Item 17.22 Computers probably help to solve problems deriving from students' different pace of learning.

Item 17.23 Computers can presumably be used in teaching all the four skills; listening, speaking, reading, and writing.

Item 17.24 Computers should be effective if used in the teaching of listening.

Item 17.25 Computers should be effective if used in the teaching of speaking.

Item 17.26 Computers should be effective if used in the teaching of reading.

Item 17.27 Computers should be effective if used in the teaching of writing.

Item 17.28 Computers are an interesting educational tool, they should be used.

Item 17.29 You have not yet been interested in CALL because you are not fond of using computers.

Item 17.30 Others (Please specify)

The respondents' answers in item 17 were then coded for calculation and interpreted on the following scale:

1 = Strongly disagree

2 = Mildly disagree

3 = Disagree

4 = Agree

5 = Mildly agree

6 = Strongly agree

The mean value derived form the calculation was interpreted on the following ranges:

0.5 - 1.4 = Strongly disagree

1.5 - 2.4 = Mildly disagree

2.5 - 3.4 = Disagree

3.5 - 4.4 = Agree

4.5 - 5.4 = Mildly agree

5.5 - 6.5 = Strongly agree

Item 18 asked whether the respondents had heard about CALL training in Thailand before.

Item 19 asked whether the respondents had participated in any CALL seminar/training before (either in the country or abroad). Respondents who answered "Yes" were requested to mention the organizer and year of that seminar/training. While respondents who answered "No" were requested to skip item 20 to continue to item 21.

Item 20 then required the respondents who had ever participated in CALL seminar/training to give any opinions and/or comments they had towards the seminar/ training.

Item 21 finally requested all respondents to give their opinions and/or suggestions towards the implementation of CALL at university level as they wished.

The Questionnaire B.

The questionnaire B was designed with an intention to answer the four research questions spelled out in Chapter I. It was sent to heads of English Departments responsible for basic English courses of the fourteen state universities. This questionnaire consisted of two main parts. Part I of the questionnaire asked for general information of the respondents. Part II then inquired about the present status of CALL in each institution, the respondents' experiences, attitudes towards CALL, trends and policy, and future plans and recommendations for CALL.

The questions used in the questionnaire were of both close and open-ended types depending on the different purpose of each item. The explanation of each question is as follows:

Items 1-11 asked for the respondents' general personal background exactly the same as in items 1-11 in the teacher questionnaire (Questionnaire A).

Item 12 asked whether the respondents' institutions had already implemented CALL or not. The respondents who answered "Yes" in this item were asked to identify the role CALL contributed to their English

teaching in item 13. Those respondents who answered "No" were asked to skip item 13 to answer item 14.

Item 13 requested the respondents who had already had CALL in use in their institutions to identify types of activities for which CALL was used. Four specific types of activities were listed with an open-ended option provided. They are as follows:

Item 13.1 Used as an educational tool, just like a cassette player, a video player, etc. with a purpose to enhance teaching and learning in class.

Item 13.2 Provided for individual student's self-access study.

Item 13.3 Used as a remedial study for particular students.

Item 13.4 Considered as a requirement that students had to carry out after their classroom time.

Item 13.5 Others (Please specify)

Item 14 inquired whether the respondents had experienced the use of CALL before.

Item 15 asked the respondents to answer 30 sub-items to indicate their opinions towards CALL. They were the same statements as those in item 17 in the Questionnaire A.

Item 16 asked whether each institution had any plan to implement/or further develop CALL. Respondents who answered "Yes" were then asked to answer item 17 for additional details. In contrast, those who answered "No" were asked to skip item 17 to answer item 18.

Item 17 requested the respondents to give details of their institutions' future plans for CALL during the 7th National Development Plan of Thailand.

Item 18 requested all the respondents to express their opinions, comments and/or suggestions about CALL implementation at the university level as they wished.

Administration of the Final Questionnaires and Collection of Data

The two sets of questionnaires were sent to the sampled English language teachers, and heads of English of the offices responsible for basic English courses at the fourteen state universities through the Heads of the Departments. A cover letter from the Head of Department of Foreign Languages, Mahidol University, asking for cooperation in distributing and collecting the completed questionnaires was attached. An addressed and stamped envelope was enclosed to every institution.

Each respondent received a questionnaire package that consisted of:

a) a copy of the questionnaire with a running number on it

b) a cover letter from the researcher explaining the objectives of the study and its significance, asking for cooperation in completing the questionnaire and indicating how to return the completed questionnaire

c) a bookmark printed "Thank you" as a compliment to the respondent's cooperation.

After three weeks, the researcher collected the first batch of completed questionnaires. Then phone calls were made to a person

assigned by the Head of Department to collect the completed questionnaires of each university. This direct contact was done in order to find out whether there was any problem in collecting questionnaires. The rest of the questionnaires were collected again after three weeks.

Validity of the Questionnaires

This study was intended to investigate the factors relevant to the adoption of Computer-Assisted Language Learning (CALL) implementation in the state universities in Thailand. Efforts were made to ascertain the validity of the questionnaires. Beginning with the construction and development of the questionnaires, they were based on literature and research reviews, and the preliminary interviews with some English language teachers. Areas that might be involved in CALL adoption based on the documentary survey and information from the interviewees were included in the questionnaires. All questions were directed to distinguish and identify opinions, attitudes of English language teachers towards CALL, and the emphasis given to and provision made for CALL in the 7^{th} National Development Plan of Thailand: all important information to be analyzed in this study.

During the pilot study the respondents were also asked to comment on the questionnaire contents and any ambiguity of terms. These comments together with specialists' advice and the thesis supervisory committees' suggestions were used to guide the researcher in developing the final questionnaires. Finally, the revised questionnaires were again submitted for the thesis supervisory committee's approval before being employed in the main study. Thus,

it would be reasonable to claim the face and content validity of the questionnaires.

Reliability of the Questionnaires

To sustain the reliability of the questionnaires the following methods were designed.

Firstly, the questionnaires included the instruction that all the subjects would not be affected in any way by the manner they answered the questionnaires: their answers would be treated confidentially. It was reasonable to contend, therefore, that their responses reflected their sincere attitudes and judgement to a certain extent.

Secondly, according to the recurrent trend in justifying reliability of the questionnaire measuring people's opinions and attitudes, Chamonmarn (1987) stated that it is appropriate to use internal checking of answers. Therefore, a means employed to sustain reliability of the questionnaires in this study is by confirming the internal consistency of the subjects' responses. The questionnaires were then designed to contain some items related to other items. If the responses of these related items agreed with each other, they would confirm the existence of internal consistency and the reliability of the questionnaires.

Five pairs of items designed for internal consistency checking of the teacher questionnaire (Questionnaire A) are:

Items 7.1 and 7.4

Items 7.3 and 7.5

Items 17.2 and 17.4

Items 17.6 and 17.7

Items 17.20 and 17.21

Five pairs of items designed for internal consistency checking of the Department Head questionnaire (Questionnaire B) are:

Items 7.1 and 7.4

Items 7.3 and 7.5

Items 15.2 and 15.4

Items 15.6 and 15.7

Items 15.20 and 15.21

Thirdly, a statistical procedure was also employed to confirm the reliability of the questionnaire A. It was the Alpha Coefficient which was used to ascertain the consistency of responses to the teacher questionnaire item 17.

Consequently, it could be concluded that the reliability of the present study was confirmed by the results of both design and statistical procedures discussed.

Analysis of Data and Statistical Procedures

After the completed questionnaires were received, data was interpreted, categorized and tabulated on computer sheets to calculate the statistical values. All data analysis was completed using the LOTUS 1-2-3 program. The statistical devices employed in the present study are as follows:

1. Percentage and Frequency Distribution.

Percentage and frequency distribution were used in the analysis of answers concerning the respondents' demographic data and status of Computer-Assisted Language Learning (CALL).

2. Arithmetic Mean and Standard Deviation

Arithmetic mean was employed to provide central tendency or a single summary of certain aspects of informants' attitudes towards CALL. Standard deviation was used to further explain the extent of variability in the distribution of answers in each questionnaire item.

3. t-test

t-test was employed to ascertain discrimination power of the teacher questionnaire (Questionnaire A) in discriminating between positive and negative attitudes of informants. Answers of sub-items 17.1-17.29 of teacher questionnaire were used for this statistical method.

4. Alpha Coefficient

Besides internal consistency checking of answers, Alpha Coefficient was employed to confirm the reliability of informants' responses. Twenty-nine sub-items of teacher questionnaire item 17 which are six-point Likert type scale were used for calculation.

CHAPTER IV

FINDINGS

Chapter Four presents and discusses the findings of the study obtained by means of two sets of questionnaires. Two groups of subjects who answered the questionnaires were: randomly sampled English language teachers working in the offices that are responsible for fundamental English courses of 14 state universities; and heads of those departments. Teachers answered the Questionnaire A while Department Heads answered the Questionnaire B. Their responses were categorized, tabulated, and computed. The findings were then presented within the framework of the research questions spelled out in Chapter One.

Reliability of the Questionnaire Results

The number of teachers who returned the Questionnaire A, was 131 out of 172, representing 76.16% of the target population. Nevertheless, it was found that ten questionnaire were not proved reliable on the basis of internal consistency checking of answers. Simultaneously, the number of Department Heads who returned the Questionnaire B was eleven out of fourteen, representing 78.57% of the target population. None of the eleven returned questionnaires was excluded as they all proved reliable according to internal consistency checking of responses. As a result, reliable data from one hundred and twenty-one respondents of the Questionnaire A (70.35%) and eleven of the Questionnaire B (78.57%) were finally analyzed to answer the four research questions of the present study.

Next, the Alpha Coefficient formula was employed to confirm reliability of the teacher questionnaire item 17. Data obtained from 29 sub-items of item 17 were calculated. The resultant reliability coefficient is 0.95 which satisfactorily ascertains the consistency of responses.

t-test was then applied to ascertain discrimination power of the teacher questionnaire in discriminating between positive and negative attitudes of informants. Information from sub-items 17.1-17.29 were calculated. It was found that 25 among 29 sub-items were proved having a statistically significant discrimination power at $p < .05$. However, four sub-items 17.13, 17.18, 17.19, 17.25 which obtained t-test value less than the significant level .05 were still kept for further analysis. This is because those four sub-items represented important aspects of factors and problems in Computer-Assisted Language Learning (CALL) implementation. Therefore, both positive and negative groups of respondents might have similar attitudes on these aspects.

Details of t-test results are shown in TABLE 2.

TABLE 2

Discrimination Power of Item 17 of the Questionnaire A

by Means of t-test

Sub-item	t
17.1 Using computers is complicated.	4.586*
17.2 Computers are probably not appropriate to language teaching and learning.	7.136*
17.3 CALL is not necessary because existing methods are good enough.	6.002*
17.4 CALL may help to enhance the effectiveness of English teaching and learning.	7.229*
17.5 You have not yet been confident in the effective- of CALL.	3.196*
17.6 Generally CALL should be worth investing.	7.030*
17.7 Investing in CALL might not be worthwhile.	7.296*
17.8 CALL will soon disappear.	7.741*
17.9 You are afraid that you will be disappointed in the effectiveness of CALL.	6.999*
17.10 Language laboratory is not as useful as expected.	4.019*
17.11 Existing CALL programs are not good enough.	3.850*
17.12 It is preferable to wait until better CALL programs are produced.	3.416*
17.13 You would like the administrator pay more attention to the matter of CALL.	-4.179
17.14 You think there must be a lot of computer equipments for the implementation of CALL.	3.100*
17.15 Ones who are not good at computers are probably unable to use CALL in their teaching and learning.	2.719*
17.16 CALL tends to be impossible due to the need of a great budget.	3.198*

N = 121

*$p < .05$ $(.05\ t_{26} = 2.056)$

TABLE 2 (Cont.)

Discrimination Power of Item 17 of the Questionnaire A

by Means of t-test

Sub-item	t
17.17 You would like to have the chance to participate in CALL training.	4.873*
17.18 There is not enough CALL training in Thailand.	0.281
17.19 Computers will one day replace human language teachers.	1.018
17.20 Students are presumably not interested in using CALL.	2.710*
17.21 Students will possibly be more interested in English if there is CALL.	6.193*
17.22 Computers probably help solve problems deriving from student's different pace of learning.	5.815*
17.23 Computers can presumably be used in teaching all the four skills; listening, speaking, reading, and writing.	4.707*
17.24 Computers should be effective if used in the teaching of listening.	2.203*
17.25 Computers should be effective if used in the teaching of speaking.	1.899
17.26 Computers should be effective if used in the teaching of reading.	5.592*
17.27 Computers should be effective if used in the teaching of writing.	4.733*
17.28 Computers are an interesting educational tool, they should be used.	6.854*
17.29 You are not yet interested in CALL because you are not fond of using computers.	4.659*

N = 121

*$p < .05$ ($.05$ $t_{26} = 2.056$)

Description of the Subjects of the Study

The demographic data of the two groups of respondents were obtained from items 1-5 and 8-10 of both sets of questionnaires. For the respondents of Questionnaire A who were English language teachers, it was found that the majority of them were female. It was indicated by an overwhelming number of 92.56% female while 7.44% were male. Concerning the period of time the respondents had taught English, most of them had taught English for 11-20 years (42.15%) followed by 1-10 years (38.02%) and more than 20 years (19.83%) respectively. The proportion of respondents who graduated with the Master's degree were 83.47%, and 79.34% of them had experienced study abroad. The amount of 72 English language teachers out of 121, representing 59.50%, had used computers in work. However, the results indicate that 89.26% of the respondents had planned to learn (more) how to use computers. Concerning computer games which became popular among Thai children and youths, it was found that 51.24% of the respondents had tried them. The significant figure of 95.87% of the subjects acknowledged the existence of CALL in other countries while 4.13% still had no knowledge of this.

The demographic data of respondent group A, English language teachers are presented in TABLE 3.

TABLE 3

Distribution of Teachers Responding to the Questionnaire A

According to Their Demographic Data

Demographic Data		Frequency	%
1. Gender			
1.1 Male		9	7.44
1.2 Female		112	92.56
	Total	121	100.00
2. Duration of English teaching			
2.1 1-10 years		46	38.02
2.2 11-20 years		51	42.15
2.3 more than 20 years		24	19.83
	Total	121	100.00
3. Educational degree			
3.1 Bachelor's Degree		6	4.96
3.2 Master's Degree		101	83.47
3.3 Doctor's Degree		13	10.74
3.4 Others		1	0.83
	Total	121	100.00
4. Experience studying abroad			
4.1 Yes		96	79.34
4.2 No		25	20.66
	Total	121	100.00
5. Experience using computers in work			
5.1 Yes		72	59.50
5.2 No		49	40.50
	Total	121	100.00
6. Future plan for learning/ or having additional study on how to use computers			
6.1 Yes		108	89.26
6.2 No		13	10.74
	Total	121	100.00
7. Experience playing computer games			
7.1 Yes		62	51.24
7.2 No		59	48.76
	Total	121	100.00
8 Acknowledgement of the existing of CALL in other countries			
8.1 Yes		116	95.87
8.2 No		5	4.13
	Total	121	100.00

N = 121

According to the information obtained from the Questionnaire B, it was noted that most of heads of English departments were also female. It was presented by 90.91% of the respondents. The biggest portion of 54.55% had taught English for 11-20 years. Further, 54.55% of them graduated with Master's degree while the rest of them graduated with Doctoral degree. All of them had experienced study abroad. Most of the respondents (90.91%) had used computers in work, however all revealed that they had a plan to begin/have an additional study on how to use computers. The number of subjects who had experience of playing computer games was 81.82%. Finally, all the heads of English departments acknowledged the existence of CALL in other countries.

The demographic data of the respondent group B, Department Heads, are presented in TABLE 4.

TABLE 4

Distribution of Heads of English Departments Responding to the Questionnaire B According to Their Demographic Data

Demographic Data	Frequency	%
1. Gender		
1.1 Male	1	9.09
1.2 Female	10	90.91
Total	11	100.00
2. Duration of English teaching		
2.1 1-10 years	2	18.18
2.2 11-20 years	6	54.55
2.3 more than 20 years	3	27.27
Total	11	100.00
3. Educational degree		
3.1 Bachelor's Degree	0	0.00
3.2 Master's Degree	6	54.55
3.3 Doctor's Degree	5	45.45
3.4 Others	0	0.00
Total	11	100.00
4. Experience studying abroad		
4.1 Yes	11	100.00
4.2 No	0	0.00
Total	11	100.00
5. Experience using computers in work		
5.1 Yes	10	90.91
5.2 No	1	9.09
Total	11	100.00
6. Future plan for learning/ or having additional study on how to use computers		
6.1 Yes	11	100.00
6.2 No	0	0.00
Total	11	100.00
7. Experience playing computer games		
7.1 Yes	9	81.82
7.2 No	2	18.18
Total	11	100.00
8 Acknowledgement of the existing of CALL in other countries		
8.1 Yes	11	100.00
8.2 No	0	0.00
Total	11	100.00

N = 11

Regarding TABLE 3, it was noted that 72 out of 121 English language teachers representing 59.50% had experienced the use of computers in work. Then the information obtained from item 6 of the Questionnaire A was relatively used to identify different types of computer programs generally used. In this item, four categories of programs were listed and the "Others (Please specify)" option was left open for respondents who wanted to specify any other type. The results indicate that word processor was the most popular type of computer program used (97.22%), followed by spreadsheet (37.50%), statistical programs (33.33%) and database (30.56%) respectively. However, none of the different category of programs was raised in an open-ended option. TABLE 5 distributes general types of computer programs used by English language teachers in a ranking order based on frequency of responses.

TABLE 5

Distribution of General Types of Computer Programs Used by Language Teachers

Types of Computer Programs	Frequency	%
1. Word Processor used for typing lessons and general paper works.	70	97.22
2. Spreadsheet programs used for calculating test marks.	27	37.50
3. Statistical programs used for analyzing research statistics.	24	33.33
4. Database programs used for data recording.	22	30.56

N = 72

Note : The respondents could choose more than one answer.

In relation to the result which was reported in TABLE 3, that 59.50% of English language teachers had experienced the use of computers, TABLE 6 further displays their attitudes towards the use of computers. The results were obtained from item 7 of Questionnaire A which asked the subjects who had used computers to indicate their attitudes deriving from their experiences. Six statements were listed, three negative and three positive, and an open-ended option was given for any other opinions.

The results reveal that almost all the respondents had positive attitudes towards computers after they had used them. Most of them agreed that using computers allowed them to work more quickly (97.22%). Also, 98.61% of the respondents found that using computers helped them work more effectively. In addition, 97.22% of teachers concluded that generally it was worth learning how to use computers. However, 29.17% still considered that learning how to use computers was complicated.

