1997

Implementing Computer-Assisted Language Learning in an ESL Program Serving Adult Refugees From Vietnam: Findings From a Qualitative Case Study.

Susan Mary Weishar
Louisiana State University and Agricultural & Mechanical College

Follow this and additional works at: https://digitalcommons.lsu.edu/gradschool_disstheses

Recommended Citation
https://digitalcommons.lsu.edu/gradschool_disstheses/6454
INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI
A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA
313/761-4700  800/521-0600

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
DEDICATION

I dedicate this dissertation to my mother, Marie Terese Carlson Weishar, and my father, Richard Ward Weishar. Thank you for your unwavering encouragement and support, and for always believing in me.
ACKNOWLEDGMENTS

It has been a long road, and I want to express my gratitude to those who helped me complete the journey. First I want to thank Dr. Kim MacGregor, my chairperson and friend, for her advice, encouragement, and support through the years. I am most grateful to Dr. Terry Geske, Dr. Richard Fossey, Dr. Eugene Kennedy, and Dr. David Smith for serving on my committee and for the support and encouragement you have always provided me.

Many thanks to Mr. Emmeth Funches, whose technical wizardry supported the operation of the computer lab from its inception. I am indebted to Mr. Minh Pham, who served as my interpreter and research assistant. I also want to thank my friend and colleague, Virginia Moodie, for her valuable insights and suggestions regarding the role of computers in an ESL program serving adult refugees. Special thanks to Dr. Carl Bankston for his assistance with the census data.

The support of family and friends kept me going at times. I especially want to thank my parents for their steadfast encouragement and support. Many thanks also to my friend and grad school cohort, Dr. Maryann Durland.

Last but certainly not least, I want to thank the teachers and students of the Versailles Gardens ESL program. For your patience and cooperation throughout the research process I will be forever in your debt. Thank you
for allowing me to explore with you teaching and learning with CALL.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEDICATION</td>
<td>ii</td>
</tr>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>iii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>viii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>ix</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>x</td>
</tr>
</tbody>
</table>

## CHAPTER

### I INTRODUCTION

- Overview of the Problem Area: 1
- Why Study CALL in an ESL Program Serving Adult Students: 7
- Purpose of the Study: 12
- Research Questions: 13

### II REVIEW OF THE LITERATURE

- Innovation in Education and Educational Leadership: 17
  - Overview of Studies on Innovation in Education: 17
  - Educational Leadership and Innovation: 24
- Research on CALL: 30
  - Comparative Research on CALL: 30
  - Models of the Role of the Computer in Language Learning: 35
- Post-Comparative CALL Research: 44
- Overview of the Qualitative Research Design: 49
  - Assumptions of a Qualitative Research Design: 49
  - Characteristics of a Qualitative Research Design: 51

### III METHODOLOGY AND DESIGN

- Research Setting and Background: 58
  - The Vietnamese Community of Versailles Gardens: 60
  - Description of the Immigration and Refugee Services ESL Program: 63
  - Background and Description of the Study Site: 65
  - Description of Project Software: 68
  - Description of the Two Units of Analysis: 70
- Data Collection: 77
  - Research Protocol: 77
  - Parameters of Data Collection: 77
  - Data Collection Procedures: 79
- Data Analysis: 88
  - Techniques Used to Analyze Data: 88

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>SECOND STUDENT QUESTIONNAIRE: ENGLISH AND VIETNAMESE VERSIONS</td>
<td>264</td>
</tr>
<tr>
<td>C</td>
<td>THIRD STUDENT QUESTIONNAIRE: ENGLISH AND VIETNAMESE VERSIONS</td>
<td>273</td>
</tr>
<tr>
<td>D</td>
<td>TEACHER CONSENT FORMS</td>
<td>288</td>
</tr>
<tr>
<td>E</td>
<td>STUDENT CONSENT FORMS: ENGLISH AND VIETNAMESE VERSIONS</td>
<td>293</td>
</tr>
<tr>
<td>F</td>
<td>RESEARCH ASSISTANT'S INTERVIEW GUIDE</td>
<td>301</td>
</tr>
<tr>
<td>G</td>
<td>TEACHER INTERVIEW GUIDE</td>
<td>305</td>
</tr>
<tr>
<td>H</td>
<td>START LIST OF CODES</td>
<td>308</td>
</tr>
<tr>
<td>I</td>
<td>FINAL LIST OF CODES</td>
<td>311</td>
</tr>
<tr>
<td>J</td>
<td>INSTRUCTIONS FOR USE OF ENGLISH EXPRESS</td>
<td>316</td>
</tr>
<tr>
<td>K</td>
<td>TIPS FOR STUDYING ENGLISH WITH ENGLISH EXPRESS</td>
<td>318</td>
</tr>
<tr>
<td>L</td>
<td>COMPUTER LAB SESSION REPORT FORM</td>
<td>321</td>
</tr>
<tr>
<td></td>
<td>VITA</td>
<td>323</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table 3.1  Average Daily Class Attendance Per Month.....74

Table 4.1  Problems/Barriers Encountered During Adoption and Early Implementation, Solutions, and Administrator Roles..........113

Table 4.2  Stages of Concern About the Innovation......115

Table 4.3  Problems/Barriers Encountered During Later Implementation, Solutions, and Administrator Roles: June 17, 1995- March 3, 1996................................137

Table 4.4  Changes in the Organization of the Learning Environment on Computer Nights During the Implementation Process: Beginners' Class.................................153

Table 4.5  Changes in the Organization of the Learning Environment on Computer Nights During the Implementation Process: Advanced class...............................154

Table 4.6  Class Preferences for Computer Lab Time.....199

Table 4.7  Preferences for Time on Computers of Students Who Responded to All Three Surveys.................................200

Table 4.8  Student Preferences for Working with a Partner in the Computer Lab.............................208

Table 4.9  Student Ranking of Features/Characteristics of CALL Programs According to Helpfulness in Learning English..........................215

Table 4.10 Student Ranking of Skill Areas Helped Most by CALL.................................217

Table 4.11 Mean RSD Concept Scores by Learning Group...223
LIST OF FIGURES

Figure 4.1  Robustness Semantic Differential ............. 222
ABSTRACT

This qualitative case study explored the implementation of computer-assisted language learning (CALL) in an ESL program serving adult refugees and immigrants from Vietnam. The case consisted of two sub-cases: implementation of CALL in the beginners' class and implementation of CALL in the advanced beginners' class. The investigation, which lasted 46 weeks, was intense and holistic. The researcher was also the administrator of the refugee program.

The research methodology used was largely qualitative in design, so that an emic understanding of how the innovation impacted the actors and brought about change in the learning environment could be constructed. Quantitative research methods were employed to clarify patterns in the data that had emerged during fieldwork.

Three main areas of inquiry emerged during the research process, which can be grouped according to issues having to do with the following: implementing CALL; teaching with CALL; and learning with CALL. In each of these areas the main focus of inquiry became the perspective of one of the three groups of actors who composed the case, i.e. the administrator, the teachers, and the students, respectively.

Major findings indicated that the implementation of the innovation required the administrator to assume new
organizational roles involving the coordination of the target system.

During the implementation process it became apparent that good teaching was essential in making the most effective use of CALL, and that training in second language pedagogy needed to be incorporated into CALL workshops.