Details are shown in TABLE 6 as follows:

TABLE 6

Distribution of the Respondents' General Attitudes towards the Use of Computers Deriving from Their Experiences

Attitudes	Frequency	%
1. Negative		
1.1 There is no difference between working with and without computers.	1	1.39
1.2 Learning how to use computers is complicated.	21	29.17
1.3 Using computers makes you work more slowly owing to the waste of time spent in learning how to use computers.	2	2.78
2. Positive		
2.1 Using computers enables you to work more quickly.	70	97.22
2.2 Using computers enables you to work more effectively.	71	98.61
2.3 Learning how to use computers is worthwhile	70	97.22

N = 72

Next, the data obtained from item 12 of the Questionnaire A were analyzed to find out English language teachers' usage of educational tools. Five types of educational tools were listed and also an open-ended option was given for any other tools used. The respondents could choose more than one answer in this item. The results show that cassette player and recorders were used the most (85.12%). The ranking order of other tools employed were overhead projectors (72.73%), language laboratories (68.60%), video and televisions (56.20%), and computers (9.09%). In addition, some

respondents (17.36%) raised other tools they used in the open-ended option: slide projectors, pictures, word cards, flash cards, and diagrams. The number of 4.96% of the respondents did not mention any educational tools they had employed in their teaching.

TABLE 7 displays the usage of educational tools by English language teachers in a ranking order based on the amount of usage.

TABLE 7

Distribution of English Language Teachers' Usage of Educational Tools

Types of Educational Tools	Frequency	%
1. Cassette player and recorder	103	85.12
2. Overhead projector	88	72.73
3. Language laboratory	83	68.60
4. Video and television	68	56.20
5. Others	21	17.36
6. Computers	11	9.09
7. None is used	6	4.96

N = 121

Note : The respondents could choose more than one answer.

Research Question One : What is the current status of CALL in state universities in Thailand ? How many institutions have CALL in use for their English teaching and what role does it play ?

The information obtained from item 12 of the Heads of departments' questionnaire (Questionnaire B) was used to identify the percentage of universities integrating CALL in their English courses. The Heads of English Departments were asked to respond the Questionnaire B whether CALL had already been used in their institution. The information obtained from items 13 and 16 of the teacher questionnaire (Questionnaire A) was also used as supporting details. The results are shown in TABLE 8. Item 13 of the Questionnaire B was then used to analyze the role CALL contributed in the institution(s) that had already implemented CALL.

In addition, the information from items 14 and 15 of the Questionnaire A was used to describe the current status of teachers who had experience of CALL use. They asked the respondents whether they had used CALL before and where they had used CALL. The results are presented in TABLE 9.

Finding One

TABLE 8 shows that among the eleven universities from which the heads of English department returned the Questionnaire B, only one university (9.09%) had already incorporated CALL in its English courses. However, the information obtained from item 12 of the Questionnaire B together with items 13 and 16 of the teacher questionnaire reveals that all 14 universities had used computers in lesson preparation and grading.

TABLE 8

Distribution of Universities According to Incorporation of CALL in Their English Courses

Current Status	Frequency	%
Incorporation of CALL in its English courses		
- Yes	1	9.09
- No	10	90.91
Total	11	100.00

N = 11

Note : CALL includes any activities that allow students to use computers. It excludes using computers in the preparation of lessons, grading and other activities in which computers are used by teachers only.

From the sole university which had already incorporated CALL in its English courses, it was reported that CALL was used in three types of activities. The first activity was using the computer as an educational tool to enhance teaching and learning in regular classes. The second type of activity was providing the computer for students' self-access study out of their regular classes. The third activity was providing the computer for students who had particular weak points to have additional study as their remedial study. However, CALL was not treated as a requirement students had to carry out after the classroom time.

TABLE 9 reveals that only 14.05% of teachers experienced the use of CALL. Specifically, 9.09% used CALL at their present institutions while 4.96% had used CALL in other places before.

TABLE 9

Distribution of Teachers According to Their Experiences Using CALL

Current Status	Frequency	%
Teachers who have used CALL		
- at their present institution	11	9.09
- at other places	6	4.96
Total	17	14.05

N = 121

Note : CALL includes any activities that allow students to use computers. It excludes using computers in the preparation of lessons, grading and other activities in which computers are used by teachers only.

Research Question Two : What are problems in implementing CALL ?

This research question covered 9 aspects of teachers' attitudes that may affect the implementation of CALL according to related literature review. They were:

1. Technophobia
2. Skepticism of the effectiveness of CALL
3. Consideration of CALL as a fashion
4. Disappointment from the language laboratory era
5. Waiting for further development of CALL
6. Needs for support and training
7. Understanding of CALL's nature
8. Expectation of students' attitudes
9. Tendency to accept CALL

The teacher questionnaire (Questionnaire A) item 17 was designed with 30 sub-items so as to elicit the subjects' opinions towards the nine aspects. Information from sub-items 17.1-17.3 and 17.29 were used to answer aspect 1: technophobia, while sub-items 17.5, 17.7 and 17.9 were for aspect 2: skepticism of the effectiveness of CALL. The answer from sub-item 17.8 was used for aspect 3: consideration of CALL as a fashion, and 17.10 was for aspect 4: disappointment from the language laboratory era. Aspect 5: waiting for further development of CALL, was answered by information from sub-items 17.11-17.12. Aspect 6: needs for support and training was answered by sub-items 17.13, 17.17 and 17.18, and also supported by the information obtained from items 18 and 19 of Questionnaire A. The responses of sub-items 17.14-17.16 and 17.19 were used for aspect 7: understanding of CALL's nature. Sub-item 17.20 was designed for aspect 8: expectation of students' attitudes. Sub-items 17.22-17.28 were used to answer aspect 9: tendency to accept CALL. Finally, sub-item 30 was left open for any other points the respondents might wish to add.

The respondents were asked to express their attitudes by determining level of either agreement or disagreement towards given statements of the 29 sub-items. The data derived from this questionnaire item were then coded and calculated according to the following scale:

Strongly disagree	=	1
Mildly disagree	=	2
Disagree	=	3
Agree	=	4

Mildly agree = 5

Strongly agree = 6

The resulted mean score was then defined by using the following ranges:

0.5 - 1.4 = Strongly disagree

1.5 - 2.4 = Mildly disagree

2.5 - 3.4 = Disagree

3.5 - 4.4 = Agree

4.5 - 5.4 = Mildly agree

5.5 - 6.5 = Strongly agree

In addition, an open-ended question, item 18 of the Heads of departments' questionnaire (Questionnaire B), was also used to analyze this matter as well. The results of the nine aspects were reported in TABLE 10.

Finding Two

Aspect 1. The results reported in section 1 of TABLE 10 clearly indicate that the technophobia aspect was rejected. The mean scores of subjects' responses show their disagreement to all the four statements revealing technophobia. They were firstly asked whether they considered using computers was complicated or not. The mean score of answers to this question is 2.6 (disagree) with S.D. 1.06. Secondly, the mean score of answers to the question whether the respondents thought that computers were probably not appropriate to language teaching and learning, is 2.3 (disagree) with S.D. 1.07. Then, the respondents were asked whether they thought that CALL was not necessary because existing teaching methods were good enough. The mean

score of responses to this question is 2.5 (disagree) with S.D. 1.20. Finally, they were asked whether being not fond of using computers was the reason why they had not yet become interested in CALL. To this point, the result obviously reveals the respondents' disagreement. The mean score is 2.2 (mildly agree) with S.D. 1.22

Aspect 2. The section 2 of TABLE 10 indicates that aspect of skepticism of the effectiveness of CALL was also rejected. However, the figures show that the rejection was not as strong as that of aspect 1. The mean score to the question of whether the respondents were not yet confident in the effectiveness of CALL, is 3.4 (disagree) with S.D. 1.09. Next, the question whether the subjects thought that investing in CALL might not be worthwhile obtained the mean score of answers at 2.9 (disagree) with S.D. 1.20. Finally, the mean score of responses is 2.7 (disagree) with S.D. 1.16 for the last question to this point. It asked whether the respondents were afraid that they would be disappointed with the effectiveness of CALL or not.

Aspect 3. The information obtained from sub-item 17.8 was used to identify this point. The result which was shown in section 3 of TABLE 10 indicates that the respondents did not consider CALL as something fashionable. The mean score of answers to the statement that CALL would soon fade out is 2.3 (mildly disagree) with S.D. 1.10. Again, this point was rejected.

Aspect 4. The section 4 of TABLE 10 indicates that the respondents rejected the aspect of being disappointed from the language laboratory era. The mean score of responses to the question whether they thought that language laboratory was not as useful as expected,

is 2.7 (disagree) with S.D. 1.16. On the other hand, it could be assumed that they were satisfied with the benefits of the language laboratory. Therefore, this aspect is not one of problems in the implementation of CALL.

Aspect 5. The results of the two questions related to this aspect accordingly show that the respondents agree on this point. That is, they preferred waiting for further development in CALL. They were firstly asked whether they considered that existing CALL program were not good enough and secondly whether they preferred waiting until better CALL program were available. The mean scores of answers were 3.7 (agree) and 3.5 (agree) respectively, and S.D. are 0.90 for the former and 1.16 for the latter. Details were displayed in section 5 of TABLE 10.

Aspect 6. As reported in section 6 of TABLE 10, the respondents obviously agreed on this point. Their answers to the three questions of this aspect all agreed that they need support and training in CALL. The mean score of responses to the first question whether the subjects would like administrators to pay more attention to CALL or not, is 4.6 (mildly agree) with S.D. 1.11. Next, the second question whether they would like to have the chance to participate in CALL training obtained the mean score of answers at 4.9 (mildly agree) with S.D. 1.32. Finally, the mean score to the last question whether the respondents thought that there was not enough CALL training in Thailand, is 4.9 (mildly agree) with S.D. 1.15.

In addition the results analyzed from the information of items 18 and 19 of the Questionnaire A revealed that 47.11% of the

respondents acknowledged that there had already been CALL training in Thailand. However, only 10.74% of the respondents had participated in CALL seminar/ training. More specifically, 9.09% had attended the seminar/ training held in Thailand while 1.65% had participated in ones held abroad. The details are shown in TABLE 11.

Aspect 7. In order to answer this aspect about the respondents' understanding of CALL's nature, four questions were asked. The first question asked whether the subjects thought that there needed to be a lot of computer equipment for CALL implementation or not. The mean score of answers to this question is 4.1 (agree) with S.D. 1.29. Secondly, the respondents were asked whether they thought that those who were not good at computers would probably be unable to use CALL in their teaching and learning. The majority of respondents indicated their agreement to this by the mean score of responses at 3.6 (agree) with S.D. 1.41. Next, the subjects were asked whether they considered that CALL tended to be impossible due to the need of a great budget. The result reveals the respondents' agreement in this matter. The mean score of answers is 3.6 (agree) with S.D. 1.41. Lastly, the fourth question asked the respondents whether they thought that computers would one day replace human language teachers or not. Different from the others, the subjects rejected this idea. It was answered by the mean score at 2.3 (mildly disagree) with S.D. 1.41. Details were shown in the section 7 of TABLE 10.

Aspect 8. Concerning the expectation of students' attitudes towards CALL, the result shown in section 8 of TABLE 10 reveals that the respondents expected students to have positive attitudes to CALL. They rejected the statement that students were presumably not

interested in using CALL by the mean score of answers 2.3 (mildly disagree) with S.D. 1.24.

Aspect 9. In order to answer this last aspect about the respondents' tendency to accept CALL, seven different questions were asked. They began with the question of whether the subjects considered computers probably helped to solve problems deriving from students' different paces of learning ability. The respondents indicated their agreement to this point by the mean score 4.2 (agree) with S.D. 1.29. The next question was whether the respondents thought that computers could presumably be used in the teaching of all the four skills; listening, speaking, reading, and writing. The majority of answers rejected this. The respondents did not believe that computers would work in teaching all the four skills. The mean score of responses is 3.3 (disagree) with S.D. 1.39. The next four questions asked the subjects which skill they thought computers could be used in: listening, speaking, reading, or writing. The results reveal that it was believed that computers should be effective if used in teaching reading and writing. The mean scores of answers were 4.7 (mildly agree) and 4.3 (agree) with S.D. 1.20 and 1.33 respectively. In contrast, the results indicate that the respondents did not think that computers would be effective in the teaching of listening and speaking. The mean scores were 3.2 (disagree) and 2.7 (disagree) with S.D. 1.41 and 1.29 respectively. Then the subjects were finally asked whether they thought that computers were interesting educational tools which should be used more or not. The respondents showed their agreement to this point by the mean score 4.7 (mildly agree) with S.D.1.13. The results were reported in section 9 of TABLE 10.

TABLE 10

Distribution of Attitudes towards CALL Resulting in CALL Implementation

Levels of Agreement / Aspects	Strongly Disagree 1	2	3	4	5	Strongly Agree 6	$\bar{X}$ /S.D.
1. Technophobia							
1.1 Using computers is complicated.	23	29	45	21	3	0	2.6/1.06
1.2 Computers are probably not appropriate to language teaching and learning.	35	31	43	7	5	0	2.3/1.07
1.3 CALL is not necessary because existing teaching methods are good enough.	32	27	47	7	5	3	2.5/1.20
1.4 You are not yet interested in CALL because you are not fond of using computers.	47	27	37	3	3	4	2.2/1.23
2. Skepticism of the effectiveness							
2.1 You have not yet been confident in the effectiveness of CALL	7	13	46	39	12	4	3.4/1.09
2.2 Investing in CALL might not be worthwhile.	18	27	40	27	6	3	2.9/1.20
2.3 You are afraid that you will be disappointed in the effectiveness of CALL	24	28	43	19	6	1	2.7/1.16

N = 121

TABLE 10 (Cont.)

Distribution of Attitudes towards CALL Resulting in CALL Implementation

Levels of Agreement / Aspects	Strongly Disagree 1	2	3	4	5	Strongly Agree 6	$\bar{X}$ /S.D.
3. Consideration of CALL as a fashion							
3.1 CALL will soon disappear.	34	32	45	5	3	2	2.3/1.10
4. Disappointment from the language laboratory era							
4.1 Language lab is not as useful as expected.	16	24	40	26	9	6	2.7/1.16
5. Waiting for further development							
5.1 Existing CALL programs are not good enough.	0	9	41	52	15	4	3.7/0.90
5.2 It is preferable to wait until better CALL programs are available	6	18	36	42	13	6	3.5/1.16
6. Needs for support and training							
6.1 You would like the administrator to pay more attention to CALL	4	8	24	38	26	21	4.6/1.11
6.2 You would like to have the chance to participate in CALL training.	6	2	6	20	34	53	4.9/1.32
6.3 There is not enough CALL training in Thailand.	3	2	5	27	37	47	4.9/1.15

N = 121

TABLE 10 (Cont.)

Distribution of Attitudes towards CALL Resulting in CALL Implementation

Aspects \ Levels of Agreement	Strongly Disagree 1	2	3	4	5	Strongly Agree 6	$\bar{X}$ /S.D.
7. Understanding of CALL's nature							
7.1 There must be a lot of computer equipment for CALL implementation.	4	8	24	38	26	21	4.1/1.29
7.2 Those who are not good at computers are probably unable to use CALL in their teaching and learning.	9	16	34	35	16	11	3.6/1.33
7.3 CALL tends to be impossible due to the need of a great budget	6	23	33	28	14	17	3.6/1.41
7.4 Computers will one day replace human language teachers.	53	19	29	6	9	5	2.3/1.46
8. Expectation of students' attitudes							
8.1 Students are presumably not interested in using CALL.	42	25	41	5	5	3	2.3/1.24

N = 121

TABLE 10 (Cont.)

Distribution of Attitudes towards CALL Resulting in CALL Implementation

Levels of Agreement / Aspects	Strongly Disagree 1	2	3	4	5	Strongly Agree 6	$\bar{X}$ /S.D.
9. Tendency to accept CALL							
9.1 Computers probably help solving problems deriving from students different paces of learning ability.	4	7	22	41	23	24	4.2/1.29
9.2 Computers can presumably be used in the teaching of all the four skills; listening speaking, reading, and writing.	12	22	34	30	12	11	3.3/1.39
9.3 Computers should be effective if used in teaching listening.	19	19	32	30	14	7	3.2/1.41
9.4 Computers should be effective if used in teaching speaking.	25	28	37	19	9	3	2.7/1.29
9.5 Computers should be effective if used in teaching reading.	3	3	10	31	37	37	4.7/1.20
9.6 Computers should be effective if used in teaching writing.	5	7	19	33	32	25	4.3/1.33
9.7 Computers are interesting educational tools, they should be used more.	2	5	5	32	44	33	4.7/1.13

N = 121

TABLE 11

Distribution of Teachers According to Their Experiences Participating in CALL Seminar/ Training

The respondents' data	Frequency	%
1. Ones who had acknowledged that there had already been CALL seminar/ training in Thailand.	57	47.11
2. Ones who had participated CALL seminar/ training.	13	10.74
- In Thailand	11	9.09
- Abroad	2	1.65

N = 121

In conclusion of the finding two, it was found that the problems for implementing CALL in English language teachers' points of view are:

1. It is preferable to wait for further development in CALL.

2. More support and training on CALL are needed.

3. CALL's nature is not yet clear to language teachers. They are, for example: whether a lot of computer equipment is needed; those who can use CALL in their teaching and learning should be those who are keen at computers or not; and it seems impossible because CALL needs a great budget.

4. Computers are not believed to be effective for employment in the teaching of all the four skills.

The summary of the above mentioned attitudes affecting CALL implementation was displayed in TABLE 12.

TABLE 12

Summary of Respondents' Attitudes towards CALL

Affecting CALL Implementation

Levels of Agreement / Aspects	Strongly Disagree 1	2	3	4	5	Strongly Agree 6	$\bar{X}$ /S.D.
1. Waiting for further development							
1.1 Existing CALL programs are not good enough.	0	9	41	52	15	4	3.7/0.90
1.2 It is preferable to wait until better CALL programs are available	6	18	36	42	13	6	3.5/1.16
2. Needs for support and training							
2.1 You would like the administrator to pay more attention to CALL	4	8	24	38	26	21	4.6/1.11
2.2 You would like to have the chance to participate in CALL training.	6	2	6	20	34	53	4.9/1.32
2.3 There is not enough CALL training in Thailand.	3	2	5	27	37	47	4.9/1.15
3. Understanding of CALL's nature							
3.1 There must be a lot of computer equipment for CALL implementation.	4	8	24	38	26	21	4.1/1.29
3.2 Those who are not good at computers are probably unable to use CALL in their teaching and learning.	9	16	34	35	16	11	3.6/1.33

N = 121

TABLE 12 (Cont.)

Summary of Respondents' Attitudes towards CALL

Affecting CALL Implementation

Levels of Agreement / Aspects	Strongly Disagree 1	2	3	4	5	Strongly Agree 6	$\bar{X}$ /S.D.
3.3 CALL tends to be impossible due to the need of a great budget	6	23	33	28	14	17	3.6/1.41
4. Tendency to accept CALL							
4.1 Computers can presumbly be used in the teaching of all the four skills; listening speaking, reading, and writing.	12	22	34	30	12	11	3.3/1.39
4.2 Computers should be effective if used in teaching listening.	19	19	32	30	14	7	3.2/1.41
4.3 Computers should be effective if used in teaching speaking.	25	28	37	19	9	3	2.7/1.29

N = 121

In addition, the information derived from an open-ended question, item 18 of the Heads of departments' questionnaire (Questionnaire B), was also used to analyze this matter. From the results obtained, there were indications that the lack of budget, training, and manpower are important factors impeding CALL implementation. Further, some institutions mentioned that English departments were considered as less important. Therefore, this affected the budget allocation and development plan of the institution. The need for better and more appropriate software was raised as well.

Interestingly, the findings from the Department Heads were in accordance with those from teachers who answered the Questionnaire A.

Research Question Three : Does each state university have a future plan for CALL ? If it does, to what extent does it give the emphasis to, and make provision for CALL in the 7th National Development Plan of Thailand (1992-1996) ?

The information obtained from items 16 and 17 of the Heads of departments' questionnaire (Questionnaire B) was served to analyze for this research question.

Finding Three

It was found that all the respondents indicated that their institutions did have a plan to implement CALL. However, only the university that had already implemented CALL had the expansion plan for CALL in the 7th National Development Plan of Thailand. It had incorporated CALL in its resource center since 1990. At the time of the response, there were already fifteen personal computers and a number of CALL program in use, and additional CALL software were purchasing.

On the other hand, the others indicated that CALL was planned to be used, but would not carry it out in the 7th National Development Plan. An institution responded that, even though it had not had details for CALL during the 7th National Development Plan, it had begun (as a foundation) to purchase more computer equipment to be widely used in the Department. In addition, some responses revealed that they were in the preparation stage for CALL, some staff members of the English

Department had been assigned to study CALL. Most of the respondents mentioned that the budget of the institution seemed to be allocated to more necessary matters, for example: new building establishment, language laboratory renovation, and resource center establishment. The subject of limited budgets that English departments receive was raised by many respondents.

Research Question Four : What are recommendations for future implementation of CALL at the university level ?

In order to answer this research question, the information retrieved from the open-ended items 21 of the teacher questionnaire (Questionnaire A) and 18 of the Heads of departments' questionnaire (Questionnaire B) were together analyzed. These two questionnaire items invited the respondents to express their opinions and/or to give their suggestions towards CALL implementation at the university level as they might wish to. A total number of 83 out of 132 respondents of the two questionnaires, representing 62.88%, answered these two open-ended questions.

Finding Four

The results indicated that the first priority of recommendation given was the need for CALL training (42.17%). The reason mentioned was that there should be clear understanding in the nature of CALL before it could be properly used. The need for solving problem of budget limitation was the next suggestion proposed (24.10%). Other recommendations, ranked according to the frequency count, were: CALL should be used for self-access study and for remedial study only (16.87%), there should be cooperation in developing and purchasing

appropriate CALL software (14.46%); administrators should pay more attention to the matter of educational tools including CALL (9.64%); a CALL center should be established in order to act as a focal point for information service, public relations, and experience sharing (9.64%); preliminary research should be conducted to justify both advantages and disadvantages of CALL before implementation (6.02%); CALL should be rejected because it was too expensive(4.83%); and finally, CALL was not suitable for certain situations (2.41%). TABLE 13 displays the distribution of the respondents' recommendations towards CALL.

TABLE 13

Distribution of Respondents' Recommendations

towards CALL Implementation at the University Level

Recommendations	Frequency	%
1. CALL training is needed for manpower development and for better understandings of CALL's nature.	35	42.17
2. A problem about limitations of budget must be solved first.	20	24.10
3. CALL should be used for self-access study and for remedial study only.	14	16.87
4. There should be cooperation in developing and purchasing appropriate CALL software.	12	14.46
5. The administrator should pay more attention to the matter of educational tools including CALL	8	9.64
6. A CALL center should be established in order to act as a focal point for information service, public relations, and experience sharing.	8	9.64
7. Preliminary research should be conducted to justify both advantage and disadvantage of CALL before implement.	5	6.02
8. CALL should be rejected because it is too expensive.	4	4.82
9. CALL is not suited to certain situations.	2	2.41

N = 83

Note : The respondents may express their opinions and/or suggestions more than one aspect.

CHAPTER V

SUGGESTIONS FOR IMPLICATIONS AND RECOMMENDATIONS FOR FURTHER STUDIES

This study investigated the status of, problems in the adoption of and recommendations for future implementation of Computer-Assisted Language Learning (CALL) in state universities in Thailand. Following Chapter Four which presents the findings of the present study, Chapter Five deals with suggestions for implications and recommendations for further studies.

Suggestions for Implications

On the basis of the findings of the present study revealed in Chapter Four, the following suggestions for the preparation of CALL implementation at the university level are proposed:

1. The information obtained from this study indicated that the majority of teachers (91.74%) agree that there is not enough CALL training in Thailand. In addition, 88.43% of them obviously show their desire to participate in CALL training. Therefore, it might be reasonable for the authority to arrange CALL seminars or training as a preparation for CALL implementation. Since the findings also show that a lot of teachers are still unclear about CALL's nature and its roles, CALL training should include the following contents: CALL's nature; how to integrate it into language classes; how to manage it if there are only one or few computers available; types of activities for each language skill practice. Moreover, it seems possible to approach

computer sellers for cooperation in providing more computer equipment during training.

2. Apart from the need for CALL training, many teachers seemed to need more support, in terms of both budget and policy, from the administrator. Therefore, if CALL is considered worth implementing, the authority must respond to teachers' needs by providing a budget allocation for CALL, and opportunities for them to get more information such as from CALL training and sample CALL materials. At the beginning stage when the English department does not have (enough) computer equipments for its own use, it seems possible that the authority should provide cooperation from the institution's computer center. The computer center may include CALL software for students to use for their self-access study. Cooperation between the English department and the computer center should be made in CALL software purchasing, managing, and even developing.

3. Budget seemed to be an important factor for CALL implementation in many teacher's opinions2. Budget inadequacy resulted in the lack of adequate computer hardware and CALL software. A finding of the present study to the research question three indicates that all fourteen institutions participating in this study do have a future plan to implement CALL. It is, therefore, recommended that establishing cooperation among institutions in developing, purchasing, and sharing CALL software for their mutual benefits be made. This seems to be a solution to the problem of budget inadequacy. Further, a CALL center in Thailand should be established by cooperation among educational institutions to act as a focal point for information service, public relations, and experience sharing. The sole university that already

has CALL in use could play an important role in this cooperation. In addition, teachers should acknowledge the possibility of using a single computer or few computers for CALL activities.

Recommendations for Further Studies

The present study was carried out by pursuing information and attitudes towards CALL from the point of view of English language teachers in state universities. Since teaching and learning concerns two parties: teachers and learners, it may be interesting to do a parallel study using state university students as the resource of information for the same matter. The results of the parallel study on the attitudes towards and needs for CALL from the point of view of learners can then be compared to the findings of this study in terms of agreement or disagreement.

Further, since the findings of the present study indicate that CALL training is greatly desirable if CALL will be implemented, library research about a proposed CALL training program is another possibility recommended. It should cover important aspects about CALL, for example, CALL's nature, components, factors, and application in terms of the Thai situation. The proposed training program is expected to be useful if an institution wishes to implement CALL in the future.

Moreover, as the present study was limited to state universities only, other studies may find it interesting to conduct a parallel study in private universities or at a different educational level. The results then can be compared to the findings of this study in terms of consistency and inconsistency.

BIBLIOGRAPHY

Ahmad, K., Corbett, G., Rogers, M., and Sussex, R. 1985. Computers, Language Learning and Language Teaching. New York: Cambridge University Press.

Allan, M., Cook, J. 1990. "Preparing for Interactive Media". IATEFL Newsletter 108, 5-6.

Best, J. W. 1981. Research in Education (4th ed.). Englewood Cliffs, New Jersey: Prentice-Hall.

Bose, M.N.K. 1990. "CALLindia: An Experiment in Teacher Training". MUESLI News June, 17-18.

Carrier, M. 1987. "Computer Assisted Language Learning". ELT Journal 41, 51-52.

Carvalho, J. M. 1991. "Project MINERVA: Past, Present, and Future. MUESLI News October, 3-7.

Daud, N. M. 1990. "Telita: Videotext Resource for Business English". MUESLI News June, 10-11.

Dawson, M. N. 1990. "Creating Lessons on a Word Processor". Practical English Teaching 11 No.2, 51-52.

Dhaif, H. 1989. "Can Computers Teach Langauges ?". ETF 27(3), 17-20.

Drabble, G. 1987. "Writing Mutiple-Choice Exercises for the Computer". GL. 9(1), 74-78.

Dunkel, P. 1987. "Computer-Assisted Instruction (CAI) and Computer-Assisted Language Learning (CALL): Past Dilemmas and Future Prospects for Audible Call". MLJ. 71, 250-259.

Fitzgerald, H. A Comparison of Two Methods for Teaching Expository Writing to Fourth-Grade Students: Computer-Assisted Language Experience Approach Versus Traditional Textbook Approach (Writing). Dissertation Abstract International 51, 02A (1989): 397.

Higgins, J., Johns, T. 1984. Computers in Language Learning. London: Collins ELT.

Higgins, J. 1987. "Artificial Unintelligence: Computer Uses in Language Learning". TESOL 21, 159-165.

Hoffman, J. T. Reading Achievement and Attitude Toward Reading of Elementary Students Receiving Supplementary Computer Assisted Instruction Compared with Students Receiving Supplementary Traditional Instruction. Dissertation Abstract International 45, 7 (1985): 2050-A.

Hult, C. 1990. "Expanded Role for Computers in Writing Research Papers and Reports". Teaching English in the Two-Year College 17(2), 114-119.

Jamieson, J. 1987. "Working Styles on Computer as Evidence of Second Language Learning Strategies". LL 37, 523-527.

Jones, C., Fortescue, S. 1987. Using Computers in the Language Classroom. Essex: Longman Group UK Limited.

Jun, H. 1987. "A Video and Computer-Aided Course". ELT Journal 41, 37.

Kecinmam, H. 1987. "The Effect of Computer-Assisted Instruction on ESL Reading Acheivement". MLJ 71, 267-276.

Kenning, J., Kenning, M. 1983. An Introduction to Computer Assisted Language Teaching. Oxford: Oxford University Press.

Komarakul Na Nagara, S. & Woodhead, R. E. "Using Technology to Develop Oratory Skills". Bangkok Post. (July 29, 1992). Post Database Section: 9.

Komarakul Na Nagara, S. & Woodhead, R. E. "Touring Resource Centres Here-ISB's Media Lab". Bangkok Post. (August 26, 1992). Post Database Section: 9.

Komarakul Na Nagara, S. & Woodhead, R. E. "All Main Features at CULI Centre". Bangkok Post. (September 30, 1992). Post Database Section: 6.

Krejcie, R. V. and D. W. Morgan. 1970. "Determining Sample Size for Research Activities". Educational and Psychological Measurement. 30: 607-610.

Marcus, S. 1990. "Computers in the Language Arts: From Pioneers to settlers". Language Arts 67 (5), 519-524.

McGreal, R. 1988. "Computer-Assisted Instruction: Non-human but not Inhuman". ETF 26(3), 15-19.

Meskill, C. J. The Exploratory Mode in Computer-Assisted Language Learning: The Study of an Application for Students of English as a Second language Using the Interactive Video Medium. Dissertation Abstract International 49, 4A (1988): 717.

Moore, C. 1990. "EUROCALL 1990". MUESLI News October, 5.

Murray, D. 1988. "Computer-Mediated Communication: Implications for ESP". ESP 7, 3-8.

Nyans, R. 1988. "Using Computers to Teach Reading Comprehension". ELT Journal 42, 253-260.

Palmberg, R. 1988. "Computer Games and Foreign Language Vocabulary Learning". ELT Journal 42, 247-252.

Pongpun, A. 1987. A Survey of Current Uses of and Educator's Attitudes towards Computer Assisted Language Learning in Terms of the Present Status and Its Future Implications. Master's Thesis of Linguistics. Mahidol University.

Schwartz, M. Anxiety in the Language Classroom and Computer-Assisted Language Learning. Dissertation Abstract International 50, 02A (1988): 434.

Stern, H. 1983. Fundamental Concepts of Language Teaching. Oxford: Oxford University Press.

Tutunis, B. 1990. "CALL/CAI Research in Progress". IATEFL Newsletter 108, 6.

Ward, P. L. A Comparison of Computer-Assisted and Traditional Drill and Practice on Elementary Students' Vocabulary Knowledge and Attitude toward Reading Instruction. Dissertation Abstract International 47, 8 (1987): 2977-A.

บรรณานุกรม

บุญธรรม กิจปรีดาบริสุทธิ์. 2531. ระเบียบวิธีวิจัยทางสังคมศาสตร์. กรุงเทพมหานคร. มหาวิทยาลัยมหิดล

ประคอง กรรณสูต. 2528. สถิติเพื่อการวิจัยทางพฤติกรรมศาสตร์ (ฉบับปรับปรุงแก้ไข). กรุงเทพมหานคร : จุฬาลงกรณ์มหาวิทยาลัย.

รวีวรรณ ชินะตระกูล. 2533. คู่มือการทำวิจัยทางการศึกษา. กรุงเทพมหานคร. สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง.

สุภาพ วาดเขียน. 2525. เครื่องมือวิจัยทางสังคมศาสตร์ ลักษณะที่ดี ชนิด และวิธีหาคุณภาพ. ไทยวัฒนาพานิช. กรุงเทพมหานคร.

อุทุมพร จามรมาน. 2530. แบบสอบถาม: การสร้างและการใช้. กรุงเทพมหานคร. จุฬาลงกรณ์มหาวิทยาลัย.

APPENDIX A

==========

แบบสอบถาม

เรื่อง การสำรวจสถานภาพปัจจุบัน อุปสรรค และข้อเสนอแนะ

ในการนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษาอังกฤษในมหาวิทยาลัยของรัฐ

คำชี้แจง : จุดมุ่งหมายของแบบสอบถามนี้ เพื่อสำรวจสถานภาพปัจจุบัน อุปสรรค และแนวโน้มของการนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษาอังกฤษในมหาวิทยาลัยของรัฐ จากทัศนคติของอาจารย์ผู้สอนภาษาอังกฤษ ซึ่งจะนำไปสู่ข้อเสนอแนะในการนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษาอังกฤษในภายภาคหน้า อนึ่ง ความรู้เรื่องคอมพิวเตอร์มิใช่สิ่งจำเป็นในการตอบแบบสอบถามนี้ ทัศนคติและความคิดเห็นที่แท้จริง ที่อาจารย์แต่ละท่านมีต่อแนวความคิดในการที่จะนำคอมพิวเตอร์มาช่วยในการเรียนการสอนภาษาอังกฤษคือจุดประสงค์สำคัญของแบบสอบถาม

แบบสอบถามฉบับนี้เป็นส่วนหนึ่งของการทำวิทยานิพนธ์ ในหลักสูตรศิลปศาสตร์มหาบัณฑิต สาขาวิชาภาษาศาสตร์ประยุกต์ มหาวิทยาลัยมหิดล คำตอบและความคิดเห็นของท่านเป็นสิ่งสำคัญมากที่จะช่วยให้การศึกษาครั้งนี้ประสบผลสำเร็จ โปรดตอบทุกข้อตามความเป็นจริง คำตอบของท่านจะเก็บไว้เป็นความลับและใช้เฉพาะการศึกษานี้เท่านั้น

==========

ตอนที่ 1 ข้อมูลเกี่ยวกับตัวผู้ตอบแบบสอบถาม

คำชี้แจง โปรดตอบแบบสอบถามต่อไปนี้ โดยทำเครื่องหมาย ✓ ลงใน ¦___¦ หน้าข้อความที่เป็นจริง และกรอกข้อความในช่องว่างที่กำหนดให้

1. เพศ ¦___¦ ชาย ¦___¦ หญิง

2. ท่านสอนภาษาอังกฤษมานานกี่ปี .....

3. วุฒิการศึกษาสูงสุดของท่าน ¦___¦ ปริญญาตรี
¦___¦ ปริญญาโท
¦___¦ ปริญญาเอก
¦___¦ อื่น ๆ (โปรดระบุ).....

4. ท่านเคยไปศึกษาต่างประเทศ ¦___¦ ใช่ ¦___¦ ไม่ใช่

5. ท่านเคยใช้คอมพิวเตอร์ช่วยในการทำงาน ¦___¦ ใช่ ¦___¦ ไม่ใช่

ถ้าท่านตอบว่า "ไม่ใช่" ในข้อ 5 โปรดข้ามข้อ 6 - 7 ไปตอบข้อ 8 ต่อไป

6. ท่านเคยใช้คอมพิวเตอร์ช่วยในการทำงาน ในรูปแบบใดบ้าง ดังต่อไปนี้

6.1 ใช้โปรแกรมประเภท Word Processor พิมพ์บทเรียน หรืองานทั่ว ๆไป ¦___¦ ใช่ ¦___¦ ไม่ใช่

6.2 ใช้โปรแกรมประเภทคำนวณเพื่อคำนวณคะแนนสอบ ¦___¦ ใช่ ¦___¦ ไม่ใช่

6.3 ใช้โปรแกรมประเภทฐานข้อมูล (Data Base) เก็บข้อมูล ¦___¦ ใช่ ¦___¦ ไม่ใช่

6.4 ใช้โปรแกรมประเภทคำนวณหาค่าสถิติในการวิจัย ¦___¦ ใช่ ¦___¦ ไม่ใช่

6.5 อื่น ๆ (โปรดระบุ).....
.....

7. จากการที่ท่านใช้คอมพิวเตอร์ช่วยในการทำงาน ท่านพบว่า

7.1 ไม่มีความแตกต่างจากการทำงานปกติโดยไม่ใช้เครื่องคอมพิวเตอร์ ¦___¦ ใช่ ¦___¦ ไม่ใช่

7.2 การเรียนรู้การใช้คอมพิวเตอร์เป็นเรื่องยุ่งยาก ¦___¦ ใช่ ¦___¦ ไม่ใช่

7.3 การใช้คอมพิวเตอร์ช่วย ทำให้ทำงานได้เร็วขึ้น ¦___¦ ใช่ ¦___¦ ไม่ใช่

7.4 การใช้คอมพิวเตอร์ช่วย ทำให้ทำงานมีประสิทธิภาพมากขึ้น ¦___¦ ใช่ ¦___¦ ไม่ใช่

7.5 การใช้คอมพิวเตอร์ช่วย ทำให้ทำงานได้ช้าลง เพราะต้องเสียเวลาในการเรียนรู้ ¦___¦ ใช่ ¦___¦ ไม่ใช่

7.6 โดยรวมแล้วการเรียนรู้การใช้คอมพิวเตอร์นั้นคุ้มค่า ¦___¦ ใช่ ¦___¦ ไม่ใช่

7.7 อื่น ๆ (โปรดระบุ).....
.....

8. ท่านคิดจะเรียนรู้การใช้คอมพิวเตอร์ หรือเรียนเพิ่มเติม ในอนาคต ¦___¦ ใช่ ¦___¦ ไม่ใช่

9. ท่านเคยใช้คอมพิวเตอร์เล่นเกมส์ ¦___¦ ใช่ ¦___¦ ไม่ใช่

10. ท่านเคยทราบมาว่าในต่างประเทศมีการนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษา (Computer-Assisted Language Learning : CALL) แล้ว ¦___¦ ใช่ ¦___¦ ไม่ใช่

11. เท่าที่ท่านทราบ อาจารย์ในสถาบันเดียวกับท่านที่มีความสนใจเรื่องการนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษา คือ.....
.....