The addition of the computer lab to the physical environment of learning necessitated major changes in the logistics of learning, which led to changes in the organization and content of classroom lessons. The two project teachers' perceptions of the importance of CALL in how they viewed themselves as teachers and planned their lessons differed considerably.

Most students enjoyed and felt they benefited from studying English with computers. However, older students with very low English proficiency were unable to sustain an interest in CALL. Factors that appeared to play a role in engaging and maintaining student interest in CALL included student motivation, age, English proficiency, previous education, and compatibility of lab partners.
CHAPTER I
INTRODUCTION
Overview of the Problem Area

Teaching adult refugees English and orienting this population to their new life in the United State is a considerable challenge. Due to funding constraints, quite often students in English-as-a-Second Language (ESL) programs for refugees are grouped together in multi-level classrooms, which- to accommodate varying arrival dates- frequently allow students to enter the program at any time1. Students in such multi-level, open-entry programs come from a variety of educational, social, and economic backgrounds. The major instructional goal of ESL programs for refugees funded by the Office of Refugee Resettlement - the principal source of funding for providers of ESL instruction for refugees- is "survival English" (Northwest Regional Laboratory, 1982), where the emphasis is on the development of oral and aural skills necessary to negotiate

1 The U.S. Office of Refugee Resettlement (ORR) funds the states to provide a broad range of social services such as English language training, employment services, and vocational training to help refugees achieve self-sufficiency as quickly as possible. In 1981 ORR awarded a contract to the Northwest Regional Laboratory to conduct a national study of the extent and effect of English language training for refugees. The final report, produced in three phases, is the only study to date that examines on a nation-wide basis ESL programs for refugees funded by ORR. Approximately 70% of the 327 programs funded by ORR to provide ESL services to refugees completed the study survey. Three-fourths of the respondents reported using an open-entry policy for enrolling students.
routine social and work situations. ESL programs for refugees also provide students with orientation to U.S. culture and society. A focus here is often to prepare students for the world of work, such as the values and expectations of American employers and the vocabulary of likely entry-level jobs.

A premise of this study was the assumption that computer-assisted language learning (CALL) could help meet the challenges facing administrators and teachers of ESL programs for adult learners. That is one reason why the administrator of the program to be examined, this study's author, decided to implement CALL in an ESL program serving adult refugees in the New Orleans area. I was convinced that computer-assisted instruction could play an important role in improving the quality of instruction the program offered.

Educators and researchers have observed that computer-assisted learning is particularly well-suited to the needs of adult students. Well-written software can provide reinforcement, proper sequencing of learning tasks, interaction, modeling, and opportunities for discussion with others about the learning experience (Ewing, Ewing, London, & Ramirez-Ponce, 1986). For learners who were unsuccessful with traditional paper-and-pencil educational activities, computers are thought to offer new hope (Office of Technology Assessment, 1993). Computers allow for a high degree of individualization because instruction can be
tailored to the student's learning needs and pace of learning (Askow & Clark, 1991). Blake (1987) believes using a computer can increase student engagement with content material in several ways: programs can be designed to motivate and maintain student attention; the computer is infinitely patient, consistent, and attentive to detail; and proper use of graphics can aid the student's short-term memory. Continued use of computers in class can lead to computer literacy, an increasingly common requirement for workers in this Age of Information (Askov & Clark, 1991).

Yet despite the potential that computers offer, the Office of Technology Assessment (1993) reports that only 15% of programs serving adult learners use computers regularly for instruction, and that many do not use computers at all. In a survey conducted by ORR in 1994, only six out of 42 states which were funded to provided ESL services to refugees reported using CALL in their refugee ESL programs (N. Iris, personal communication, December 15, 1994).

Dunkel (1990) believes that CALL is not more widespread because administrators of second language programs have failed to recognize that CALL is a viable use of computer technology, and that teacher skepticism is "pervasive" (Dunkel, 1987). She notes that many CALL researchers fell into the "trap" of comparing computer assisted instruction with traditional forms of instruction. Findings from such studies have been equivocal. While
supporters of CALL can point to CALL treatments that lead to improvements in language skills (e.g. Scanlan, 1980; Schrupp, Busch, & Trimble, 1978; Buckley & Rauch, 1979; Morrison & Adams, 1968), skeptics refer to studies in which no significant differences in learning could be attributed to CALL (e.g. Brebner, Johnson, & Mydlarski, 1984; Lysiak, Wallace, & Evans, 1976; Kleinman, 1987; and Anandam, Kotler, Eisel, & Roche, 1979).

In a seminal study Clark (1983) reviewed research on educational technology encompassing a twenty year period. He concluded that no learning benefits can be shown to be gained from employing any specific medium of instruction as it is nearly impossible to control for differences in instructional methods and content. As the fruitlessness of comparative studies became increasingly evident, several CALL researchers sounded the clarion call that comparative media studies on CALL be eschewed (Dunkel, 1987; Pederson, 1987; Chapelle & Jamieson, 1989).

Pederson (1987) writes that new foci and methods of CALL research inquiry are needed to provide theoretical, practical, and explanatory information about the ways the computer can deliver instruction. Cheung and Harrison (1991) suggest that only through research on how ESL students use and prefer to use computers can a foundation be developed for rational decision making on how best to apply computers in the ESL classroom. Chapelle, Jamieson, and Park (1996) note the need to combine ethnographic
approaches with other research methods in order to gain a broader perspective of second language classrooms and CALL contexts. As many language educators have come to the realization that the computer is indeed here to stay, the issue no longer is "why" use CALL, but rather the development of an understanding of "how" it should be used (Dunkel, 1987).

Several authors have suggested models or perspectives on how the computer should be used in second language learning. Higgins (1988) recommends that language teachers view the computer as a "pedagogue" whose role is to assist students in their learning, answer student questions, and follow student orders, but not to provide structure or authority over the student. Underwood (1984) believes that CALL should facilitate a language learning environment that allows students to explore the target language in an authentic way. He recommends that educators avoid CALL material modeled on behaviorist theories of second language learning. Others have argued that the much-maligned "drill and practice" format still has a role in the CALL repertoire, if learning materials are carefully prepared to exploit the unique resources of the computer. (Mohan, 1992; Pederson, 1987). A number of CALL researchers have suggested that the characteristic of computer programs to stimulate conversation is a potentially important role for CALL (Abraham & Liou, 1991; Underwood, 1984; Higgins & Johns, 1984). Herrmann (1992) argues for an "instrumental"
role for computers in second language learning by which
students use the computer to accomplish a meaningful and
complex task such as the production of a newspaper in the
target language.

The research project to be examined here sought to
explore ways the computer could enhance language learning
in a multi-level, open-entry program serving adult ESL
students.

For the educational administrator seeking information
on implementing a technological innovation such as
computer-assisted-language learning, the research is
wanting. Kearsley and Lynch (1994) lament that there has
been little critical examination of technology leadership,
which they believe explains in part the equivocal results
of technology use in the classroom. They maintain there
exists a "critical need" to formally train administrators
and teachers in technology leadership. After implementing
computer-assisted instruction in an ESL writing program,
Silver and Repa (1993) concluded that further research is
needed to determine the role that leadership must assume in
the planning process.