<u>ตอนที่ 2</u> ข้อมูลเกี่ยวกับสถานภาพการนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษาอังกฤษในสถาบันที่ผู้ตอบแบบสอบถามสังกัด และความคิดเห็นของผู้ตอบแบบสอบถาม

<u>คำชี้แจง</u> โปรดตอบแบบสอบถามต่อไปนี้ โดยทำเครื่องหมาย ✓ ลงใน ¦___¦ หน้าข้อความที่เป็นจริง และกรอกข้อความในช่องว่างที่กำหนดให้

12. โดยปกติแล้ว การสอนภาษาอังกฤษในชั้นเรียนของท่าน มีการใช้อุปกรณ์ประกอบการเรียนการสอนดังต่อไปนี้หรือไม่ และหากมีการใช้ มีปริมาณมากน้อยเพียงใด (1 คาบ = 50 นาที โดยประมาณ)

12.1 ใช้ Overhead Projector ประกอบการสอน ¦___¦ ใช่ ¦___¦ ไม่ใช่
(ถ้าใช่ โปรดระบุปริมาณการใช้<u>ต่อสัปดาห์</u>โดยประมาณ ใช้.....คาบ จากเวลาเรียนทั้งหมด.....คาบ)

12.2 ใช้เครื่องเล่นเทปบันทึกเสียงประกอบการสอน ¦___¦ ใช่ ¦___¦ ไม่ใช่
(ถ้าใช่ โปรดระบุปริมาณการใช้<u>ต่อสัปดาห์</u>โดยประมาณ ใช้.....คาบ จากเวลาเรียนทั้งหมด.....คาบ)

12.3 ใช้วิดีโอและโทรทัศน์ประกอบการสอน ¦___¦ ใช่ ¦___¦ ไม่ใช่

(ถ้าใช่ โปรดระบุปริมาณการใช้ต่อสัปดาห์โดยประมาณ ใช้.....คาบ จากเวลาเรียนทั้งหมด.....คาบ)

12.4 ใช้ห้องปฏิบัติการทางภาษาในการสอน ¦___¦ ใช่ ¦___¦ ไม่ใช่

(ถ้าใช่ โปรดระบุปริมาณการใช้ต่อสัปดาห์โดยประมาณ ใช้.....คาบ จากเวลาเรียนทั้งหมด.....คาบ)

12.5 ใช้ คอมพิวเตอร์ ประกอบการสอน ¦___¦ ใช่ ¦___¦ ไม่ใช่

(ถ้าใช่ โปรดระบุปริมาณการใช้ต่อสัปดาห์โดยประมาณ ใช้.....คาบ จากเวลาเรียนทั้งหมด.....คาบ)

12.6 ใช้อุปกรณ์อื่น ๆ ประกอบ (โปรดระบุ).....
.....

(โปรดระบุปริมาณการใช้ต่อสัปดาห์โดยประมาณ ใช้....คาบ จากเวลาเรียนทั้งหมด .....คาบ)

13. ในหน่วยงานของท่าน มีการนำคอมพิวเตอร์มาใช้เป็นส่วนประกอบเพื่อช่วยการเรียนการสอนภาษาอังกฤษบ้างแล้ว ¦___¦ ใช่ ¦___¦ ไม่ใช่

14. ท่านเป็นผู้หนึ่งที่เคยใช้โปรแกรมคอมพิวเตอร์ช่วยการเรียนการสอนภาษาอังกฤษ (ไม่ว่าจะในรูปแบบใดก็ตาม) ¦___¦ ใช่ ¦___¦ ไม่ใช่

ถ้าท่านตอบว่า "ใช่" โปรดยกตัวอย่างชื่อโปรแกรมช่วยสอนภาษาที่ท่านเคยใช้.....
.....

ถ้าท่านตอบว่า "ไม่ใช่" ในข้อ 14 โปรดข้ามข้อ 15 - 16 ไปตอบข้อ 17 ต่อไป

15. ท่านใช้โปรแกรมคอมพิวเตอร์ช่วยสอนภาษาที่หน่วยงานปัจจุบันของท่าน ¦___¦ ใช่ ¦___¦ ไม่ใช่

ถ้าท่านตอบว่า "ไม่ใช่" โปรดระบุสถานที่ ที่ท่านเคยใช้โปรแกรมคอมพิวเตอร์ช่วยสอนภาษา
.....

16. การใช้คอมพิวเตอร์ช่วยการเรียนการสอนภาษาอังกฤษของท่าน ทำในรูปแบบใดบ้าง ดังต่อไปนี้

16.1 ใช้เป็นอุปกรณ์อย่างหนึ่งที่ช่วยเสริมการเรียนการสอนในชั้นเรียนปกติ ในลักษณะเดียวกับเครื่องเล่นเทป เครื่องเล่นวิดีโอ เป็นต้น ¦___¦ ใช่ ¦___¦ ไม่ใช่

16.2 จัดให้นักศึกษาใช้เรียนรู้ด้วยตนเอง ตามความต้องการเฉพาะคน (Self-access study) ¦___¦ ใช่ ¦___¦ ไม่ใช่

16.3 ใช้เป็นบทเรียนซ่อมเสริมนอกชั้นเรียนปกติ สำหรับนักศึกษาที่มีจุดอ่อนเฉพาะเรื่อง (Remedial study) ¦___¦ ใช่ ¦___¦ ไม่ใช่

16.4 กำหนดเป็นกิจกรรมเสริมบทเรียนที่นักศึกษาต้องทำนอกชั้นเรียนปกติ ¦___¦ ใช่ ¦___¦ ไม่ใช่

16.5 อื่น ๆ (โปรดระบุ).....

17. โปรดทำเครื่องหมายวงกลม ○ ล้อมรอบหมายเลขใดหมายเลขหนึ่งสำหรับแต่ละข้อย่อยต่อไปนี้ <u>เพื่อแสดงระดับความคิดเห็นของท่านเกี่ยวกับการใช้คอมพิวเตอร์ช่วยสอนภาษา</u> โดยที่หมายเลขแต่ละตัวแสดงระดับความคิดเห็นของท่าน ดังนี้

1 = ไม่เห็นด้วยอย่างมากที่สุด 2 = ไม่เห็นด้วยอย่างมาก 3 = ไม่เห็นด้วย
4 = เห็นด้วย 5 = เห็นด้วยอย่างมาก 6 = เห็นด้วยอย่างมากที่สุด

		ไม่เห็นด้วยอย่างมากที่สุด					เห็นด้วยอย่างมากที่สุด
17.1	การใช้คอมพิวเตอร์เป็นเรื่องยุ่งยาก	1	2	3	4	5	6
17.2	คอมพิวเตอร์ไม่น่าจะเหมาะต่อการสอนภาษา	1	2	3	4	5	6
17.3	การใช้คอมพิวเตอร์ช่วยสอน ไม่มีความจำเป็นเพราะการสอนด้วยวิธีเดิมดีแล้ว	1	2	3	4	5	6
17.4	การใช้คอมพิวเตอร์ช่วยสอนน่าจะช่วยให้การเรียนการสอนภาษาอังกฤษได้ผลดีขึ้น	1	2	3	4	5	6
17.5	ท่านยังไม่มั่นใจในประสิทธิภาพของการใช้คอมพิวเตอร์ช่วยสอน	1	2	3	4	5	6

	ไม่เห็นด้วยอย่างมากที่สุด					เห็นด้วยอย่างมากที่สุด
17.6 การนำคอมพิวเตอร์มาช่วยสอนนั้นโดยรวมแล้วน่าจะคุ้มค่าต่อการลงทุน	1	2	3	4	5	6
17.7 การนำคอมพิวเตอร์มาช่วยสอนคงไม่ได้ผลคุ้มค่าต่อการลงทุน	1	2	3	4	5	6
17.8 การใช้คอมพิวเตอร์ช่วยสอนนี้ คงจะหมดความนิยมลงไปในไม่ช้า	1	2	3	4	5	6
17.9 ท่านเกรงจะผิดหวังในประสิทธิภาพของการใช้คอมพิวเตอร์ช่วยสอน	1	2	3	4	5	6
17.10 ห้องปฏิบัติการทางภาษา (Language Laboratory) ไม่ได้ประโยชน์เท่าที่คาดกันไว้ในตอนต้น	1	2	3	4	5	6
17.11 โปรแกรมคอมพิวเตอร์ (Software) ช่วยสอนภาษาที่มีอยู่ยังไม่ดีพอ	1	2	3	4	5	6
17.12 ควรรอให้มีการพัฒนาโปรแกรมคอมพิวเตอร์ (Software) เพื่อจุดประสงค์นี้ให้ดีกว่าปัจจุบันเสียก่อน จึงจะนำมาใช้ช่วยสอน	1	2	3	4	5	6
17.13 ท่านต้องการให้ผู้บริหารสนับสนุนเรื่องนี้ให้มากขึ้น	1	2	3	4	5	6
17.14 การใช้คอมพิวเตอร์ช่วยสอนนั้นต้องการอุปกรณ์คอมพิวเตอร์จำนวนมาก จึงจะใช้งานได้	1	2	3	4	5	6
17.15 ถ้าใช้คอมพิวเตอร์ไม่เก่งคงจะนำมาใช้ช่วยสอนไม่ได้	1	2	3	4	5	6
17.16 การนำคอมพิวเตอร์มาช่วยสอนนั้นคงเป็นไปไม่ได้เนื่องจากต้องลงทุนมาก	1	2	3	4	5	6
17.17 ท่านต้องการเข้ารับการฝึกอบรมเกี่ยวกับเรื่องนี้	1	2	3	4	5	6
17.18 ในประเทศไทยยังมีการฝึกอบรมเรื่องนี้น้อยเกินไป	1	2	3	4	5	6

		ไม่เห็นด้วยอย่างมากที่สุด					เห็นด้วยอย่างมากที่สุด
17.19	สักวันหนึ่งคอมพิวเตอร์จะแทนที่ครูสอนภาษาอังกฤษได้	1	2	3	4	5	6
17.20	นักศึกษาคงไม่สนใจจะใช้	1	2	3	4	5	6
17.21	นักศึกษาน่าจะสนใจเรียนภาษาอังกฤษมากขึ้นถ้ามีคอมพิวเตอร์ช่วยสอน	1	2	3	4	5	6
17.22	การใช้คอมพิวเตอร์น่าจะช่วยแก้ปัญหาความแตกต่างของความสามารถในการเรียนรู้ของนักศึกษาได้	1	2	3	4	5	6
17.23	คอมพิวเตอร์น่าจะใช้ได้กับการสอนภาษาทั้ง 4 ทักษะ คือ ฟัง พูด อ่าน เขียน	1	2	3	4	5	6
17.24	คอมพิวเตอร์น่าจะใช้ได้ดีกับการสอนทักษะการฟัง	1	2	3	4	5	6
17.25	คอมพิวเตอร์น่าจะใช้ได้ดีกับการสอนทักษะการพูด	1	2	3	4	5	6
17.26	คอมพิวเตอร์น่าจะใช้ได้ดีกับการสอนทักษะการอ่าน	1	2	3	4	5	6
17.27	คอมพิวเตอร์น่าจะใช้ได้ดีกับการสอนทักษะการเขียน	1	2	3	4	5	6
17.28	คอมพิวเตอร์เป็นเครื่องมือช่วยสอนที่น่าสนใจควรนำมาใช้	1	2	3	4	5	6
17.29	ท่านยังไม่สนใจจะใช้ เพราะไม่ชอบใช้คอมพิวเตอร์	1	2	3	4	5	6
17.30	อื่น ๆ (โปรดระบุ).....						
	.....						

18. ท่านเคยทราบมาว่า มีการจัดฝึกอบรมเกี่ยวกับการนำคอมพิวเตอร์มาช่วยในการเรียนการสอนภาษาอังกฤษในประเทศไทยบ้างแล้ว ¦___¦ ใช่ ¦___¦ ไม่ใช่

19. ท่านเคยเข้าร่วมการฝึกอบรมเกี่ยวกับการนำคอมพิวเตอร์มาช่วยในการเรียนการสอนภาษาอังกฤษบ้างแล้ว (ทั้งในประเทศ หรือต่างประเทศ) ¦___¦ ใช่ ¦___¦ ไม่ใช่

ถ้าท่านตอบว่า "ใช่" โปรดระบุสถาบันที่เป็นผู้จัด และปีที่จัด.....
.....

ถ้าท่านตอบว่า "ไม่ใช่" ในข้อ 19 โปรดข้ามข้อ 20 ไปตอบข้อ 21 ต่อไป

20. โปรดแสดงความคิดเห็น และ/หรือ ข้อเสนอแนะใด ๆ ที่ท่านมีต่อการฝึกอบรมดังกล่าวในข้อ 19
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

21. โปรดแสดงความคิดเห็น และ/หรือ ข้อเสนอแนะใด ๆ ตามต้องการเกี่ยวกับการนำคอมพิวเตอร์มาช่วยในการเรียนการสอนภาษาอังกฤษในระดับมหาวิทยาลัย

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

จบแบบสอบถาม ขอขอบพระคุณอย่างยิ่งในความร่วมมือของท่านไว้ ณ โอกาสนี้

(Translation of the Questionnaire Form A)

==========

The Questionnaire on

An Investigation of the Current Status, Problems,

and Recommendations for Future Implementation of

Computer-Assisted Language Learning (CALL)

in State Universities in Thailand

Objectives : This questionnaire intends to investigate the current status, problems, and trend of Computer-Assisted Language Learning (CALL) implementation in state universities in Thailand. The results are expected to lead to recommendations for CALL implementation in the future. However, knowledge in computers is not necessary in responding the questionnaire. Each teacher's prompt attitudes and opinions towards CALL are extremely useful to the study.

This study is a part of the Master Degree Thesis in Applied Linguistics Program at Mahidol University. Your responses are essential to the success of this study. Please answer every question promptly. Your responses will be treated confidentially and served only this study.

==========

Part I Information about the Respondent of the Questionnaire

Direction Please answer the following questions by marking ✓ in the ¦__¦ in front of the true answer and /or write your answer in the space provided.

1. Gender ¦__¦ Male ¦__¦ Female

2. You have taught English for .....years

3. Your highest educational degree is ¦__¦ Bachelor Degree
¦__¦ Master Degree
¦__¦ Doctoral Degree
¦__¦ Others (Please specify).....

4. Had you studied abroad ? ¦__¦ Yes ¦__¦ No

5. Have you ever used computers in your work? ¦__¦ Yes ¦__¦ No

If you answered "No" in item 5, please skip item 6-7 to answer item 8.

6. You have used computers in the following types of work.

6.1 Using word processor programs to type lessons and general documents ¦__¦ Yes ¦__¦ No

6.2 Using computer programs to calculate test marks ¦__¦ Yes ¦__¦ No

6.3 Using database programs to record data ¦__¦ Yes ¦__¦ No

6.4 Using statistical programs to analyze research statistics ¦__¦ Yes ¦__¦ No

6.5 Others (Please specify) .....
.....

7. As you experienced using computers in your work, you found that

7.1 There is no difference between working with and without computers. ¦__¦ Yes ¦__¦ No

7.2 Learning how to use computers is complicated. ¦__¦ Yes ¦__¦ No

7.3 Using computers enables you to work more quickly. ¦__¦ Yes ¦__¦ No

7.4 Using computers enables you to work more effectively. ¦__¦ Yes ¦__¦ No

7.5 Using computers makes you work more slowly owing to the need of time spent in learning how to use computers. ¦__¦ Yes ¦__¦ No

7.6 Generally, learning how to use computers is worthwhile. ¦__¦ Yes ¦__¦ No

7.7 Others (Please specify) .....

.....

8. You plan to begin/or have additional study on how to use computers. ¦__¦ Yes ¦__¦ No

9. You have played computer games. ¦__¦ Yes ¦__¦ No

10. You knew that there has already been Computer-Assisted Language Learning (CALL) in other countries. ¦__¦ Yes ¦__¦ No

11. Please mention name(s) of English language teacher in your institution that is interested in CALL

.....

.....

Part II Information about the Status of Computer-Assisted Language Learning (CALL) in Each Institution and the Respondent's Opinions and Attitudes towards CALL

Direction Please answer the following questions by marking ✓ in the ¦__¦ in front of the true answer and /or write your answer in the space provided.

12. Generally your English class will be like this:
(Please specify amount of usage, if any. One period is approximately fifty minute long.)

12.1 The overhead projector is
sometimes used. ¦__¦ Yes ¦__¦ No
(If you answered "Yes", please specify the approximate amount of usage. About.....period(s) a week)

12.2 The cassette player and recorder
is sometimes used. ¦__¦ Yes ¦__¦ No
(If you answered "Yes", please specify the approximate amount of usage. About.....period(s) a week)

12.3 The video player and television is
sometimes used. ¦__¦ Yes ¦__¦ No
(If you answered "Yes", please specify the approximate amount of usage. About.....period(s) a week)

12.4 The language laboratory is
sometimes used. ¦__¦ Yes ¦__¦ No
(If you answered "Yes", please specify the approximate amount of usage. About.....period(s) a week)

12.5 The computer is sometimes used. ¦__¦ Yes ¦__¦ No

(If you answered "Yes", please specify the approximate amount of usage. About.....period(s) a week)

12.6 Others (Please specify).....

(Please specify the approximate amount of usage. About.....period(s) a week)

13. CALL has already been used in your institution. ¦__¦ Yes ¦__¦ No

14. You are one who have used CALL. (in either type of activities) ¦__¦ Yes ¦__¦ No

If you answered "Yes", please mention name(s) of software you have used as sample(s).....

If you answered "No" in item 14, please skip item 15-16 to answer item 17.

15. You have used CALL at your present institution. ¦__¦ Yes ¦__¦ No

If you answered "No", please mention the venue you experienced the use of CALL.....

16. What type(s) of activities have you used CALL in ?

16.1 Used as an educational tool, just like a cassette player, a video player, to enhance teaching and learning in classes. ¦__¦ Yes ¦__¦ No

16.2 Provided for students' self-access study. ¦__¦ Yes ¦__¦ No

16.3 Used as a remedial study for particular students. ¦__¦ Yes ¦__¦ No

16.4 Considered as a requirement that students had to carry out after the classroom time. ¦__¦ Yes ¦__¦ No

16.5 Others (Please specify).....

17. Please circle ○ a single number of each of the following statements in order to indicate the degree of your opinions and attitudes towards CALL. Each single number represents the degree of your opinion as follows:

1 = Strongly disagree 2 = Mildly disagree

3 = Disagree 4 = Agree

5 = Mildly agree 6 = Strongly agree

		Strongly Disagree					Strongly Agree
17.1	Using computers is complicated.	1	2	3	4	5	6
17.2	Computers are probably inappropriate to language teaching and learning.	1	2	3	4	5	6
17.3	CALL is not necessary because existing teaching methods are good enough.	1	2	3	4	5	6
17.4	CALL may enhance the effectiveness of language teaching and learning.	1	2	3	4	5	6
17.5	You have not yet been confident in the effectiveness of CALL.	1	2	3	4	5	6
17.6	CALL should be worth investing.	1	2	3	4	5	6

	Strongly Disagree					Strongly Agree
17.7 Investing in CALL might not be worthwhile.	1	2	3	4	5	6
17.8 CALL will be soon faded out.	1	2	3	4	5	6
17.9 You are afraid that you will be disappointed in the effectiveness of CALL.	1	2	3	4	5	6
17.10 Language laboratory is not as useful as expected.	1	2	3	4	5	6
17.11 Existing CALL programs are not good enough.	1	2	3	4	5	6
17.12 It is preferable to wait until better programs are available.	1	2	3	4	5	6
17.13 You wish the administrator to pay more attention to CALL.	1	2	3	4	5	6
17.14 There must be a lot of computer equipments for the implementation of CALL.	1	2	3	4	5	6
17.15 Ones who are not good at computers are probably unable to use CALL in their teaching and learning.	1	2	3	4	5	6
17.16 CALL tends to be impossible due to the need of a great budget.	1	2	3	4	5	6
17.17 You would like to have chances to participate in CALL training.	1	2	3	4	5	6

	Strongly Disagree					Strongly Agree
17.18 There is not enough CALL training in Thailand.	1	2	3	4	5	6
17.19 Computers will one day replace human language teachers.	1	2	3	4	5	6
17.20 Students are presumably not interested in using CALL.	1	2	3	4	5	6
17.21 Students will plausibly be more interested in English if there is CALL.	1	2	3	4	5	6
17.22 Computers probably help to solve problems deriving from students' paces of learning.	1	2	3	4	5	6
17.23 Computers can presumably be used in teaching all the four skills; listening, speaking, reading, and writing.	1	2	3	4	5	6
17.24 Computers should be effective if used in the teaching of listening.	1	2	3	4	5	6
17.25 Computers should be effective if used in the teaching of speaking.	1	2	3	4	5	6
17.26 Computers should be effective if used in the teaching of reading.	1	2	3	4	5	6

	Strongly Disagree					Strongly Agree
17.27 Computers should be effective if used in the teaching of writing.	1	2	3	4	5	6
17.28 Computers are an interesting educational tool, they should be used.	1	2	3	4	5	6
17.29 You have not yet been interested in CALL because you are not fond of using computers.	1	2	3	4	5	6

17.30 Others (Please specify).....

.....