The vast literature on educational leadership may not
be an appropriate resource, however, as it can be argued
that technology leadership is different from leadership in
other domains. Cory (1990) observes that the technology
leader does not have a lengthy history from which to draw
upon in creating a shared vision. She suggests the
educational technology leader is unique from other educational leaders in another way— the educational technology leader must also have a thorough understanding of current and rapidly developing technologies and the consequences of society's move from an Industrial Age to the Age of Information.

Why Study CALL in an ESL Program Serving Adult Students

The ability of an immigrant or refugee to speak, read, and write the English language is critical to successful adaptation to life in the United States. Several studies have shown that English language proficiency is one of the most important factors affecting the early economic self-sufficiency of newly arrived refugees and immigrants (Taylor & Barton, 1994; Gimbert, Semons, & Cichon, 1988; Office of Refugee Resettlement, 1994).

In a survey conducted by the Office of Refugee Resettlement in 1993, a random sample of refugees 16 years and over and residing in the U.S. for less than five years was contacted and questioned. Of those refugees who judged themselves to be fluent in English, the ratio of the number of individuals in the population age 16 or over who were employed to the total number of individuals in the population age 16 or over, or EPR, was found to be 44.3%. The EPR for refugees who spoke English "a little" was 28.5%, and was only 16.8% for those who indicated that they did not speak or understand English at all.
A report by the Texas Office of Immigration and Refugee Affairs (TOIRA) provides compelling evidence linking English language proficiency and income. One thousand Vietnamese and Laotian refugees were interviewed for the study. Those who self-reported the ability to "speak everything" in English had an average income of $27,433, whereas refugees able to sustain only a short conversation in English averaged $11,285 in annual income. The TOIRA study also reports a positive relationship between English language proficiency and rate of naturalization, preventive health practices, and self-rating on quality of life in the U.S. (Taylor & Barton, 1994).

Recent immigration trends indicate that the number of Americans in need of English language training is the largest in our country's history. The 1990 Census reports the size of the foreign-born population in the U.S. at 19.8 million, or 7.9% of the total population. This is the largest number of foreign-born persons in U.S. history and the highest percentage of foreign-born in 40 years. The largest wave of recent immigration occurred between 1980 and 1990 (Bureau of the Census, 1993), as millions of Mexicans and Central Americans fled crushing poverty and civil war to seek a better life in the U.S. Over 1.1 million refugees from Southeast Asia have resettled in the U.S. since the fall of Saigon in 1975. In 1994 804,416 persons were legally admitted for residence in the U.S.,
including 121,434 refugees (Immigration and Naturalization Service, 1996). It is estimated that 200,000 undocumented aliens enter the country annually (Bureau of the Census, 1993).

In the 1950's 68% of legal immigrants to the U.S. came from Europe or Canada and 31% were from Latin America or Asia. By the 1980's, Europeans and Canadians accounted for only 13% of legal immigrants to the U.S. while the portion of Latin Americans and Asians had grown to 84% ("The Immigrants," 1992). Data from the 1990 census indicate that the more recent immigrants are more likely than earlier ones not to speak English or not to speak English well. In 1990 30.3% of Asian language households and 23.4% of Spanish language households were considered "linguistically isolated", i.e. no one in the household over age 14 speaks English well (Bureau of the Census, 1993).

In addition to English language proficiency, computer literacy is increasingly important for accessing opportunities in our society. An understanding of computers is becoming necessary to perform a growing number of jobs and is needed to pursue higher forms of education. Computers are a form of technology that affects many aspects of American life, from making a plane reservation to checking out a library book. The computer is the "most visible, accessible, and hands-on device of technological wonders" that newly arrived immigrants and refugees face in their daily lives (Silver & Repa, 1993).
As noted, much of the early CALL literature compared CALL to traditional modes of instruction, with equivocal results. Second language educators and researchers are just beginning to explore how to use the computer's capabilities to enhance CALL lesson delivery. However, most CALL research involving adults has focused on just two populations of students—either undergraduate students studying a foreign language or international students enrolled in college level ESL programs. Language classes at the college level are highly structured programs composed of students of often similar backgrounds who are grouped by ability level in semester-long classes. In addition to listening and speaking skills, it is important for college students to write with a high degree of proficiency in the target language, therefore writing exercises are often featured in college second language classes, particularly ESL classes for foreign students intent on accessing mainstream college courses. Students in university level ESL and foreign language classes have been in a formal school setting for at least 12 years and generally come from middle or upper class backgrounds.

In contrast, a major goal for many ESL programs serving adult refugees is for students to achieve "survival English"—where the emphasis is on understanding what is spoken and speaking with adequate proficiency. Attention to developing writing skills is often minimal. Refugee students can differ greatly in educational experiences and
English language abilities and may vary considerably in age. A large portion of the students in the ESL program examined here were former political prisoners from Vietnam and their wives, many of whom were over 50 years old. ESL classes for adult refugees are often taught in relatively unstructured programs designed to accommodate the realities of refugee life.

Refugees are subject to arrive in the U.S. at any time during the year. The ESL program that was the focus of this case study (like many other ESL programs for refugees) had an open-entry policy which made it possible for students to attend class as soon after their arrival in the U.S. as desired. The constant influx of new students and the departure of old students as they move on to jobs or formal schooling requires difficult lesson plan adjustments on the part of teachers in such open-entry programs. Often there is limited time to offer remediation to new students. Of the many attributes ascribed to CALL, it was the quality of CALL to focus on individual needs and deficiencies that I felt offered one of the greatest potential benefits for the ESL program I administered.

There exists, however, almost no studies which examine how computer technology can assist teachers in addressing the learning needs of adult immigrant and refugee students in multi-level, open-entry programs. Nor has research been conducted that would guide administrators interested in
implementing educational technology in their adult ESL programs. This study aimed to fill that void.

The problem of effectively teaching English to adult immigrants and refugees is of pressing concern. The Welfare Reform and Personal Responsibility Act of 1996 signed into law by President Clinton on August 22, 1996, dismantled the safety net for legal permanent residents who have fallen on hard times by denying or limiting access to several major federal benefits programs until the immigrant works forty quarters or naturalizes (Wheeler, 1996). A requirement for naturalization is English language proficiency. English, as well as marketable job skills, is needed for obtaining the type of employment that makes dependence on transfer payment programs less likely for those capable of working. I believe the study I conducted provides answers that have practical significance for guiding the implementation of CALL as a strategy for the improvement of ESL instruction and vocational preparedness for a large segment of American society—Americans for whom computer-assisted learning has largely been overlooked.

Purpose of the Study

The purpose of this study was to explore the process of implementing computer technology in a multi-level, open-entry ESL classroom for adult refugees as it was actually occurring, so to derive lessons about this process. Major aims were to a) provide administrators and teachers with a sound basis for making decisions regarding successful
strategies for introducing CALL in an ESL program and b) to identify appropriate uses of computer technology to enhance English acquisition and vocational preparedness of adult students in a multi-level learning environment.

A rather unique aspect of this case study was that the researcher and the program administrator were one and the same person. As the program administrator, I was concerned that students have successful learning experiences. Input from teachers and students assisted me in determining how CALL could best serve this goal. My role as researcher explored this decision making process as it occurred. I believe my thoughts and "reflective conversations" on what I saw working or not working provide a valuable and unique "emic" view of the implementation of CALL and its effects on the program, as well as insight into what Schon (1984) calls a manager's reflection-in-action.