18. You had heard that there were CALL seminars/training in Thailand. ¦__¦ Yes ¦__¦ No

19. You had participated CALL seminar/ training (either in Thailand or abroad). ¦__¦ Yes ¦__¦ No

If you answered "Yes" in item 19, please specify the organizer and year of the mentioned seminar/ training.....

.....

If you answered "No" in item 19, please skip item 20 to answer item 21.

20. Please give your comments and/ or suggestions concerning the seminar/training mentioned in item 19, as you wish.

.....

.....

.....

21. Please give your comments and/ or recommendations concerning Computer-Assisted Language Learning (CALL), as you wish.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

This is the end of the questionnaire.

Thank you very much for your cooperation.

APPENDIX B

==========

แบบสอบถาม

เรื่อง การสำรวจสถานภาพปัจจุบัน อุปสรรค และข้อเสนอแนะ

ในการนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษาอังกฤษในมหาวิทยาลัยของรัฐ

คำชี้แจง : จุดมุ่งหมายของแบบสอบถามนี้ เพื่อสำรวจสถานภาพปัจจุบัน อุปสรรค และแนวโน้มของการนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษาอังกฤษในมหาวิทยาลัยของรัฐ จากทัศนคติของอาจารย์ผู้สอนภาษาอังกฤษ ซึ่งจะนำไปสู่ข้อเสนอแนะในการนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษาอังกฤษในภายภาคหน้า อนึ่ง ความรู้เรื่องคอมพิวเตอร์มิใช่สิ่งจำเป็นในการตอบแบบสอบถามนี้ทัศนคติและความคิดเห็นที่แท้จริง ที่อาจารย์แต่ละท่านมีต่อแนวความคิดในการที่จะนำคอมพิวเตอร์มาช่วยในการเรียนการสอนภาษาอังกฤษคือจุดประสงค์สำคัญของแบบสอบถาม

แบบสอบถามฉบับนี้เป็นส่วนหนึ่งของการทำวิทยานิพนธ์ ในหลักสูตรศิลปศาสตร์มหาบัณฑิตสาขาวิชาภาษาศาสตร์ประยุกต์ มหาวิทยาลัยมหิดล คำตอบและความคิดเห็นของท่านเป็นสิ่งสำคัญมากที่จะช่วยให้การศึกษาครั้งนี้ประสบผลสำเร็จ โปรดตอบทุกข้อตามความเป็นจริง คำตอบของท่านจะเก็บไว้เป็นความลับและใช้เฉพาะการศึกษานี้เท่านั้น

==========

ตอนที่ 1 ข้อมูลเกี่ยวกับตัวผู้ตอบแบบสอบถาม

คำชี้แจง โปรดตอบแบบสอบถามต่อไปนี้ โดยทำเครื่องหมาย ✓ ลงใน ¦___¦ หน้าข้อความที่เป็นจริง และกรอกข้อความในช่องว่างที่กำหนดให้

1. เพศ ¦___¦ ชาย ¦___¦ หญิง

2. ท่านสอนภาษาอังกฤษมานานกี่ปี .....

3. วุฒิการศึกษาสูงสุดของท่าน ¦___¦ ปริญญาตรี
¦___¦ ปริญญาโท
¦___¦ ปริญญาเอก
¦___¦ อื่น ๆ (โปรดระบุ).....

4. ท่านเคยไปศึกษาต่างประเทศ ¦___¦ ใช่ ¦___¦ ไม่ใช่

5. ท่านเคยใช้คอมพิวเตอร์ช่วยในการทำงาน ¦___¦ ใช่ ¦___¦ ไม่ใช่

ถ้าท่านตอบว่า "ไม่ใช่" ในข้อ 5 โปรดข้ามข้อ 6 - 7 ไปตอบข้อ 8 ต่อไป

6. ท่านเคยใช้คอมพิวเตอร์ช่วยในการทำงาน ในรูปแบบใดบ้าง ดังต่อไปนี้

6.1 ใช้โปรแกรมประเภท Word Processor พิมพ์บทเรียน หรืองานทั่ว ๆไป ¦___¦ ใช่ ¦___¦ ไม่ใช่

6.2 ใช้โปรแกรมประเภทคำนวณเพื่อคำนวณคะแนนสอบ ¦___¦ ใช่ ¦___¦ ไม่ใช่

6.3 ใช้โปรแกรมประเภทฐานข้อมูล (Data Base) เก็บข้อมูล ¦___¦ ใช่ ¦___¦ ไม่ใช่

6.4 ใช้โปรแกรมประเภทคำนวณหาค่าสถิติในการวิจัย ¦___¦ ใช่ ¦___¦ ไม่ใช่

6.5 อื่น ๆ (โปรดระบุ).....
.....

7. จากการที่ท่านใช้คอมพิวเตอร์ช่วยในการทำงาน ท่านพบว่า

7.1 ไม่มีความแตกต่างจากการทำงานปกติโดยไม่ใช้เครื่องคอมพิวเตอร์ ¦___¦ ใช่ ¦___¦ ไม่ใช่

7.2 การเรียนรู้การใช้คอมพิวเตอร์เป็นเรื่องยุ่งยาก ¦___¦ ใช่ ¦___¦ ไม่ใช่

7.3 การใช้คอมพิวเตอร์ช่วย ทำให้ทำงานได้เร็วขึ้น ¦___¦ ใช่ ¦___¦ ไม่ใช่

7.4 การใช้คอมพิวเตอร์ช่วย ทำให้ทำงานมีประสิทธิภาพมากขึ้น ¦___¦ ใช่ ¦___¦ ไม่ใช่

7.5 การใช้คอมพิวเตอร์ช่วย ทำให้ทำงานได้ช้าลง เพราะต้องเสียเวลาในการเรียนรู้ ¦___¦ ใช่ ¦___¦ ไม่ใช่

7.6 โดยรวมแล้วการเรียนรู้การใช้คอมพิวเตอร์นั้นคุ้มค่า ¦___¦ ใช่ ¦___¦ ไม่ใช่

7.7 อื่น ๆ (โปรดระบุ).....
.....

8. ท่านคิดจะเรียนรู้การใช้คอมพิวเตอร์ หรือเรียนเพิ่มเติม ในอนาคต ¦___¦ ใช่ ¦___¦ ไม่ใช่

9. ท่านเคยใช้คอมพิวเตอร์เล่นเกมส์ ¦___¦ ใช่ ¦___¦ ไม่ใช่

10. ท่านเคยทราบมาว่าในต่างประเทศมีการนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษา (Computer-Assisted Language Learning : CALL) แล้ว ¦___¦ ใช่ ¦___¦ ไม่ใช่

11. อาจารย์ในภาควิชาของท่านที่มีความสนใจเรื่อง การนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษา คือ.....
.....

<u>ตอนที่ 2</u> ข้อมูลเกี่ยวกับสถานภาพการนำคอมพิวเตอร์มาใช้ช่วยการเรียนการสอนภาษาอังกฤษ ในสถาบันของผู้ตอบแบบสอบถาม และนโยบายและแผนงานในอนาคตเกี่ยวกับเรื่องนี้

<u>คำชี้แจง</u> โปรดตอบแบบสอบถามต่อไปนี้<u>ในฐานะหัวหน้าภาควิชาภาษาอังกฤษ</u> โดยทำเครื่องหมาย ✓ ลงใน ¦___¦ หน้าข้อความที่เป็นจริง และกรอกข้อความในช่องว่างที่กำหนดให้

12. ในหน่วยงานของท่าน มีการนำคอมพิวเตอร์มาใช้เป็นส่วนประกอบเพื่อช่วยการเรียนการสอนภาษาอังกฤษบ้างแล้ว ¦___¦ ใช่ ¦___¦ ไม่ใช่

ถ้าท่านตอบว่า "ไม่ใช่" ในข้อ 12 โปรดข้ามข้อ 13 ไปตอบข้อ 14 ต่อไป

13. การใช้คอมพิวเตอร์ช่วยการเรียนการสอนภาษาอังกฤษในหน่วยงานของท่าน ทำในรูปแบบใดบ้างดังต่อไปนี้

13.1 ใช้เป็นอุปกรณ์อย่างหนึ่งที่ช่วยเสริมการเรียนการสอนในชั้นเรียนปกติ ในลักษณะเดียวกับเครื่องเล่นเทป เครื่องเล่นวิดีโอ เป็นต้น ¦___¦ ใช่ ¦___¦ ไม่ใช่

13.2 จัดให้นักศึกษาใช้เรียนรู้ด้วยตนเอง ตามความต้องการเฉพาะคน (Self-access study) ¦___¦ ใช่ ¦___¦ ไม่ใช่

13.3 ใช้เป็นบทเรียนซ่อมเสริมนอกชั้นเรียนปกติ สำหรับนักศึกษาที่มีจุดอ่อนเฉพาะเรื่อง (Remedial study) ¦___¦ ใช่ ¦___¦ ไม่ใช่

13.4 กำหนดเป็นกิจกรรมเสริมบทเรียนที่นักศึกษาต้องทำนอกชั้นเรียนปกติ ¦___¦ ใช่ ¦___¦ ไม่ใช่

13.5 อื่น ๆ (โปรดระบุ).....

.....

14. ท่านเป็นผู้หนึ่งที่เคยใช้โปรแกรมคอมพิวเตอร์ช่วยการเรียนการสอนภาษาอังกฤษ (ไม่ว่าจะในรูปแบบใดก็ตาม) ¦___¦ ใช่ ¦___¦ ไม่ใช่

15. โปรดทำเครื่องหมายวงกลม ○ ล้อมรอบหมายเลขใดหมายเลขหนึ่งสำหรับแต่ละข้อย่อยต่อไปนี้ <u>เพื่อแสดงระดับความคิดเห็นของท่านเกี่ยวกับการใช้คอมพิวเตอร์ช่วยสอนภาษา</u> โดยที่หมายเลขแต่ละตัวแสดงระดับความคิดเห็นของท่าน ดังนี้

1 = ไม่เห็นด้วยอย่างมากที่สุด 2 = ไม่เห็นด้วยอย่างมาก 3 = ไม่เห็นด้วย
4 = เห็นด้วย 5 = เห็นด้วยอย่างมาก 6 = เห็นด้วยอย่างมากที่สุด

		ไม่เห็นด้วยอย่างมากที่สุด					เห็นด้วยอย่างมากที่สุด
15.1	การใช้คอมพิวเตอร์เป็นเรื่องยุ่งยาก	1	2	3	4	5	6
15.2	คอมพิวเตอร์ไม่น่าจะเหมาะต่อการสอนภาษา	1	2	3	4	5	6
15.3	การใช้คอมพิวเตอร์ช่วยสอน ไม่มีความจำเป็นเพราะการสอนด้วยวิธีเดิมดีแล้ว	1	2	3	4	5	6
15.4	การใช้คอมพิวเตอร์ช่วยสอนน่าจะช่วยให้การเรียนการสอนภาษาอังกฤษได้ผลดีขึ้น	1	2	3	4	5	6
15.5	ท่านยังไม่มั่นใจในประสิทธิภาพของการใช้คอมพิวเตอร์ช่วยสอน	1	2	3	4	5	6

		ไม่เห็นด้วยอย่างมากที่สุด					เห็นด้วยอย่างมากที่สุด
15.6	การนำคอมพิวเตอร์มาช่วยสอนนั้นโดยรวมแล้วน่าจะคุ้มค่าต่อการลงทุน	1	2	3	4	5	6
15.7	การนำคอมพิวเตอร์มาช่วยสอนคงไม่ได้ผลคุ้มค่าต่อการลงทุน	1	2	3	4	5	6
15.8	การใช้คอมพิวเตอร์ช่วยสอนนี้ คงจะหมดความนิยมลงไปในไม่ช้า	1	2	3	4	5	6
15.9	ท่านเกรงจะผิดหวังในประสิทธิภาพของการใช้คอมพิวเตอร์ช่วยสอน	1	2	3	4	5	6
15.10	ห้องปฏิบัติการทางภาษา (Language Laboratory) ไม่ได้ประโยชน์เท่าที่คาดกันไว้ในตอนต้น	1	2	3	4	5	6
15.11	โปรแกรมคอมพิวเตอร์ (Software) ช่วยสอนภาษาที่มีอยู่ยังไม่ดีพอ	1	2	3	4	5	6
15.12	ควรรอให้มีการพัฒนาโปรแกรมคอมพิวเตอร์ (Software) เพื่อจุดประสงค์นี้ให้ดีกว่าปัจจุบันเสียก่อน จึงจะนำมาใช้ช่วยสอน	1	2	3	4	5	6
15.13	ท่านต้องการให้ผู้บริหารสนับสนุนเรื่องนี้ให้มากขึ้น	1	2	3	4	5	6
15.14	การใช้คอมพิวเตอร์ช่วยสอนนั้นต้องการอุปกรณ์คอมพิวเตอร์จำนวนมาก จึงจะใช้งานได้	1	2	3	4	5	6
15.15	ถ้าใช้คอมพิวเตอร์ไม่เก่งคงจะนำมาใช้ช่วยสอนไม่ได้	1	2	3	4	5	6
15.16	การนำคอมพิวเตอร์มาช่วยสอนนั้นคงเป็นไปไม่ได้เนื่องจากต้องลงทุนมาก	1	2	3	4	5	6
15.17	ท่านต้องการเข้ารับการฝึกอบรมเกี่ยวกับเรื่องนี้	1	2	3	4	5	6
15.18	ในประเทศไทยยังมีการฝึกอบรมเรื่องนี้น้อยเกินไป	1	2	3	4	5	6

	ไม่เห็นด้วยอย่างมากที่สุด					เห็นด้วยอย่างมากที่สุด
15.19 สักวันหนึ่งคอมพิวเตอร์จะแทนที่ครูสอนภาษาอังกฤษได้	1	2	3	4	5	6
15.20 นักศึกษาคงไม่สนใจจะใช้	1	2	3	4	5	6
15.21 นักศึกษาน่าจะสนใจเรียนภาษาอังกฤษมากขึ้นถ้ามีคอมพิวเตอร์ช่วยสอน	1	2	3	4	5	6
15.22 การใช้คอมพิวเตอร์น่าจะช่วยแก้ปัญหาความแตกต่างของความสามารถในการเรียนรู้ของนักศึกษาได้	1	2	3	4	5	6
15.23 คอมพิวเตอร์น่าจะใช้ได้กับการสอนภาษาทั้ง 4 ทักษะ คือ ฟัง พูด อ่าน เขียน	1	2	3	4	5	6
15.24 คอมพิวเตอร์น่าจะใช้ได้ดีกับการสอนทักษะการฟัง	1	2	3	4	5	6
15.25 คอมพิวเตอร์น่าจะใช้ได้ดีกับการสอนทักษะการพูด	1	2	3	4	5	6
15.26 คอมพิวเตอร์น่าจะใช้ได้ดีกับการสอนทักษะการอ่าน	1	2	3	4	5	6
15.27 คอมพิวเตอร์น่าจะใช้ได้ดีกับการสอนทักษะการเขียน	1	2	3	4	5	6
15.28 คอมพิวเตอร์เป็นเครื่องมือช่วยสอนที่น่าสนใจควรนำมาใช้	1	2	3	4	5	6
15.29 ท่านยังไม่สนใจจะใช้ เพราะไม่ชอบใช้คอมพิวเตอร์	1	2	3	4	5	6

15.30 อื่น ๆ (โปรดระบุ).....

.....

16. หน่วยงานของท่านมีแผนงานที่จะนำคอมพิวเตอร์มาใช้ช่วย
การเรียนการสอนภาษาอังกฤษ / หรือพัฒนาการใช้งาน
ออกไปอีก ¦___¦ ใช่ ¦___¦ ไม่ใช่

ท่านที่ตอบว่า "ไม่ใช่" ในข้อ 16 โปรดข้ามข้อ 17 ไปตอบข้อ 18 ต่อไป

17. ในช่วงแผนพัฒนาฉบับที่ 7 (พ.ศ.2535-2539) นี้ หน่วยงานของท่านให้ความสำคัญ และมีการจัดเตรียมเพื่อนำคอมพิวเตอร์มาใช่ช่วยการเรียนการสอนภาษา (Computer - Assisted Language Learning: CALL) มากน้อยเพียงไร และอย่างไร (กรุณาระบุโดยละเอียด)

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

18. โปรดแสดงความคิดเห็น และ/หรือ ข้อเสนอแนะใด ๆ ตามต้องการเกี่ยวกับการนำคอมพิวเตอร์มาช่วยในการเรียนการสอนภาษาอังกฤษในระดับมหาวิทยาลัย

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

จบแบบสอบถาม ขอขอบพระคุณอย่างยิ่งในความร่วมมือของท่านไว้ ณ โอกาสนี้

(Translation of the Questionnaire Form B)

==========

The Questionnaire on

An Investigation of the Current Status, Problems,

and Recommendations for Future Implementation of

Computer-Assisted Language Learning (CALL)

in State Universities in Thailand

Objectives : This questionnaire intends to investigate the current status, problems, and trend of Computer-Assisted Language Learning (CALL) implementation in state universities in Thailand. The results are expected to lead to recommendations for CALL implementation in the future. However, knowledge in computers is not necessary in responding the questionnaire. Each teacher's prompt attitudes and opinions towards CALL are extremely useful to the study.

This study is a part of the Master Degree Thesis in Applied Linguistics Program at Mahidol University. Your responses are essential to the success of this study. Please answer every question promptly. Your responses will be treated confidentially and served only this study.

==========

Part I Information about the Respondent of the Questionnaire

Direction Please answer the following questions by marking ✓ in the ¦_¦ in front of the true answer and /or write your answer in the space provided.

1. Gender ¦__¦ Male ¦__¦ Female

2. You have taught English for .....years

3. Your highest educational degree is ¦__¦ Bachelor Degree
¦__¦ Master Degree
¦__¦ Doctoral Degree
¦__¦ Others (Please specify).....

4. Had you studied abroad ? ¦__¦ Yes ¦__¦ No

5. Have you ever used computers in your work? ¦__¦ Yes ¦__¦ No

If you answered "No" in item 5, please skip item 6-7 to answer item 8.

6. You have used computers in the following types of work.
   6.1 Using word processor programs to type lessons and general documents ¦__¦ Yes ¦__¦ No
   6.2 Using computer programs to calculate test marks ¦__¦ Yes ¦__¦ No
   6.3 Using database programs to record data ¦__¦ Yes ¦__¦ No
   6.4 Using statistical programs to analyze research statistics ¦__¦ Yes ¦__¦ No
   6.5 Others (Please specify) .....
   .....

7. As you experienced using computers in your work, you found that
   7.1 There is no difference between working with and without computers. ¦__¦ Yes ¦__¦ No
   7.2 Learning how to use computers is complicated. ¦__¦ Yes ¦__¦ No

7.3 Using computers enables you to work more quickly. ¦__¦ Yes ¦__¦ No

7.4 Using computers enables you to work more effectively. ¦__¦ Yes ¦__¦ No

7.5 Using computers makes you work more slowly owing to the need of time spent in learning how to use computers. ¦__¦ Yes ¦__¦ No

7.6 Generally, learning how to use computers is worthwhile. ¦__¦ Yes ¦__¦ No

7.7 Others (Please specify) .....

.....

8. You plan to begin/or have additional study on how to use computers. ¦__¦ Yes ¦__¦ No

9. You have played computer games. ¦__¦ Yes ¦__¦ No

10. You knew that there has already been Computer-Assisted Language Learning (CALL) in other countries. ¦__¦ Yes ¦__¦ No

11. Please mention name(s) of English language teacher in your institution that is interested in CALL

.....

.....

Part II : Information about the Status of Computer-Assisted Language Learning (CALL) in each Institution and Policy and Future Plan for CALL

Direction : Please answer the following questions on behalf of the head of the English language department by marking ✓ in the ¦__¦ in front of the true answer and /or write your answer in the space provided.

12. CALL has already been used in your institution. ¦__¦ Yes ¦__¦ No

If you answered "No" in item 12, please skip item 13 to answer item 14.

13. What type(s) of activities have you used CALL in ?

13.1 Used as an educational tool, just like a cassette player, a video player, to enhance teaching and learning in classes. ¦__¦ Yes ¦__¦ No

13.2 Provided for students' self-access study. ¦__¦ Yes ¦__¦ No

13.3 Used as a remedial study for particular students. ¦__¦ Yes ¦__¦ No

13.4 Considered as a requirement that students had to carry out after the classroom time. ¦__¦ Yes ¦__¦ No

13.5 Others (Please specify).....

14. You are one who have used CALL. (in either type of activities) ¦__¦ Yes ¦__¦ No

15. Please circle ○ a single number of each of the following statements in order to indicate the degree of your opinions and attitudes towards CALL. Each single number represents the degree of your opinion as follows:

1 = Strongly disagree 2 = Mildly disagree

3 = Disagree 4 = Agree

5 = Mildly agree 6 = Strongly agree

	Strongly Disagree					Strongly Agree
15.1 Using computers is complicated.	1	2	3	4	5	6
15.2 Computers are probably inappropriate to language teaching and learning.	1	2	3	4	5	6
15.3 CALL is not necessary because existing teaching methods are good enough.	1	2	3	4	5	6
15.4 CALL may enhance the effectiveness of language teaching and learning.	1	2	3	4	5	6
15.5 You have not yet been confident in the effectiveness of CALL.	1	2	3	4	5	6
15.6 CALL should be worth investing.	1	2	3	4	5	6
15.7 Investing in CALL might not be worthwhile.	1	2	3	4	5	6
15.8 CALL will be soon faded out.	1	2	3	4	5	6
15.9 You are afraid that you will be disappointed in the effectiveness of CALL.	1	2	3	4	5	6

	Strongly Disagree					Strongly Agree
15.10 Language laboratory is not as useful as expected.	1	2	3	4	5	6
15.11 Existing CALL programs are not good enough.	1	2	3	4	5	6
15.12 It is preferable to wait until better programs are available.	1	2	3	4	5	6
15.13 You wish the administrator to pay more attention to CALL.	1	2	3	4	5	6
15.14 There must be a lot of computer equipments for the implementation of CALL.	1	2	3	4	5	6
15.15 Ones who are not good at computers are probably unable to use CALL in their teaching and learning.	1	2	3	4	5	6
15.16 CALL tends to be impossible due to the need of a great budget.	1	2	3	4	5	6
15.17 You would like to have the chance to participate in CALL training.	1	2	3	4	5	6
15.18 There is not enough CALL training in Thailand.	1	2	3	4	5	6
15.19 Computers will one day replace human language teachers.	1	2	3	4	5	6

	Strongly Disagree					Strongly Agree
15.21 Students will plausibly be more interested in English if there is CALL.	1	2	3	4	5	6
15.22 Computers probably help to solve problems deriving from students' paces of learning.	1	2	3	4	5	6
15.23 Computers can presumably be used in teaching all the four skills; listening, speaking, reading, and writing.	1	2	3	4	5	6
15.24 Computers should be effective if used in the teaching of listening.	1	2	3	4	5	6
15.25 Computers should be effective if used in the teaching of speaking.	1	2	3	4	5	6
15.26 Computers should be effective if used in the teaching of reading.	1	2	3	4	5	6
15.27 Computers should be effective if used in the teaching of writing.	1	2	3	4	5	6
15.28 Computers are an interesting educational tool, they should be used.	1	2	3	4	5	6

	Strongly Disagree					Strongly Agree
15.29 You have not yet been interested in CALL because you are not fond of using computers.	1	2	3	4	5	6

15.30 Others (Please specify).....

.....

16. Your institution has a plan to implement/ or to further develop CALL in the future. ¦__¦ Yes ¦_¦ No

If you answered "Yes" in item 16, please continue item 17.

If you answered "No" in item 16, this is the end of the questionnaire for you. Thank you very much for your cooperation.

17. During the 7th National Development Plan of Thailand (1992-1995), to what extent does your institution give an emphasis to and make provision for Computer-Assisted Language Learning (CALL) ? (Please specify in details)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

18. Please give comments and/or suggestions towards the implementation of CALL at university level as you wish.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

This is the end of the questionnaire.

Thank you very much for your cooperation.

APPENDIX C

Software directory

The following is a selection of programs that will be of interest to the language teacher: it does not claim to be a comprehensive list of CALL software. The categories correspond as nearly as possible to those of Chapters 2–19, and where relevant reference is made back to the text. Although the list refers to EFL, many of the authoring programs are available with foreign character sets: information is available from the software publishers. Software originating from North America is marked **.

We aim to keep this list as up-to-date as possible, and would welcome all additions and amendments. Whilst every attempt has been made to ensure that the information is correct at the time of going to press, the Publishers cannot accept responsibility for any errors or omissions.

GRAMMAR

A/an (unpublished; Spectrum listing in Higgins & Johns 1984) Students enter any noun phrase and the computer selects the correct form of the indefinite article. See page 92.

Anglais (VIFI; Nathan; Apple) Self-study grammar exercises for French learners of English. Fifteen units, each with eight activities, on five disks + audiocassettes.

Animals (on Apple System Master Disk; Acorn listing in Davies 1985) The student thinks of an animal and the computer guesses which animal it is by asking yes/no questions. The student builds up a database by teaching the computer the names of new animals and relevant questions.

AUTHORING PROGRAMS See GENERAL AUTHORING PACKAGES, below, for fill-in, multiple-choice and matching authoring programs suitable for grammar practice.

Business (Max Hueber Verlag, Munich; Spectrum) Integrated package of grammar, vocabulary, cloze tests and business mazes designed for self-access. By Michael Carrier.

****English On Call** (McGraw-Hill; Apple) General English course at three levels. Practises conversational English, reinforces basic language skills and concepts, reviews grammar points.

****Grammar Examiner** (DesignWare; Apple, Commodore 64, IBM PC/PCjr) A grammar skills game in which players climb from cub reporter to editor-in-chief. Students roll dice and have to answer a grammar question or edit a paragraph. Authoring facility.

Grammar Exercises (Castle; Spectrum) A series of contrastive grammar packages, each with fifty contextualised items and a multiple-choice feature. Titles include **Since/For, Make vs Do, Some/Any** and **Irregular Verbs**.

****Grammar Mastery Series** (Regents/ALA; Apple) Over seventy hours of instruction and drilling of key grammatical points.

Jackass (unpublished; John Higgins) Version of **Animals**. After each round, the computer creates a sentence describing the animal.

John and Mary (unpublished; Spectrum listing in Higgins & Johns 1984) A prototype exploratory program. See pages 93–95.

Lively Sentence (Summer 76 Software; Acorn BBC) Deals with simple sentence structure and the basics of literary style. Covers identifying verbs and subjects, sentences and phrases etc.

Photofit (unpublished; Spectrum listing in Higgins & Johns 1984) Match the face drawn by the computer. See pages 17–18.

Screentest for First Certificate (Longman; Acorn BBC, Apple) Practice for Cambridge FCE Use of English paper. Four exercises each on space-filling, sentence transformation, word formation, sentence completion, dialogue building. Fill-in and multiple-choice options. See page 36.

Screentest for Proficiency (Longman; Acorn BBC, Apple) As above for Cambridge Proficiency Examination.

S-Ending (unpublished; Tim Johns) The computer provides suitable s-ending for any real or hypothetical noun or verb. See page 92.

****Sentence Combining** (Milliken; Apple) Exercises on combining sentences using conjunctions, relative pronouns, etc. Animated presentation. Authoring and printout facilites.

Sentence Linking (Summer 76 Software; Acorn BBC) Identification of unlinked statements, punctuation of unlinked statements, linking words, varying stress and sentence patterns.

Tree of Knowledge (Acornsoft; Acorn BBC) More flexible version of **Animals**.

LETTER RECOGNITION AND FORMATION

Character Recognition (Castle; Spectrum) Practice in recognition of lower case and upper case letters, and numbers. Variable speed feature.

Happy Letters (Bourne Educational; Acorn BBC, Electron, Amstrad 464) Animated letter-matching game with various levels and speeds.

Happy Writing (Bourne Educational; Acorn BBC, Electron, Amstrad 464) Draws letters, numbers or words, showing where to start, which direction to take and where to end. Upper and lower case; adjustable speed; adjustable sound level; variable wordlist.

Letterhunt (CUP; Acorn BBC, Apple) Letter discrimination arcade game. Authoring facility.

Letters (Chalksoft; Acorn BBC, Spectrum) Five programs which show students how to form letters correctly by copying what is presented on the screen. The programs group the letters in 'families'.

Numbers and Words (Castle; Spectrum) Practice in the relationship between the numerical and alphabetical representation of numbers.

Reversals (Chalksoft; Acorn BBC, Spectrum) Helps students who have problems writing b for d, p for q, etc.

****Sesame Street Letter-Go-Round** (CBS; Atari, Commodore) Letter recognition and simple spelling game.

VOCABULARY

Alphagame See **Vocab**, below, and pages 24, 25.

Anagrams See **Vocab**, below, and page 25.

Anagrams (Castle; Spectrum) Solve anagrams from ready-made wordlists.

Call My Bluff (Macmillan; Acorn BBC, RML380Z/480Z, Apple) Students guess the meanings of words given. Authoring facility.

****Clue In** (Regents/ALA; Apple) Students select from one to four clues available to guess which of three words they will all describe. Multiple-choice format.

Code Breaker (CUP; Acorn BBC, Apple) The user decodes sentences which have been encoded by simple letter substitution. Authoring facility.

Count-Down Series (AVC; ZX81, Spectrum, Acorn BBC, Electron) Drill and practice vocabulary programs.

Crossword (Macmillan; RML380Z/480Z, Acorn BBC, Apple) Authoring package for crossword puzzles and acrostics. Different levels of clue possible for each entry.

Crossword Challenge (Wida; Acorn BBC, Apple) Thirty crossword puzzles for EFL students. Two-player option.

****Crossword Magic** (Mindscape; Apple) Authoring program for creating and printing crosswords.

Crossword Master (Wida; Acorn BBC, Apple) Crossword authoring program. User can create, save and solve crosswords on-screen. Includes two-player competitive solving mode.

****Cryptocube** (DesignWare; Apple, Commodore 64, IBM PC, IBM PCjr) Students guess hidden words. Authoring facility.

Enigma (Camsoft; Acorn BBC) Similar to **Code Breaker**. Compatible with texts produced for **Copywrite**.

Facemaker (Applied Systems Knowledge; Acorn BBC, Commodore Vic/64) Students think of the face of a person they all know and try to reconstruct it, prompted by simple questions from the computer.

Hangman 1, Hangman 2 (Castle; Spectrum) Available at two levels: Waystage and Threshold. Each level has about 650 items.

Helter Skelter (Wida; Acorn BBC) A word classification authoring package featuring three student activities – **Helter Skelter**, **Odd Man Out**, and **Snap-It**. See pages 29, 30.

House (MEP; Acorn BBC) The computer draws different parts of the outside of a house and garden. The student has to label the parts as they are drawn.

Linkword (Acornsoft; Acorn BBC) Vocabulary development by 'pun analogy' with the learner's mother tongue. See page 24.

Masterword (ESM; Acorn BBC) Student tries to guess a word the computer is thinking of.

Matching See **Matchmaster** under GENERAL AUTHORING PACKAGES.

****Matchit** (Regents/ALA; Apple) A competitive word-matching game. Authoring facility.

Mindword See **Vocab**, below, and page 25.

****Pathwords** (CBS; Apple, Atari, Commodore, IBM PC) Students link together adjacent letters trying to create the longest possible words. Timekeeping function.

Pelmanism See **Matchmaster** under GENERAL AUTHORING PROGRAMS.

****Quizit** (Regents/ALA; Apple) A fill-in vocabulary tester. A sentence is provided and the student must guess the missing word from the context.

Scrabble (Published by Leisure Genius for Commodore 64, Amstrad and Acorn BBC, and by Psion for the Spectrum) On-screen version of the board game. Up to four players, including the computer, who plays a mean game.

Scrambler (Camsoft; Acorn BBC) A text is displayed in such a way that the letters of each word are jumbled. Compatible with texts created for **Copywrite**.

Skullman See **Vocab**, below, and page 25.

Snap See **Matchmaster** under GENERAL AUTHORING PACKAGES, and page 25.

SPELLING Some spelling programs are also suitable for vocabulary development. See SPELLING section, below.

Vocab (Wida; Acorn BBC) An authoring program with six different activities. The teacher enters and saves a list of words, each with a gapped context sentence. The learner chooses from six activities: **Word Order**, **Skullman**, **Mindword**, **Alphagame**, **Anagrams**, **Which Word**. See pages 24, 25.

Vocabulary (Castle; Spectrum) Reinforces particular vocabulary sets, based on synonyms, antonyms, noun/adjective derivations etc.

Which Word? See **Vocab**, above.

Wordbuilder (Collins; Spectrum, Commodore 64) Systematic practice of vocabulary with emphasis on prediction and deduction.

****Word Games** (MECC; Atari, Commodore 64, Radio Shack 111/4) Three word games to help with visual recall, logical guessing and word association.

Word Hunt (Acornsoft; Acorn BBC) Students have to form as many words as they can from the given word. A time limit is set, at the end of which the computer lists all possible words. See page 28.

Word Order See **Vocab**, above.

Wordpacks (Wida; Sinclair ZX81) Four cassettes each with two simple authoring programs. Pack 1: **Multiple Choice Test** and **Odd Man Out**. Pack 2: **Word Test** and **Matchit**. Pack 3: **Jackpot** and **Language Snap**. Pack 4: **Crossword** and **Anagrams**.

****Word Race** (Regents/ALA; Apple) An analogies game in a multiple-choice format.

****Word Roulette** (Regents/ALA; Apple) A word recognition game.

Wordspin (unpublished; Spectrum listing in Higgins & Johns 1984) Described on page 22.

Wordstore (Wida; Acorn BBC) 'Living dictionary' student database program. See pages 27, 28.

Words Words Words (Acornsoft; Acorn BBC) Very simple illustrated vocabulary exercises. Students see object and have to type the word in. Ideal for beginners.

SPELLING

Bailiff (Sulis; Acorn BBC, Commodore 64) Features 1350 words which are often misspelt. Pictorial graphics. Completing words correctly keeps your hotel full. Mistakes empty the rooms and you go bust.

Besieged (Sulis; Acorn BBC, Commodore 64, Spectrum) over 450 hard-to-spell words: like **Bailiff**, but with siege theme.

****Master Spell** (MECC; Apple) Can be used by up to twelve students. List kept of all misspelt words that can be used to generate review lessons. Authoring facility.

Open Sesame (Sulis; Acorn BBC, Commodore 64) Like **Bailiff**, with Ali Baba graphics theme.

Speak 'n' Spell (Texas Instruments) An educational toy with a voice chip: the user hears a word and is asked to spell it on a keyboard.

****Spelling Volumes 1 and 2** (MECC; Apple) Practice in spelling over 1000 words.

Spelling Week by Week (Chalksoft; Acorn BBC) Almost 3000 words, presented in twenty-three weekly lessons. Keeps up to forty student records. Adopts the look, say, cover, write, check approach. Printer facility.

Starspell (Griffin and George; Acorn BBC) 'Flasher' program, which flashes up a word, then asks the student to type it.

VOCABULARY See also the VOCABULARY section, above, for programs useful for spelling.

READING

AUTHORING PACKAGES See GENERAL AUTHORING PACKAGES, below, for fill-in and multiple-choice authoring programs suitable for reading comprehension. Other authoring packages in this section.

Branching Story (Macmillan; RML380Z/480Z, Acorn BBC, Apple) A story is presented paragraph by paragraph. After each paragraph, the student selects options for continuing the plot. Write-your-own-story feature.

Class Reader 1: Outcome (Cambridge Language Arts; Acorn BBC) A total text deletion program. Users reconstruct letter by letter, word by word. Punctuation deletion option.

Class Reader 2: Yarns (Cambridge Language Arts; Acorn BBC) Branching story program. The demo stories can be extended and new stories created, which can subsequently be used with any of the Reader range.

Class Reader 3: Order, Order (Cambridge Language Arts; Acorn BBC) Jumbles letters in words, words in phrases or sentences, or sentences in paragraphs, for the user to unscramble. Also jumbles lists (dates, alphabetical, etc). Jumbled texts can be printed out as worksheets.

Clozemaster (Wida; Acorn BBC, Apple) Authoring program for producing cloze exercises up to fifty screen-lines long. Users decide their own deletion rate (every 5th-15th word). 'Help' and 'cheat' features. Printer facility. See page 37.

Clozewrite (Camsoft; Acorn BBC) Authoring program for cloze exercises up to eighteen screen-lines. Deletion rate from two to nine. Partial matching feature. Printer facility. Compatible with **Copywrite**.