Research Questions

This study was guided by questions I brought to the field as well as certain questions that took shape as fieldwork was on-going. Three main areas of inquiry emerged as I strove to understand the case, which can be grouped according to issues having to do with the following: implementing CALL; teaching with CALL; and learning with CALL. In each of these areas the main focus of inquiry became the perspective of one of the three groups of actors who composed the case, i.e. the administrator, the teachers, and the students, respectively. The original
research questions which proved salient and were explored in this study follow under their respective area of inquiry:

1. Implementing CALL
   a) What roles must the administrator assume during the process of implementing the CALL innovation?
   b) What strategies regarding teacher training, selection and introduction of new software, and scheduling computer use prove effective?

2) Teaching with CALL
   a) What changes do teachers experience as CALL becomes a part of their teaching repertoire?
   b) How is the learning environment (e.g. how teachers manage their classrooms, how teachers organize and conduct their lessons, the nature of group work) changed by CALL?

3) Learning with CALL
   a) Do students' perceptions of their roles as learners change as a consequence of using CALL?

As I was interested in gaining an understanding of how computers could meet the learning needs of both low English proficient and more advanced adult learners in an open-entry/open-exit ESL program such as the one in Versailles Gardens, I also brought to the study the following research questions: "How can CALL address the learning needs and deficiencies of students who enter an on-going class with little or no English proficiency?"; "In what ways can more
advanced students benefit from using various computer applications?"; and "How can CALL help adult ESL students in improving the survival language skills of major concern - listening and speaking?"

I decided during the course of the study that I could best address the issue of how CALL helps students learn English by concentrating on what students think about CALL and how they perceive computers help them to learn English. The second research question under the area of inquiry "learning with CALL" that I then developed and chose to focus on was the following:

3) Learning with CALL

b) How do students think computers help them to learn English?

I came to see that this re-adjustment in my inquiry made sense in another way. It is extremely difficult to attribute gains in learning to any one medium of instruction given the many factors that can compromise internal validity in comparative media studies (this point will be addressed in depth in the literature review). I believe that an effort to understand how students themselves experience learning with CALL is a valid alternative in attempting to ascertain the merits of such an innovation, and therefore warrants the attention given here.

By the conclusion of the study I found I was not able to adequately answer the question if students' perspectives
of their roles as learners change as a consequence of CALL (question 3a, above).

Research on computer-assisted learning in an adult education setting is limited in number, studies examining the implementation of CALL in a program serving adult refugees are nonexistent. It is my hope that this study will yield an understanding of the impact of CALL on an ESL program for adult refugees, and that information presented here will be of benefit to other ESL program administrators, teachers, and researchers.
CHAPTER II
REVIEW OF THE LITERATURE

This chapter first will provide an overview of the literature on innovation in education. Special attention will be paid to the role of leadership in the innovation process and the conditions that have been identified as necessary for an educational innovation to succeed. A particular focus will be the extant research on leadership in educational technology.

Next, I will consider the CALL research literature, beginning with the early studies that sought to prove the computer's superiority over other mediums of language instruction, and ending with the present-day focus that seeks to understand how computers can be used to improve language learning.

This chapter then will conclude with an examination of the characteristics and assumptions underlying qualitative research methodology.

Innovation in Education and Educational Leadership

Overview of Studies on Innovation in Education

One of the primary societal roles of pattern-maintenance organizations such as educational institutions is to transmit and preserve the culture of the society, a function Talcott Parsons has labeled "latency" (Hoy & Miskel, 1987). At the same time schools are expected to be dynamic organizations capable of preparing students for a rapidly changing world (Bowers, 1990). Innovations clearly
take hold in educational institutions, but at remarkably different rates and degrees. Research on innovation in education has been conducted at both the macro and local level in an attempt to understand how innovations are developed and adopted, and the changes that occur as a consequence of the innovation.

A useful definition of innovation is one provided by a scholar of educational change, Matthew Miles, who defines innovation as "a deliberate, novel, specific change, which is thought to be more efficacious in accomplishing the goals of a system." (1964, p. 14).

Early research on innovation in education conducted by Mort and Cornel in the late 1930's indicated that change in U.S. schools was occurring at a decidedly leisurely pace. Their data suggested that fifteen years was required before a promising school practice (such as kindergarten classes) would be adopted by 3% of the nations' schools. After the 3% "tipping point", there was a rapid twenty years of diffusion, followed by another fifteen years of slow acceptance before the practice became universal (Mort, 1964).

The launching of the Soviet satellite Sputnik in 1957 initiated a flurry of innovations in U.S. schools and dramatically changed the assumed timetable for the diffusion of educational innovations. Innovations that quickly took hold in a number of American schools included team teaching, multi-unit schools, language labs, computer
assisted instruction, the Physical Science Study Committee (PSSC) project, and "modern math".

These changes in the American educational landscape generated considerable research about the content of the proposed changes and the factors effecting implementation. Researchers tended to focus their investigations on the barriers to innovation implementation. The problem was often framed in terms of the resistance to change on the behalf of organizational members (Yin, 1989). Baldridge and Deal (1975) concluded that much of the innovation research that had accumulated by the early 1970's provided little practical guidance to practitioners for the following reasons: the research tended to have an individualistic bias and neglected organizational features, findings stressed factors that were non-manipulable (e.g. younger, inexperienced teachers are more open to change), and innovation researchers tended to neglect policy implications and promote an over-commitment to specific and untried strategies (which they labeled the "black bag" problem).

A case study conducted in 1966 by Gross, Giacquinta, and Bernstein (1971) proved to be a watershed in innovation research by directing focus on implementation of an innovation as a process (Yin, 1989). The researchers examined why an instructional innovation failed to take hold in a laboratory school, despite the fact that the administration and the teaching staff were all favorably
disposed towards the proposed innovation. The researchers discovered that the teachers were unable to implement the innovation largely because the administration had failed to recognize or cope effectively with the problems that implementation of the innovation had generated.

Since the early seventies, the focus of many innovation studies has been one which examines implementation as a process. From this perspective several authors have described the organizational conditions necessary for an innovation to succeed. But before these findings are discussed, it is important to understand what qualifies an innovation as "successful".

**Defining Successful Innovation in Education: Institutionalization**

The ultimate goal of most educational innovations is to have the innovation become established as regular practice or "institutionalized". When this occurs it is safe to say that the innovation has been successfully implemented. A recurring dilemma in the literature, however, is the lack of a means for determining when an innovation reaches such a state of acceptance.

Miles (1983) notes that the data on institutionalization of innovation is "scant". He opines that innovation at the user level was overemphasized at the expense of understanding the organizational conditions required for innovation. Based on his research and others, he describes three groups of factors that compose the
organizational conditions required for institutionalization of an innovation. They are: 1) **supporting conditions**, such as "competing practices eliminated" and "operates on a regular, daily basis"; 2) **passage completion**, organizational conditions such as "routines established for supply and maintenance" and "goes from soft to hard money"; and 3) **cycle survival**, which includes such factors as "survives departure of personnel and introduction of new personnel" and "survives annual budget cycles".