Copywrite (ESM; Acorn BBC) (Camsoft; Commodore 4032/64/Vic) Version of **Storyboard**. Compatible with texts created for **Clozewrite**.

Crunch (Castle; Spectrum) The user is presented with sentences from which all the spaces have been omitted. The user has to identify word boundaries in order to restore the original sentence.

Developing Tray (Capital Media; RML380Z/480Z, Acorn BBC) A **Storyboard**-type program. A text is blanked out and users select letters, groups of letters or whole words to reconstruct it.

Gapfil (Pitmansoft; Apple, Acorn BBC) Authoring package for gap-filling exercise. Facility for storing and analysing results.

Gapkit (Camsoft; Acorn BBC, Commodore 4032) Gap-filling authoring package. Gaps can be whole words, parts of words, groups of words. Printer facility. See page 36.

Gapmaster (Wida; Acorn BBC) Gap-filling authoring package with alternative answers. User can scroll text and select gaps in any order.

****Gapper** (HRM; Apple) Students read a text and work through multiple-choice or cloze exercises. Preview and timing features. Authoring facility. Can also be used as a simple word-processor.

****Missing Links** (Sunburst; Apple, Atari, Acorn BBC, Commodore 64, IBM PC/PCjr, TRS 80) A literary passage appears with letters or words missing. Nine difficulty levels. Authoring facility.

Pinpoint (Wida; Acorn BBC, Spectrum) Authoring package. Students guess the titles of gradually revealed texts. See page 36 (**Close-up**).

Prediction (Camsoft; Acorn BBC) Student has to predict which of five words comes next in a text. Uses texts created for **Copywrite**.

****Puzzler** (Sunburst; Apple) Students use the strategies of predicting, confirming and integrating to solve each mystery story puzzle.

Quartext (Longman; Acorn BBC, Apple) A collection of four computer games: **Hopscotch** (a cloze variant); **Hide and See** (recreate the whole text word by word); **Tell-Tale** (**Storyboard** variant); **Cheat!** (**Storyboard** in competition with the computer: can you catch it 'cheating'?). Authoring facility. See page 45.

Readamatics (Longman; Acorn BBC, RML380/480Z) Cloze program. Mismatched words held for discussion with the teacher; help with spelling errors.

Reading for English (OUP; Acorn BBC, Apple, Commodore 64, IBM PC) A series of reading packages at different levels. Sets of texts with a variety of exercises, including comprehension questions, cloze, sentence building and word study. See page 33.

Screentest for FCE – see GRAMMAR.

Sentence Sequencing (Acornsoft; Acorn BBC) Students have to arrange sentences to form a paragraph. Authoring facility.

Spanish Gold (Chalksoft; Acorn BBC, Spectrum) A branching story with text and pictures.

Speedread (Wida: Acorn BBC) An authoring program which displays the chosen text for a certain length of time (any of nine speeds). Reading is followed by multiple-choice questions. Also has an untimed reading option. See pages 34-35.

****Story Tree** (Scholastic: Apple) Enables students to read and write branching stories.

Storyboard (Wida: Acorn BBC, Apple) Authoring program in which a text typed in (and saved) by the teacher is replaced by blobs and punctuation marks. Students reconstruct it by guessing words. 'Help' and 'cheat's functions. Printer facility. See pages 37-40, 45.

Storywriter (ESM: Acorn BBC) Two programs, **Storymaker** and **Storyreader**, allow users to write and read branching stories.

Text (Castle: Spectrum) Carries out a variety of operations including cloze, jumbling, space-stripping and Hangman on a given text.

Textbuild (Castle: Spectrum) Reconstruction program in which a text is built up from its constituent phrases.

Varietext (CUP: Acorn BBC, Apple) Text reconstruction program. The user chooses between alternative words and phrases. Authoring facility.

Venture Reader (unpublished: University of East Anglia) An ongoing reading project by David Clark and Jeremy Fox, with programming by Arthur Rope. Learner decides on text or skill focus: includes work on gist, scanning, grammar, vocabulary and discourse structure.

Word Sequencing (Acornsoft: Acorn BBC) Students have to arrange words to form a sentence. Authoring facility.

KEYBOARD SKILLS

****Master Type** (Scarborough Systems: Apple) Original typing tutor in the form of a space arcade game.

Typing Tutor (Contex Computing: Acorn BBC) Self-instructional typing tutor.

Vu-Type (BBC/Pitman: Acorn BBC) Drills and exercises for each finger, reports on speed and accuracy, varied screen colour combinations and choice of sound effects.

PUNCTUATION

Punctuation 1 and 2 (Chalksoft: Acorn BBC, Spectrum, Electron) Two programs which ask students to restore missing punctuation. Each program contains several different sentences which form a short story. Deals with full stops, capitals, commas and question marks.

Punctuation 3 and 4 (Chalksoft: Acorn BBC, Spectrum) Like Punctuation 1 and 2 but with more difficult punctuation such as speech marks and exclamation marks.

AUTHORING LANGUAGES

Microtext (Acornsoft: Acorn BBC) General-purpose programming language. The user designs a series of frames which can contain text or graphics.

****Superpilot** (Apple Inc: Apple) General-purpose programming language.

GENERAL AUTHORING PACKAGES

(More specific authoring packages are listed in relevant sections)

Author (ESM: Acorn BBC) Authoring package for creating quizzes, branching stories, adventures, teletext information systems etc.

Brainlearn (Studentlitteratur: IBM PC) Authoring system for CALL. Includes some ready-made exercises in English and French.

Choicemaster (Wida: Acorn BBC, Apple) Authoring program for writing multiple-choice tests. Random/linear and error messages option. Choice of tutorial mode (with immediate feedback) or test mode (with feedback delayed till the end of the test). See pages 10-11.

Comet (Wolfram Burghardt: Commodore 4032/8032) General-purpose CALL authoring package.

Computadril (available from Michael Carr, University of East Anglia: Apple) General-purpose CALL authoring package.

GAP-FILLING A number of gap-fill authoring packages are listed under READING, above.

Matchmaster (Wida: Acorn BBC) Authoring program for creating matching exercises. Features 80- and 40-column matching, Pelmanism (card memory game) and Snap (animated matching). See pages 9-10, 25.

Questionmaster (Hutchinson/Wida: Acorn BBC, Commodore PET, Apple) General-purpose question-and-answer authoring package. Alternative answers, pattern matching and error review features.

****Study Guide** (MECC: Apple) Can be used to create multiple-choice, true/false, matching or completion items. Printer facility.

****Teacher Utilities 2,3,4** (MECC: Apple) Authoring package for multiple-choice exercises, Hangman, word unscrambling, spelling memorisation amd spelling recognition. Printer facility.

****Teaching Assistant** (MECC: Apple, IBM PC) Create, edit and store sets of question-and-answer exercises. Printer facility. Recording of students' scores.

Tes/T (Lochee: BBC Micro) General-purpose CALL authoring package.

Testmaster (Wida: Acorn BBC) General question-and-answer authoring package. Writer program has word-processing text entry. Alternative answers and 'help' features. See pages 11-12.

WORD PROCESSING

ABC (Acornsoft: Acorn BBC) Very simple word-processing program.

****Applewriter II** (Apple Inc: Apple) Standard word-processor for the Apple.

****Bank Street Writer** (Scholastic: Apple) Simple word-processing package designed for use in schools.

Easyscript (Commodore Business Machines: Commodore 64) Inexpensive word-processing program.

Edspell (LTS: Acorn BBC) Simple word-processor with built-in 6000 word dictionary which also works with **View**, **Wordwise** and **Wordwise Plus**.

Edword2 (Clwyd Technics; Acorn BBC) Educational package that aims to teach word-processing.

Filewriter (Cyclops Educational Computing; Acorn BBC) Simple word-processor; can create text and graphics; double height characters and coloured text. On same disk is **Clozewriter** with which teachers can design their own cloze tests.

Fleet Street Editor (Mirrorsoft; Acorn BBC) Word-processing 'typesetting' program, enabling user to create and print pages of text and pictures. See page 59.

****Homeword** (Sierra On-Line; Apple) Simple word-processing package. Spelling checker also available.

Lingo (D.A. Hull; Acorn BBC) Works with Epson FX80 printer. Can display wide range of character sets on screen and on printer, including Greek and IPA symbols.

****Magic Slate** (Sunburst; Apple) User-friendly word-processing package designed for a variety of age-levels.

****Milliken Word Processor** (Milliken; Apple) Very easy to use. Icon-driven. Also has **Pre-Writing** and **Post-Writing** programs (see WRITING, below).

Mini-Office (Database; Acorn BBC, Amstrad 464) Includes word-processing, database, spreadsheet programs and linked graphics.

****The Newsroom** (Springboard; Apple, IBM PC/PCjr, Commodore 64) 'Typesetting' program enabling user to create newspaper-style text and layout. Five type styles and more than 600 ready-made pictures available.

****PFS:Write** (Scholastic; Apple) Easy-to-use word-processor; compatible with PFS:File and PFS:Report.

****Processing Words** (MECC; Apple; IBM PC) Using a simple electronic mail program, word-processing concepts are applied to electronic form letters and mass mailings.

Simply Write (Simple Software; Commodore Pet/64/Vic) Easy-to-use word-processor.

Superscript (Precision Software; Commodore) Word-processing package suitable for the small business user.

Tasword (Tasman Software; Spectrum) Inexpensive word-processing package for the Spectrum.

View (Acornsoft; Acorn BBC) Flexible word-processing program for the Acorn BBC and Electron micros.

Wordwise Plus (Computer Concepts; Acorn BBC ROM) Easy-to-use word-processor. Has 'file segment' feature which allows several files to be held in memory simultaneously; very useful for multi-user writing in class. See pages 51-52.

Write On (Arnold-Wheaton; Acorn BBC, Spectrum) Elementary word-processing and sentence building.

WRITING

Add-Verse (Cambridge Language Arts; Acorn BBC) A program for creating, storing and presenting pages of animated or still shape poems, pictures, diagrams or prose text.

BRANCHING STORIES See READING section, above, for branching story programs with authoring components: a useful purpose for creative student writing.

Class Writer (Cambridge Language Arts; Acorn BBC) Enables the typing in of pages of text and graphics, which can then be read on screen, printed out or used with any **Class Reader** program. Compatible with **Wordwise**

Deadline (CUP; Acorn BBC, Apple) Students have to work together to produce a guidebook for the area in which they live.

Edfax (Teemedia; Acorn BBC) Students can create an 'electronic magazine' by designing pages, layout and colours as well as entering text.

****Post-Writing** (Milliken; Apple) A package consisting of two spelling checker disks, two mechanics checker disks (checking on sentence length, commas with subordinating conjunctions etc) and a proof-reader disk that enables the teacher to add comments.

****Pre-Writing** (Milliken; Apple) Consists of **Brainstorming**, **Branching** and **Nutshelling** programs to encourage students to organise their writing. Works with the Milliken Word Processor.

Storyboard This and other authoring programs in the READING section, above, are suitable vehicles for student writing. See pages 37-40, 45.

Storyline (Capital Media; Acorn BBC) Suggests titles for stories that students can write (not necessarily on the computer).

Storywriter (ESM; Acorn BBC) Enables students to create and print out branching stories up to 50 screen-pages long. Calculates reading age of each story.

Tele-Book (4Mation Educational Resources; Acorn BBC) Allows up to fifteen pages of text and simple graphics to be created. Imaginative sample texts provided.

****Thinktank** (Living Videotext; Apple, Apple Macintosh, IBM PC) Useful for brainstorming activities, outlining and developing ideas, keeping records.

Tick-Tack (Primrose Publishing; Acorn BBC, Apple) Enables user to create business letters in several different languages.

****Tic-Tac-Show** (Scholastic; Apple) On-screen version of American noughts and crosses quiz show. The authoring facility is a suitable vehicle for student writing. See pages 55-56.

****Writing A Character Sketch** (MECC; Apple) Helps students to organise the writing of a character sketch.

****Writing A Narrative** (MECC; Apple) Helps students to organise the writing of a narrative.

Word-Dance (Cambridge Language Arts; Acorn BBC) To create poetry 'like living sculpture'.

SIMULATIONS

****America Coast to Coast** (CBS; Apple, Commodore, IBM PC) Students improve their knowledge of US geography and history by travelling to each of the fifty states and surveying names, capitals, sizes, mottos and selected industries.

Business Games (Acornsoft; Acorn BBC) Contains **Stokmark** and **Telemark** q.v.

Chain Gang (CUP; Acorn BBC) Industrial relations simulation for up to five teams of management and workers. Includes worksheets and other paper materials.

Current Account Package (Interface Educational; Acorn BBC) Banking simulation. Customers can pay in money, write cheques, use cash card facilities, make credit card payments, standing orders, direct debits etc.

Decision-Taker (Longman; Acorn BBC, Apple) Students have to allocate labour to different tasks on an industrial production line.

Dictator (DK Tronics; Spectrum) The student 'rules' a kingdom.

Discovering the Electronic Office (McGraw-Hill; Acorn BBC) The use of information technology in a travel agent's airline booking system. Uses role-playing techniques. Topics include communications, map-reading, composing letters, typing correspondence.

****Dream House** (CBS; Apple, Atari, Commodore, IBM PC) Students create homes, designing exteriors and decorating and furnishing rooms.

Entrepreneur (Collins; Spectrum, Commodore 64) Deals with the fundamental principles of business: balance sheets, profit and loss, cash flow, cash requirements.

Estate Agent (Longman; Acorn BBC, Apple, RML 380/480Z) Students run an estate agent's office.

Exploration (Heinemann; Acorn BBC, RML 480Z) Includes programs **Tomb Adventurer**, **Star Gazer**, **Mapping Skills**, **Spelling/Word Finder**.

Farm (Primary Programs; Acorn BBC) Students have to manage a five field arable farm for a year, making decisions about what crops to plant, when to fertilise etc.
Fast Food (CUP; Acorn BBC, Apple) Students run a fast food stall, taking into consideration the weather, number of visitors the previous year etc. Multi-user network facility.
Food (Heinemann; Acorn BBC, RML 480Z) Programs include **Dairy Farmer**, **Growing a Plant**, **Shopkeeper**, **Spelling/Word Finder**.

Football Manager (Addictive Games; Spectrum) Manage your own football team for a number of seasons. See page 68.

GB Ltd (Simon Hessel; Acorn BBC, Spectrum 48K) Run Britain for five years. Described on pages 66-67.

Homes (Heinemann; Acorn BBC; RML 480Z) Five programs on the theme of homes, including **Central Heating**, **Home Finances**, **Town Planning**, **Spelling/Word Finder**.

Inheritance (Simon Hessel; Acorn BBC) Stock exchange and gambling simulation.

Introducing Geography (BBC Publications; Acorn BBC) Four simulations: climbing Mount Everest; being a nomad in the Sahara; flying a plane to Los Angeles; surviving a plane crash and escaping down river.

Kon-Tiki (Golem; Acorn BBC) Based on Thor Heyerdahl's Kon-Tiki expedition. Students record on a map the raft's position and enter notes in the logbook on the creatures found, unusual events and storms.

Let's Explore London (Cambridgeshire Software House; Acorn BBC, RML) Simulation of a journey around London, to be used by groups of students as part of a larger project. The database has over 150 places of interest. Authoring facility.

Locate an Oil Rig (Nelcal; RML 380Z) Students have to choose a drill rig and a location; they then have to buy a production platform and get the oil ashore.

Magnus Connection (BP Educational; Acorn BBC, RML) Simulates the computer system used by BP to control the movement of personnel to and from the Magnus oil platform which is situated northeast of Shetland.

Making Ends Meet (CUP; Acorn BBC) Designed to give school-leavers insight into personal financial management. All the prices and messages can be updated or changed.

Mallory (MEP; Acorn BBC) Simple whodunnit simulation. Users have to identify the thief by searching the house for clues. Different each time it is used.

****Market Place** (MECC; Atari, Commodore 64) Four business simulations: **Sell Apples**, **Sell Plants**, **Sell Lemonade** and **Sell Bicycles**.

Mary Rose (Ginn; Acorn BBC) Simulates the raising of the Mary Rose from the seabed in Portsmouth Harbour.

Micros in Business (Acornsoft, Acorn BBC) Five modules: **Personnel** (recruitment, promotion, manpower projects and holiday chart), **Spreadsheet**, **Word Processor** (a step-by-step introduction), **Database**, and **Planner** (daily records of diary entries).

Moneyplan (Careers Consultants Ltd; Acorn BBC) Personal money management simulation. **Payslip** is an aid to understanding the structure of a payslip; **Budget** deals with the forward planning of expenditure; **Credit** compares the various forms of instalment credit. Written in conjunction with Lloyds Bank.

Motorway Route (Longman; Acorn BBC, Apple, RML 380/480Z) Students plan and discuss the environmental impact of a motorway passing through a landscape with rural, low and high density housing areas.

****The Oregon Trail:** See **Simulations** (MECC), below and pages 67–68.

Osprey (Bourne Educational; Acorn BBC, Electron, Amstrad 464, Commodore 64) Players protect the precariously small Scottish osprey population against egg-stealers, hunters and inquisitive tourists. Ten skill levels. See page 68.

Paraffin Pile (BP Educational; Acorn BBC) Concentrates on the concept of 'marketing mix' with reference to price, advertising and sales staff.

Running the British Economy (Longman; Acorn BBC, Apple, RML 380Z) Users decide on changes in government expenditure, money supply and tax rates in order to fine tune the economy and eliminate inflationary or deflationary gaps. Difficult stuff.

Sailing Ships Game (Longman; Acorn BBC, Apple, RML 380/480Z) Students navigate a large sailing ship around the oceans, coping with hurricanes, heavy seas and ice.

****Simulations** (MECC; Apple, Commodore 64, Radio Shack 111/4) **Furs** simulates the fur trade in eastern North America in the 1770s. **The Oregon Trail** simulates a trip by covered wagon from Missouri to Oregon in 1847. **Voyageur** simulates the transportation of furs by canoe in northern Minnesota and southern Ontario in the early 1800s.

Sixgam (Pitmansoft; Acorn BBC) Up to six teams act as firms which compete in selling word-processors in international markets for up to a decade.

Slick (BP Educational; Acorn BBC) Oil slick prevention simulation for ESP students.

Stokmark (Acornsoft; Acorn BBC) Part of **Business Games** package. Groups of students compete, the aim being to increase £1,200 to £5,000 by buying and selling shares. See page 67.

Teddytronic (Longman: Acorn BBC, Apple, RML 380/480Z) Users manage a firm producing electronically controlled teddy bears and decide on output, labour and wages, prices and advertising, and loans.

Telemark (Acornsoft: Acorn BBC) Part of **Business Games** package. Group of students run a television factory.

Town (Cambridgeshire Software House: Acorn BBC) Students construct a town plan; they can then print it out and move people around it.

Travel (Heinemann: Acorn BBC, RML 480Z) Five programs on the theme of travel. Includes **Car Journey**, **Ballooning**, **Special Agent** (chase a spy across Europe), **Punctuation Practice**, **Spelling/Word Finder**.

Unisim (Unilever Educational Liaison: Acorn BBC) Business simulation for up to seven teams. Decisions have to be made about production, marketing, selling, finance and planning. Difficult.