Ekholm and Trier (1985, as summarized in Hord & Hall, 1986) define institutionalization as a "process through which an organization assimilates an innovation into its structure" (p.87). Fidler and Johnson (1982) define successful implementation of an innovation as the "routinization, incorporation, and stabilization of the innovation into ongoing work activity" (p.4). Van Hees (1987) believes institutionalization of an innovation has been achieved when it is "locked into" the organizational setting of the school and into the minds of the users. The innovation then becomes a part of the normal school day to day routine and is no longer viewed as something new or different requiring other skill, materials, or attitudes. He notes that is not easy to determine when this is actually achieved, and laments the lack of objective measures of institutionalization.

Hord and Hall (1986) have attempted to provide an operational definition of institutionalization of an
innovation at the individual user level. Their definition of "when you have it" employs three descriptive measures: 1) the Stages of Concern (SoC) Questionnaire which measures how the user feels about the innovation; 2) a focused interview procedure measuring how the individual is using the innovation- from non-use and orientation to coordinating with others in using the innovation and seeking more effective alternatives, to the established use of the innovation, and; 3) an Innovation Configuration Component Checklist that is innovation specific and records the ways each user is using various parts of the innovation as compared to a recommended pattern of use. Hord and Hall advise that some person or persons be charged with the responsibility of setting the standards for institutionalization of a particular innovation at the beginning of the change process.

Aspects of Successful Innovation in Education

Mort and Cornell's research on change in schools in the late 1930's led them to conclude that successful adoption of educational innovations was associated with the following characteristics: active support of the innovation by administrators, highly trained teachers, and community support of modern practices (Mort, 1964).

Based on their case study findings, Neil, Giacquinta, and Bernstein (1970) argue that administrators must take the following steps to assure successful innovation
implementation: 1) provide teachers with a clear picture of their new role requirements; 2) adjust organizational arrangements to make them compatible with the innovation; 3) provide teachers with the training needed to implement the innovation 4) provide the resources necessary to carry out the innovation; and 5) provide the appropriate support and rewards to maintain teachers' willingness to continue implementation efforts.

Cox, French, and Loucks-Horsley (1987) analyzed data from two extensive school improvement studies conducted by NETWORK, Inc: a study of the role of teacher incentives and rewards in implementing a technological innovation and a study of the dissemination efforts supporting school improvements. Information was collected at a total of eighteen school sites where various innovations had been initiated. The authors conclude that institutionalization of an educational innovation must occur along an individual dimension as well as organizational dimension: the innovation must have the enthusiastic support of teachers and be reinforced by an infrastructure at the building and district level.

From 1973 through 1978 the Rand Corporation examined a sample of 293 local projects funded by four federal programs intended to introduce and support innovative practices in the public schools. The study found that the following strategies generally were effective in implementing innovation: concrete, teacher-specific and
extended training; classroom assistance from local staff; teacher observation of similar projects in other classrooms; regular project meetings that focused on practical issues; teacher participation in project decisions; local development of project materials; and principals' participation in training (McLaughlin, 1989).

In a study which examined educational innovations at 12 sites, Huberman and Miles (1984) found that large scale innovations requiring major changes in instructional delivery "lived or died" by the amount and quality of assistance that their users received once the change process was on-going. Strong early assistance was found to be particularly important in maintaining levels of commitment and practice mastery at later stages of the implementation process. They concluded that firm "practice mastery" usually came within 18 months in the case of complex projects, and within 6 months in cases where the innovation was "downsized".

**Educational Leadership and Innovation**

Numerous studies support the notion that at the school level, the individual who most often plays a key role in sustaining the innovation is the school's administrator.

Gene Hall (1988) concludes from his analysis of data gathered on a year-long study of nine elementary schools that successful implementation of educational innovations is determined in large part by the leadership style of the school principal. During the research project the day to
day interventions of nine elementary school principals were documented. Intervention was defined as "an action or event, or set of actions and events, that influences the use of an innovation" (p. 51.). Data on interventions were then used to analyze the Change Facilitator Style that each principal used. It was observed that teachers in schools with Initiator and Manager style principals had significantly higher degrees of implementation than did teachers in schools with principals using the Responder leadership style.

Vandenberghe (1988) analyzed data on 101 teachers in 24 Belgium schools as the basis for his conclusions about educational innovation at the local level. His findings corroborate those of Hall's: in those schools where the principal emphasized long-term planning, interacted frequently with teachers, and provided clear organizational support, innovations were implemented far more successfully than at those schools where the principals deferred to outside change agents or sought to avoid risks.

Peterson (1988) argues that in the role of change agent, the school administrator must do more than simply focus attention on implementing specific innovations. The administrator's role begins much earlier in establishing a school culture that is receptive to change. The administrator accomplishes this in part by recruiting and shaping faculties who place a high value on innovation and excellence. The school principal also has it within her or
his power to reward teachers' independent efforts at innovation and promote in-services that sensitize staff to the value of innovations.

Leadership and Educational Technology

There exists a dearth of literature on the topic of leadership in educational technology. Kearsley and Lynch (1994) lament that there has been little critical examination of technology leadership, which they believe explains in part the equivocal results of technology use in the classroom. They believe there exists a "critical need" to formally train teachers and administrators in technology leadership. They argue that the domain of educational technology leadership is different from leadership in general, as a technology leader must be specifically skilled in developing technical solutions to identified educational problems. The technology leader must then have the knowledge to build the support structures- theoretical, political, and financial- to ensure the success of the innovation.

Cory (1990) also believes that inadequate leadership is a major contributing cause to the modest impact of computer technology in education. She asserts, as do Kearsley and Lynch (1994), that leadership issues for technology use differ from leadership in other domains. Every educational leader must articulate a vision of how proposed changes will effect the school or district. However, Cory argues, instructional technology does not
have a lengthy history from which a shared (and often
unwritten) vision has evolved. Furthermore, creating a
vision for the future involving educational technology
requires an understanding of current and rapidly developing
technologies and the consequences of society's move from an
Industrial to an Information Age.

Branson and Hirumi (1994), in their description of the
School Year 2000 Initiative in Florida, remind readers of a
"fundamental law" regarding the application of technology
to an operational process: "technology does not reduce
costs or improve results; managers do" (p. 93). They note
that there exists a "profound difference" between using
technology effectively vs. simply adding technology to an
existing structure. They believe the equivocal results of
computers in education occurred because computers were
simply added on to existing, ineffective processes already
in place. Their School Year 2000 model of a technology-
based learning environment in which students are perceived
as "knowledge workers" will require that administrators
assume a new, shared leadership style. Administrators must
be capable of inspiring and guiding teachers in their
efforts to enable students to become independent learners.

Finkel's many years of experience as a school
district's instructional technology coordinator has lead
him to the following conclusion: administrators are the
"key" to the success of a school's educational technology
programs (Finkel, 1990).
Kearsley and Lynch (1994) recommend that administrators take the following actions (which they adapted from Collis, 1988) to insure the success of technological innovation at the school level:

1) Ensure equal access and opportunity to technology resources;
2) Establish policies for the ethical use of computers;
3) Ensure that facilities for technology are appropriate;
4) Establish priorities for technology use in school;
5) Provide released time for technology training;
6) Reward outstanding technology applications;
7) Seek out funding sources for technology (p. 9).

A synthesis of information from eight federally-funded projects involving the implementation of technology in special education programs yielded the following major conclusion: administrative involvement is important for successful implementation. Effective administrative practices across all projects are categorized below with selected findings:

1) Providing administrative leadership: The use of technology should be encouraged, not forced. Nevertheless, administrators need a vision of the value and potential of computers which must be communicated to all teachers.
2) Promoting communication and collaboration: Once a technology-related decision is made, it is important that
administrators and teachers communicate directly to monitor progress or the need for modification.

3) Providing personnel and technology resources: Often a technology resource person is needed. Easy access to technology is critical.

4) Providing training and support for teachers: Introduction to technology should be controlled so as not to overwhelm teachers and allow time for integration of new knowledge. Teachers need opportunities to reflect with other teachers over their instructional use of technology. Teachers should also be trained in the use of teacher-modifiable software to increase curriculum integration and use of computers. Finally, information covered in training sessions should be relevant to teachers' needs and teachers should play a role in planning and training (Division of Innovation and Development, 1992).

A study conducted by Dwyer, Ringstaff, and Sandholtz (1991) concluded that change in a technology rich classroom is an evolutionary process marked by the following stages: entry, adoption, adaptation, appropriation, and invention. They found that two conditions are essential for successful computer implementation. First, teachers must be given time to reflect on their own beliefs about teaching and the possible consequences of alternative belief systems. Secondly, administrators must be willing to implement programmatic or structural shifts in the learning
environment to support teachers who are evolving in their instructional delivery.

Research on CALL

Comparative Research on CALL

When computer-assisted learning was first implemented in foreign language and other educational programs in the early 1960's, there was considerable interest in determining the effectiveness of this new, promising, yet expensive technology. Early research on CALL was often guided by the following question: Do students who use CALL learn more efficiently than those who do not? (Chapelle & Jamieson, 1989).

The research approach employed to answer this question reflected the dominant research paradigm of the era, and therefore was usually experimental in design. Early CALL researchers often compared the scores of an experimental group that was taught with CALL with a control group that received more traditional instruction to determine the most effective treatment. The findings from such comparative studies were equivocal, however.

One of the earliest comparative studies in CALL was conducted by Morrison and Adams at the University of New York, Stony Brook, in 1968. In this study, one section of introductory German students received laboratory practice and remediation through the use of computer-assisted instruction (CAI). Course grades and results on tests of achievement in German were compared at the end of the
school year with a class section that had received laboratory practice in a conventional language laboratory. Results suggested that students in the CAI section were comparable to students in the traditional laboratory section in speaking and listening skills. The CAI students performed slightly better in reading and writing skills. There were no significant differences in class grades (Morrison & Adams, 1968).

In a 1970 study Barrutia designed an introductory Spanish class based on self-instruction utilizing computer programmed lessons. A class taught by means of traditional classroom instruction served as the control group. The author observed that no significant differences in learning could be attributed to the CALL treatment (Barrutia, 1970.)

Scanlon (1980) incorporated forty drill-and-practice computer lessons on the PLATO system at the University of Illinois into an introductory Latin class. Each of the forty lessons had the same general arrangement of four segments: vocabulary, morphology, translation, and a self-test. The PLATO work was required as a supplement to the teaching that took place in classes that met four times a week. A year later third semester students who had been working on the PLATO system were out-performing those who had not worked with PLATO by about one grade level. Scanlon concluded that the computer's greatest usefulness is as a classroom supplement which serves to enhance and upgrade instruction.
Brebner, Johnson, and Mydlarski (1984) conducted one of the more tightly controlled comparative CALL studies. An experimental group consisted of two second semester French classes which received CAI lessons as part of the course load. Two second semester university French classes were provided traditional classroom instruction and served as the experiment's control group. One instructor taught both an experimental and control class. The two other classes were taught by two separate teachers. Nine CALL lessons were offered to the experimental classes covering 9 of 28 total course topics. These same nine topics were presented through traditional classroom instruction to the control groups. Results indicated no significant differences in achievement between the experimental groups and control groups.

Schrupp, Busch, and Trimble (1978) found that students who used interactive video equipment driven by a CALL program at the US Air Force Academy showed evidence of learning gains from use of the technology as compared to students who did not use CALL. In another study ESL students improved test performances in a short amount of time in a computer-assisted course on punctuation and usage (Freed, 1971). However, when Adams and Rosenbaum (1969) compared CALL with traditional classroom learning they found that no significant differences in learning could be attributed to their CALL treatment.
The results of research findings comparing computer-assisted instruction with traditional classroom instruction in content areas other than second language learning were also found to be equivocal (e.g. Allen, 1971; Gordon, 1969; Jamison, Suppes, & Wells, 1974; Snow & Salomon, 1968). In a seminal study, Clark (1983) reviewed meta-analyses of research on technology's influence on learning and found consistent evidence for the generalization that no learning benefits can be shown to be gained from employing any specific medium of instruction. He concluded that gains said to be made in performance or speed from use of one medium of instruction over another are usually vulnerable to compelling rival hypotheses concerning a) the uncontrolled effects of instructional method and content differences between treatments and b) the novelty effect for newer media, which tends to disappear over time.

Pederson (1987) has carefully examined comparative research on CALL. Expanding on Clark's conclusions regarding comparative media studies, she cites three reasons why comparative research on CALL has been incapable of providing generalizable results:

1) The research cannot be replicated because the independent variable - use of the computer- is usually so poorly defined;

2) Because comparative studies lack adequate controls, there is no valid way to ascribe with confidence the causes for differences in the dependent variable to CALL;
Such studies usually fail to hold hypotheses based on language learning theories, and, as a result, it is impossible to integrate their results into the constantly expanding language-learning theoretical base or to utilize the outcomes to improve second language instruction.

Pederson concludes that "comparative research that attempts to illustrate the superiority of computers over some other medium of instruction should be forever abandoned" (p. 125, 1987).

Nevertheless, comparative CALL studies persist. In 1987 Kleinman (1987) compared CAI to traditional instruction in a study intended to measure differences in ESL reading achievement. Odenthal (1993) found no significant difference between the writing proficiency of students who were exposed to the CALL treatment and students who were taught writing with traditional classroom instruction. In another study students exposed to computerized cloze exercises did better on classroom achievement tests than students who received traditional text instruction (Eichel, 1989).

However, as most CALL researchers began to realize the fruitlessness of comparative studies, the use of computers in language learning came to be conceptualized in a different way. The focus now is how can computers make a difference (Chapelle & Jamieson, 1989). Several authors have suggested models or perspectives on how the computer
should be used in second language development. These are discussed below.

**Models of the Role of the Computer in Language Learning**

**Higgins' Model: Magister vs. Pedagogue**

Higgins (1988) provides two metaphors for describing the different roles the computer can take in computer assisted instruction of a second language: the computer as magister (all-knowing teacher) vs. pedagogue (obedient servant). He believes the magister and pedagogue metaphors provide explanations for the success or failure of certain CALL activities.

As magister, the computer is the expert which provides the students with knowledge and has the authority to judge, praise, and criticize student responses. It can structure the order of a lesson and provide students with language rules and examples of these rules. The computer as magister has the ability to repeat a lesson endlessly and never loses it patience.