World Travel Game (Simon Hessel: Acorn BBC) Tests basic skills in geography, strategic planning and money management. Players have to obtain six souvenirs from six different countries and return to London. Involves foreign currency, hijacks, bankrupt airlines and strikes.

Yellow River Kingdom (BBC Publications: Acorn BBC Welcome cassette/disk) Students rule over a kingdom, making decisions about manpower etc. Described on pages 64-66.

ADVENTURES

****Adventure Construction Set** (Nibble: Apple) Authoring package for adventure games.

****Adventure Master** (CBS: Apple, Atari, Commodore 64, IBM PC) Authoring package for adventure games.

****Adventure Writer** (Codewriter Corporation: Atari, Commodore 64, IBM PC) Authoring package for adventure games.

Colossal Adventure (Level 9 Computing: Acorn BBC) Challenging and time-consuming.

****Computer Novel Construction Set** (Hayden: Apple) Authoring package for adventure games.

Countdown to Doom (Acornsoft: Acorn BBC) Space adventure. A battle against time after forced landing on alien planet with corrosive atmosphere and treasure. Challenging.

****Create-a-Venture** (Available from Peter Lee: Apple) Authoring package for adventure games.

****Felony** (CBS: Apple, Commodore, IBM PC) Detectives fight a crime wave in the city of Huxley. Up to four players competing with each other. See page 76.

Flash Rogers (unpublished: Acorn BBC, Apple) One-lesson adventure. See pages 71-73.

Flowers of Crystal (4Mation: Acorn BBC, Spectrum, RML 480Z) Save a world from ecological disaster. Audio cassette gives the background: you do the rest. Very good reviews.

****Genesis** (Dynacomp: Apple) Authoring package for adventure games.

Granny's Garden (4Mation: Acorn BBC, Spectrum, RML 480Z) Popular adventure for younger learners.

The Hitchhiker's Guide to the Galaxy (Infocom: Apple) Manic space adventure based on radio comedy series by Douglas Adams.

The Hobbit (Melbourne House: Acorn BBC, Spectrum) Adventure based on JRR Tolkien's novel. Nice graphics.

The Last Adventure (LTS: Acorn BBC) Authoring package for adventure games. Can be used with a concept keyboard. Example adventure included.

London Adventure (CUP: Acorn BBC, Apple) Multiple-choice adventure for EFL students, set in London. Described on page 75.

Macbeth (Creative Sparks: Commodore 64) Four adventure games based on Shakespeare's Macbeth.

****Murder by the Dozen** (CBS: Apple, Commodore, IBM PC) Students have to solve twelve crimes, along the lines of **Felony**.

****Mystery House** (Sierra On-Line: Apple) Users explore a large abandoned Victorian house in order to find hidden jewels and discover a murderer. See pages 73-74.

Philosopher's Quest (Acornsoft: Acorn BBC) Treasure-hunting adventure. Challenging.

The Quill (Mirrorsoft: Acorn BBC, Spectrum, Amstrad 464) Authoring package for adventure games.

Spooky Manor (Acornsoft: Acorn BBC) Spooky adventure. Nice system of four text windows, one for each player. Good maps available.

Tombs of Arkenstone (Arnold-Wheaton: Acorn BBC) Supplied with booklets and maps. Allows students to author their own adventures within rather strict limits.

The Wizard and the Princess (Sierra On-Line: Apple) Typical commercial adventure game with graphics. See pages 70-71.

Your Adventure (LTS: Acorn BBC) Authoring package for adventure games.

LISTENING AND INTERACTIVE VIDEO

Autotutor (unpublished software by David Little: Acorn BBC) An authoring package enabling the teacher to link computer and VHS videocassette recorder to create I.V. exercises. See useful addresses.

Back Home (Wida: Acorn BBC, Apple) The Longman *Back Home* cassette of twelve EFL songs, the *Back Home Companion* (comprehension and other classroom activities) and computer programs for Cloze, Storyboard and Dictation exercises.

Bid for Power (BBC: Acorn BBC) Videodisk version of the already published Business English materials. I.V. version by Brighton Polytechnic. See page 83.

Danger Mission – see **Eurocentre I.V. Disk.**

Eurocentre I.V. Disk (unpublished) Consists of two programs: **Getting the Message** and **Danger Mission**, plus related library material. See page 83.

Flight 505 (BBC) An interactive videodisk designed for Japanese businessmen.

Mastwriter (Mast Learning Systems: IBM PC) An authoring package for question-and-answer activities using the Tandberg AECAL cassette recorder.

Micro Stories (Wida; Acorn BBC, Apple) Audio cassette of twenty-four short stories and anecdotes by Josephine Jones, plus Cloze, Storyboard and Dictation computer programs.

Micro Verse (Wida; Acorn BBC, Apple) Audio cassette of twenty-four poems by Josephine Jones, plus Storyboard, Cloze, and Dictation computer programs.

Montevidisco (Brigham Young University) Interactive videodisk for learners of Spanish which simulates a visit to a Mexican village.

Storyboard Plus (Wida; Acorn BBC, Apple) Eighteen anecdotes by Andrew Harrison on cassette. The **Storyboard** disk contains well-formed summaries of each story. See page 40.

DATABASES

Census Database (Nelcal; RML 380Z and 480Z) Data from the 1981 census on major British cities. Data can be analysed at ward level, and on six contrasting residential zones. Users can also compile their own census database.

****Data Handler in the Classroom** (MECC; Apple) Designed to teach database concepts.

Datastore (Wida; Acorn BBC) Easy-to-use database. Can hold 1100 entries of up to 155 characters on 80-track disk. Variety of printer options.

Factfile (CUP; Acorn BBC, RML480Z, Spectrum, Apple) Simple database package in use in over 85 per cent of UK primary schools. Teachers' Handbook gives step-by-step instructions on using programs. Also see **Picfile**.

****Food Facts** (MECC; Apple, Commodore 64) Students analyse their personal food habits and expand their knowledge of nutrition and dietary requirements.

General Household Survey (Longman; Acorn BBC) Three disks contain information on poverty, class and gender in Britain taken from the General Household Survey of 1979. Documentation enables the user to follow a short course on the chosen theme, extracting data from the computer at appropriate points.

Library (Resource Regional Software Service; Acorn BBC) A database for library books that children can operate. It holds a large number of records and can search on various keywords.

Macroeconomic Database (Longman; Acorn BBC, Apple, RML 380Z) Comprises national income and related data on 25 countries for 1959-81, a suite of statistical programs for manipulating the data and testing hypotheses and a data manager program with update facility.

Masterfile (Beebugsoft; Acorn BBC) All-purpose database package. Compatible with **View** and **Wordwise**. See page 86.

****PFS:File** and **PFS:Report** (Scholastic; Apple) **PFS:File** is a simple database package; **PFS:Report** prepares printed reports in the form of columns using data files created with **PFS:File**.

Picfile (CUP; Acorn BBC) Uses datafiles created by **Factfile** and allows students to make pictorial representations of the information. The data may be displayed as a count graph (bar chart), cumulative count graph or scattergram. Includes sample files.

Simply File (Simple Software; Commodore Pet/64/Vic) Practical, robust and easy to use.

Wordstore See under VOCABULARY

Useful addresses

Acornsoft Ltd. Cambridge Technopark, 645 Newmarket Road, Cambridge CB5 8PD.
Addictive Games, Albert House, Albert Road, Bournemouth BH1 1BZ.
ALBSU, Kingsbourne House, 229/231 High Holborn, London WC1V 7DA.
Applied Systems Knowledge (ASK), London House, 68 Upper Richmond Road, London SW15 2RP.
Arnold-Wheaton, Parkside Lane, Dewsbury, Leeds LS11 5TD.
AVC Software, PO Box 415, Harborne, Birmingham B17 9TT.
AVP Computing, Hocker Hill House, Chepstow, Gwent NP6 5ER.
BBC Publications, 35 Marylebone High Street, London W1M 4AA.
Beebugsoft, PO Box 50, St Albans, Herts.
Bourne Educational Software Ltd, Bourne House, The Hundred, Romsey, Hants SO5 8BY.
BP Educational Service, PO Box 5, Wetherby, W. Yorks LS23 7GH.
British Council, 10 Spring Gardens, London SW1A 2BN.
Burghardt W, Dept of Modern Languages, University of Western Ontario, London, Ontario, Canada, N6A 3K7.
CALICO (Computer Assisted Language Learning Instruction Consortium), 3078 JHKB, Brigham Young University, Provo, Utah 84062, USA.
Cambridge Language Arts Software Ltd, 2 Howard Court, Howard Road, Cambridge CB5 8RB
Cambridge University Press (CUP), The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU.
Cambridgeshire Software House Ltd, Town Hall, St Ives, Huntingdon, Cambs PE17 4AL.
Camsoft, 10 Wheatfield Close, Maidenhead, Berks SL6 3PS.
Capital Media, Inner London Educational Computing Centre, John Ruskin Street, London SE5 OPQ.
Careers Consultants Ltd, 12/14 Hill Rise, Richmond, Surrey TW10 6UA.
Carr M, EUR, University of East Anglia, Norwich NR4 7TJ.
Castle Software, PO Box 116, Eastbourne, E. Sussex BN22 9JZ.
CBS Software, 1 Fawcett Place, Greenwich, CT 06386, USA.
Council for Educational Technology (CET), 3 Devonshire Street, London W1N 2BA.
Centre for Information on Language Teaching (CILT), Regent's College, Inner Circle, Regent's Park, London NW1 4NS.
Chalksoft Ltd, PO Box 49, Spalding, Lincs PE11 1NZ.
Clwyd Technics Ltd, Unit 4B, Antelope Industrial Estate, Rhydymwyn, Mold, Clwyd CH7 5JH.
Codewriter Corporation, 7847 North Caldwell Avenue, Niles, IL 60648, USA.
Collins ELT, 8 Grafton Street, London W1X 3LA.
Computer Concepts, Gaddesdon Place, Hemel Hempstead, Herts HP2 6EX.
Contex Computing, 15 Woodlands Close, Cople, Bedford MK44 3HE.

Creative Sparks, 296 Farnborough Road, Farnborough, Hants GU14 7NF.
Cyclops Educational Computing, 2 White Knowle Road, Buxton, Derbyshire SK17 9NH.

Database, 27 City Road, Stoke, Staffordshire.
DesignWare, 185 Berry Street, San Francisco, CA 94107, USA.
DK Tronics Ltd, Unit 6, Shire Hill Industrial Estate, Saffron Walden, Essex CB11 3AQ.
Dynacomp Inc, 1064 Gravel Road, Webster, NY 14580, USA.
ESM, Duke Street, Wisbech, Cambs PE13 2AE.

4Mation Educational Resources, Linden Lea, Rock Park, Barnstaple, Devon EX32 9AQ.

Ginn & Co Ltd, Prebendal House, Parson's Fee, Aylesbury, Bucks HP20 2QZ.
Griffin and George Software, 285 Ealing Road, Alperton, Wembley, Middlesex HA0 1HJ.

Hayden Software Company Inc, 600 Suffolk Street, Lowell, MA 01854, USA.
Heinemann Computers in Education, 22 Bedford Square, London WC1B 3HH.
HRM Software, 175 Tompkins Avenue, Pleasantville, NY 10570, USA.
Hull DA, 20 Heath Part Avenue, Halifax HX1 2PP.
Hutchinson Software 17-21 Conway Street, London W1P 6JD.

Infocom Classics, 125 Cambridge Park Drive, Cambridge, MA 02140, USA.
Interface Educational, 19 Bank Street, Kirriemuir, Angus DD8 4BE.

Jacaranda Wiley Software, Baffins Lane, Chichester, W. Sussex PO19 1UD.

Learning and Training Systems Ltd (LTS), Haydon House, Alcester Road, Studley, Warwickshire B80 7AP.
LCL, 26 Avondale Avenue, Staines, Middlesex.
Lee P. Department of Linguistics, University of Wisconsin, Box 413, Milwaukee, WI 53201, USA.
Leisure Genius, 2-4 Vernon Yard, 119 Portobello Road, London W11 2DX.
Level 9 Computing, 229 Hughenden Road, High Wycombe, Bucks HP13 5PG.
Living Videotext, 2432 Charleston Road, Mountain View, CA 94043, USA.
Lochee Soft, Oak Villa, New Alyth, Perthshire PH11 8NN.
Longman Group UK Ltd, Longman House, Burnt Mill, Harlow, Essex CM20 2JE. (Please address enquiries about ELT Software to Longman ELT Software; all other software to Longman Micro Software.)
Lotus Development, Consort House, Victoria Street, Windsor, Berks.

Macmillan Education Ltd, 4 Little Essex Street, London WC2R 3LF.
Mast Learning Systems Ltd, 3 Wetherby Mews, London SW5 0JG.
Max Hueber Verlag, D-8075 Ismaning, Max Hueber-Str 4, W. Germany.
McGraw-Hill Book Co, Software Support Service, Shoppenhangers Road, Maidenhead, Berks SL6 2QL.
MECC (Minnesota Educational Computing Corporation), 3490 Lexington Avenue North, St Paul, MN 55126, USA.

Melbourne House Software, 131 Trafalgar Road, London SE10.
Milliken Publishing Company, 1100 Research Boulevard, PO Box 2157, St Louis, MO 63132, USA.
Mindscape, 3444 Dundee Road, Northbrook, Illinois 60062, USA.
Mirrorsoft, Poulton, Bristol BS18 5BR.
MUSE, PO Box 43, Hull.

National Interactive Video Centre, 27 Marylebone Road, London NW1 5JS.
National Centre for CALL, School of Language Studies, Ealing College of HE, St Mary's Road, London W5 5RF.
Nelcal, Thomas Nelson & Sons Ltd, Mayfield Road, Walton-on-Thames, Surrey KT12 5PL.
Nibble, 45 Winthrop Street, Concord, MA 01742, USA.
Nycall, (North Yorkshire CALL Project), Ripon Language Centre, The College, College Road, Ripon, N. Yorks HG4 2QX.

Oxford University Press (OUP), Walton Street, Oxford OX2 6DP.

Pitmansoft, Pitman Publishing Ltd, 128 Long Acre, London WC2E 9AN.
Precision Software, 4 Park Terrace, Worcester Park, Surrey KT4 7JZ.
Primary Programs Ltd, Claypits, Debden Road, Saffron Walden, Essex.
Primrose Publishing, 11 Church Street, Thriplow, Cambridge
Psion, 18-19 Harcourt Street, London W1H 1DT.

Regents/ALA, Two Park Avenue, New York, NY 10016, USA.
Resource Regional Software Service, S. Yorks and Humberside RIC, Exeter Road, Off Coventry Grove, Doncaster DN2 4PY.

Scarborough Systems, Inc, 25 North Broadway, Tarrytown, NY 10591, USA.
Scholastic Software, 730 Bway, 9th Floor, NYC 10003, USA.
Sierra On-Line Inc, Sierra On-Line Building, Coarsegold, CA 93614, USA.
Simon Hessel Software, 15 Lytham Court, Cardwell Crescent, Sunninghill, Berks.
Simple Software Ltd, 15 Havelock Road, Brighton, Sussex BN1 6GL.
Software Production Associates, PO Box 59, Leamington Spa, Warwickshire, CV31 3QA.
Springboard Software Inc, 7807 Creekridge Circle, Minneapolis, Minnesota 55435, USA.
Studentlitteratur, Lunds Universitet, Skomakaregatan 8, 22350 Lund, Sweden.
Sulis Software, Orlando Language Texts Ltd, 4 Church Street, Abbey Green, Bath BA1 1NL.
Summer 76 Software, 61 Beardsley Way, Acton, London W3 7YQ.
Sunburst Software, 39 Washington Avenue, Pleasantville, NY 10570, USA.

Tandberg Ltd, Unit 1, Revie Road Industrial Estate, Elland Road, Leeds LS11 8JG.
Tasman Software, 17 Hartley Crescent, Leeds LS6 2LL.
Technomatic, 17 Burnley Road, London NW10 1ED.

Unilever Educational Liaison, PO Box 68, Unilever House, Blackfriars, London EC4P 4BQ.

Wida Software, 2 Nicholas Gardens, London W5 5HY.

(Source: Jones, C., Fortescue, S. 1987. Using Computers in the Language Classroom. Essex: Longman Group UK Limited. p.140-148)

Table 1: ELT SOFTWARE—level of main language focus

	LETTERS	WORDS	SENTENCES	TEXTS	INTEGRATED LANGUAGE
Code Breaker		X	X		
Deadline				X	X
Fast Food					X
Letterhunt	X	X			
London Adventure					X
Varietext		X	X	X	
Text Play				X	
Wordplay		X	X		
Fun with Texts				X	
Copywrite				X	
Quartext				X	
Quartext Plus Six				X	
Quartext (Building Strategies)				X	
Screentest Elementary		X	X		
Screentest for First Certificate		X	X		
Screentest for Proficiency		X	X		
Decision Taker					X
Storyboard II				X	
Clozemaster				X	
Crossword Challenge		X			
Crossword Master		X			
Crossword Mill		X			
Wordstore		X			
Vocab		X			
Matchmaster		X	X		
Pinpoint				X	
Choicemaster II		X	X		
Testmaster		X	X	X	
Gapmaster		X	X	X	

(Source: Scarbrough, D. 1988. "Software for English Language Teaching - Survey Review". ELT Journal Vol.42/4 October. p.313.)

*Table 2: Evaluation of packages under review**

	PRESENTATION	PERFORMANCE	LANGUAGE-LEARNING VALUE
Code Breaker	■■■	■■■	■■■
Deadline	■■■	■■■	■■
Fast Food	■■■	■■■■	■■■■
Letterhunt	■■	■■	■■
London Adventure	■■■■	■■■■	■■■■
Varietext	■■■	■■■	■■■
Text Play	■■■	■■■	■■■
Wordplay	■■■	■■■	■■■
Fun with Texts	■■■	■■	■■■
Copywrite	■■	■■	■■■
Quartext	■■■	■■■	■■■■
Quartext Plus Six	■■■	■■■	■■■■
Quartext (Building Strategies)	■■■	■■■	■■■■
Screentest Elementary	■■■	■■■■	■■■
Screentest for First Certificate	■■■	■■■■	■■■
Screentest for Proficiency	■■■	■■■■	■■■
Decision Taker	■■■■	■■■■	■■■■
Storyboard II	■■■■	■■■■■	■■■■
Clozemaster	■■■■	■■■■■	■■■■
Choicemaster II	■■■■	■■■■■	■■■■
Testmaster	■■■■	■■■■■	■■■■
Gapmaster	■■■■	■■■■■	■■■■
Matchmaster	■■■■	■■■■■	■■■■
Wordstore	■■■■	■■■■■	■■■■
Vocab	■■■■	■■■■■	■■■■
Crossword Challenge / Crossword Master	■■■	■■■■	■■■
Crossword Mill	■■■	■■■■	■■
Pinpoint	■■■■■	■■■■■	■■■■

* This is a generalized evaluation and should not be taken too seriously. PRESENTATION covers everything to do with the appearance of the software screen layout and design, use of colour, etc. PERFORMANCE relates to how well the software works and the range of features provided. LANGUAGE-LEARNING VALUE is a personal view of the value to be derived by a learner from use of the program. A five-point scale is used, with 5 at the top end.

(Source: Scarbrough, D. 1988. "Software for English Language Teaching - Survey Review". ELT Journal Vol.42/4 October. p.314.)