Higgins suggests that the computer takes the role of pedagogue when it is programmed to assist rather than direct student learning. In this role the computer does not ask the student questions, but rather answers the student's questions and follows the student's orders.

Higgins argues that at certain times in the learning process, magisterial teaching is needed and is appropriate. At other times, however, pedagogue-like instruction is a better option. An example of the computer in the servant
role of pedagogue is when it is used for word processing or as a data base.

**Underwood's Model: Communicative CALL vs. Wrong Try Again**

Underwood (1884) believes the early CALL programmers were limited in their vision of the use of the computer in language learning and consequently focused their efforts on producing programmed instruction (PI) that reflected a behaviorist theory of second language learning. PI activities break the material to be learned into discrete and clearly defined steps which are presented in a strict sequence. The resulting programs were mainly "drill and practice" activities consisting of grammar fill-ins and vocabulary translations or "flashcard" programs.

Underwood believes that PI programs, or what he prefers to call "wrong, try again" programs, are defective pedagogically in the following ways: 1) they focus primarily on form rather than meaning; 2) they provide insufficient or vague feedback to the user; 3) such programs are designed under the assumption that the computer should be in charge of the lesson.

Underwood argues that CALL material must move beyond the "wrong, try again" model and allow students to explore the depth and richness of language. Rather than simply manipulating superficial grammatical exercises, CALL should facilitate a language learning environment that allows students to explore the target language in an authentic way. CALL material that would allow for this he calls
"communicative CALL". The premise upon which he bases the design of communicative CALL is Krashen's (1985) theory of language learning, known as the Monitor Model or Input Model.

Krashen's theory of language learning consists of the following five hypotheses:

1) **The Acquisition-Learning Hypothesis**: There exist two separate, independent ways of developing ability in a second language. "Acquisition" is a subconscious, spontaneous process similar in important ways to the process children use to acquire their first language. The focus here is on communication and results in the learner "feeling" what is correct. "Learning" is a conscious process, deliberately initiated and concerned with explicit knowledge and understanding rules. Learning is what is mainly associated with classroom instruction and results in "knowing about" a second language.

2) **The Natural Order Hypothesis**: The rules of a particular language are acquired in a predictable and "natural" order that is remarkably similar for different learners. This order is not determined by what would be judged as formal simplicity, and it is different from the sequence of grammar rules that are taught in language classes.

3) **The Monitor Hypothesis**: The ability to initiate communication in a second language can only be derived from subconscious knowledge of the language that has been
acquired, not learned. Learned, conscious knowledge can only serve as an editor or monitor for the utterances that are made when one attempts to communicate. Moreover, the Monitor can only be used in certain, restricted circumstances. The speaker must: know the (often complex) rule, must think consciously about form (which distracts from thinking about the content of the speech), and must have time to reflect on these rules and the forms they must take (which is often not possible in normal conversation). Krashen argues that the grammar rules students learn in class often are of little use to the student except on in-class grammar tests.

4) **Input Hypothesis**: Acquisition occurs when one is presented with information that is slightly beyond one's present level of competence (i.e., i + 1). Such information must be supplied in context and provide extra-linguistic support, such as through the use of visual aids or discussion of familiar topics. Two corollaries of the Input Hypothesis are that: a) Speech cannot be taught directly but "emerges" on its own as a result of building competence via comprehensible input; b) When input is understood then grammar is automatically acquired by the student, it need not be taught explicitly.

5) **The Affective Filter Hypothesis**: Comprehensible input is necessary for input, but the acquirer must be open to understanding the input. The Affective Filter is a "mental block" that prevents acquirers from understanding
input. It "goes up" when the student is anxious, lacking self-confidence, and is "on the defensive".

Krashen provides the following summary of his theory of second language acquisition:

People acquire second languages only if they obtain comprehensible input and if their affective filters are low enough to allow the input 'in'. When the filter is 'down' and appropriate comprehensible input is presented (and comprehended), acquisition is inevitable.... In other words, comprehensible input is the essential ingredient for second-language acquisition. All other factors thought to encourage or cause second-language acquisition work only when they contribute to comprehensible input and/or a low affective filter.

(Krashen, 1985, p. 4)

From an understanding of Krashen's Input Model Underwood presents 13 principals upon which he believes "communicative" CALL should be based:

1) The aim of the CALL lesson should be acquisition practice, not learning practice.

2) Grammar should always be implicit rather than explicit in a CALL lesson or activity.

3) The CALL lesson should encourage the student to generate original utterances rather than just manipulate prefabricated language.

4) The CALL lesson should not attempt to judge and evaluate everything the student does.

5) The CALL lesson should avoid telling students they are wrong.
6) The CALL lesson should avoid rewarding students with congratulatory messages, which he calls "nonsense".

7) CALL lessons should avoid being "cute".

8) The target language should be used exclusively in CALL activities.

9) The CALL lesson should be flexible.

10) The student should be able to explore the subject matter in the CALL lesson.

11) The CALL lesson should create an environment in which use of the target language feels natural, both on the screen and off the screen.

12) CALL lessons should never try to do anything that a book could do just as well.

13) Above all, the CALL lesson should be fun (pp. 52-54).

Underwood presents several examples of software that he believes meet at least some of the criteria of Communicative CALL: simulations, communicative games, text manipulation programs, and text generative programs.

Mohan's CALL Models

Two of the models of the role of the computer in second language learning described by Bernard Mohan (1992) include the computer as language teacher and the computer as the context for cognitive language development. These are discussed below. (He does not believe a third frequently suggested model, the computer as a stimulus for
talk, bears up under scrutiny. Research supporting this conclusion will be discussed later.)

**Computer as language teacher.**

According to Mohan, the model of the computer as language teacher views the computer as providing explicit, metalinguistic language instruction, similar to Higgin's (1988) magister and Underwood's (1984) Wrong Try Again model. Drill and practice vocabulary and grammar exercises are the most common CALL programs in this tradition. Mohan notes that there has been much criticism of the model of the computer as language teacher, particularly by those who subscribe to Krashen's (1985) theory of language acquisition. As noted, Krashen posits that grammar-based approaches to second language learning which emphasize explanation of rules and correction of errors cannot lead to language acquisition.

Mohan argues that most criticism of this model should be directed towards the available CALL software, which he admits has not kept up with advances in computer hardware. Although Krashen and others have made a good case against the belief that explicit, metalinguistic teaching is always appropriate, Mohan argues that they have not proved that it is never appropriate. He believes arguments for the appropriateness of such methods are supported by the research of systemic linguists.

Frequently the unique capabilities of the computer are not utilized in CALL software programs, particularly those
programs which present traditional workbook material and use the computer as "an expensive page turner". Mohan opines that second language researchers need to view new ways of exploiting computer technology. He suggests a promising new area of research lies in how the computer is already being used to teach programming languages to users. Mohan believes that in this capacity the computer has long been functioning as a language teacher - but of artificial languages such as BASIC, LOGO, and PASCAL. He recommends that the application of second language research techniques to the study of the acquisition of programming languages can open up an important new area of research and exploit the unique capabilities of the computer.

The computer as a context for cognitive language development.

Mohan (1988) suggests that another promising model of the role of the computer in second language development is one which views the computer as a means of developing cognitive-academic language proficiency. This model recognizes that the computer is capable of providing communication tasks that are both context-embedded and cognitively demanding. Mohan notes that a learning environment consisting of such tasks is required for second language learners to move beyond conversational fluency and to achieve cognitive-academic language proficiency, according to Cummin's (1984) model of language proficiency. Mohan concludes, however, that the model of the computer as
context for cognitive language development cannot be tested until measures of context-embeddedness and cognitive demand are developed.

**Herrmann's Models of Computer Use in Second Language Learning: Agentive and Instrumental**

Herrmann (1992) uses Soviet Activity theory as an interpretive framework for distinguishing two distinct models of computer use in second language learning. Herrmann's agentive CALL model views foreign language learning as largely a matter of balanced practice of the four language skill areas through memorization and repetition. Herrmann says such an agentive orientation is a consequence of employing a "conservative, industrial metaphor" (p. 2) of education.

Herrmann posits that when the computer serves as a catalyst and support tool in a natural, rich, and negotiated "i + 1" context, the computer's role is instrumental to the acquisition of the target language. With such an orientation, teachers and students use the computer to work collaboratively towards goals that are personally meaningful.

Herrmann designed a comparative study to explore the differences in instrumental and agentive uses of the computer in second language (L2) learning. In the agentive L2 CALL context, university students in an intermediate French class used the computer for drill and practice workbook exercises. In the instrumental L2 CALL context,
university students in an intermediate French class at the same university used the computer to produce a classroom newspaper.

Herrmann observed and participated in the two classes for a six week period. She conducted extensive pre- and post-testing of language growth by administering the College Board Achievement Test, The Modern Language Association (MLA) Cooperative Language Test, the Oral Proficiency Interview Test, and holistic analyses of written compositions. Findings indicated gains on all measures for both groups. The only statistical differences between the two groups were on the MLA tests, in which the agentive group scored better than the instrumental group on the total test and a subtest. As is often the case when results are unexpected, Herrmann questions the validity and reliability of the tests that were used. She nevertheless concludes that an instrumental approach to the use of the computer in an intermediate French as a foreign language class is an effective and workable alternative approach to CALL.

Post-Comparative CALL Research

A growing understanding of the role of the computer in second language learning, as well as a disillusionment with comparative media studies, has led CALL researchers to frame their questions in new ways.
Individual Differences and CALL

Several researchers have examined the effects of individual differences among learners in CALL contexts.

Abraham (1985) investigated the relationship between field-independence/field-dependence of students in a university level ESL class and how CALL grammar lessons were learned by students. He found that field independent learners performed better on post-tests when grammar rules were presented explicitly during a CALL lesson. Field-dependent students did better with a more inductive approach which used examples of grammar usage in the CALL lesson.

Chapelle and Jamieson (1986) found that field-independent ESL students in their study conducted at the University of Illinois tended to have a negative attitude towards their CALL lessons, whereas field-dependent students liked CALL. They also found that student motivation for learning English, as measured by a subscale of Gardner and Smythe's Attitudes and Motivation Test Battery, was positively correlated to attitude towards CALL. They did not find a statistically significant relationship between ESL students' tolerance for ambiguity and their attitude towards CALL. They concluded that certain types of learners may be better suited to some CALL lessons than others, and that it is important to consider learner variables when researching CALL effectiveness.
Discourse Analysis and CALL

Practitioners and researchers have noted that use of the computer by two or more students seems to generate discussion centering on how to work the program or solve the problem presented. It has long been thought that students communicate more with each other in class than with their teacher and that language classes should encourage more peer interaction. Research by Long and Porter (1985) found that non-native speaker (NNS) interaction with another non-native speaker resulted in more language practice opportunities and negotiation of input than interactions between the teacher and non-native speakers and between native speakers and non-native speakers. This suggests that NNS/NNS interaction at the computer terminal may provide an ideal environment for input and negotiation of the target language. Several studies have examined the discourse generated by students at the computer.

Mohan (1992) conducted an experiment to analyze second language talk at the computer. Four pairs of female ESL college students and four pairs of male ESL college students were situated at eight computer terminals (All dyads had different first languages and intermediate fluency in English). Each pair was assigned three different computer tasks: the use of a grammar teaching program, use of a word processing package, and the use of a business simulation program. They were videotaped working on these
programs and during free conversation that was assigned as a task away from the computer.

Quantity of input was measured in three ways: words spoken per minute, utterances per minute, and words per utterance. (Utterance was defined as the spoken equivalent of the written sentence.) Four features of modified interaction were counted as measures of the quality of the input the speakers negotiated when communicating with each other: self-repetitions, other-repetitions, clarification requests, and confirmation checks.

Mohan found no clear distinction in quantity and quality of output for the three computer tasks. However, he found that a strikingly higher quantity of input as well as level of negotiation occurred during talk generated in conversation away from the computer.

Mohan concludes that such results argue against the usefulness of the computer as a stimulus for talk. Other research on discourse generated during CALL group work generally support Mohan's conclusions (Piper, 1986; Windeatt, 1986; Mydlarski, 1987; Abraham & Liou, 1991).

Qualitative Research on CALL

To date only a few studies have employed qualitative research methods to explore the effects of CALL on learning and teaching. Bueno and Nelson (1993) employed qualitative research methods to examine the interactions that resulted when students worked together at the computer. They found that as students became familiar with the software programs
and more experienced at working together in their groups, they tended to interact more cooperatively with each other. Chan (1993) used a qualitative methodology to explore the kind of learning environment created by CALL use and how teachers made curricular decisions in selecting and integrating software into instruction.

Based on interviews she conducted with college students in an ESL writing class, Dziombak (1990) found that subjects felt isolated in the computer lab and missed the interactions they had enjoyed in the classroom.

Chapelle, Jamieson, and Park (1996) argue that with its holistic approach, ethnographic studies on CALL can provide a meaningful understanding of how learning takes place within a CALL context. To understand the relevance one study may have for other instructional contexts, they suggest that ethnographically based CALL reports contain detailed descriptions of the following: 1) the elements of the target language context; 2) subject characteristics; 3) CALL software used.

The effective use of qualitative research methods requires a thorough understanding of the paradigm choice involved and the assumptions upon which it is based. These issues are discussed in depth below.
Overview of the Qualitative Research Design

Assumptions of a Qualitative Research Design

The body of work labeled qualitative research has grown out of diverse disciplines including sociology, anthropology, psychology, and history. Qualitative research is often equated with such terms as naturalistic research, ethnography, participant observation, or post-positivism.

Yin (1989) states that the "essence" of qualitative research consists of two conditions: " a) the use of close-up, detailed observation of the natural world by the investigator; and b) the attempt to avoid prior commitment to any theoretical model" (p.25).

Smith (1987) believes what sets qualitative research most clearly apart from other forms of research is the notion of "context sensitivity". Qualitative researchers believe that the unique physical, historical, material, and social environment in which people find themselves greatly influences what they think and how they act. It is only by drawing on these larger contexts can the meaning of people's actions be understood.

For many years research of a more quantitative or "positivist" orientation dominated the educational research literature. Several authors have compared the contrasting philosophical assumptions which form the foundations for the positivist approach and the qualitative approach to conducting research, including Firestone (1987), Merriam (1988), and Bogdan and Biklen (1982).
Lincoln and Guba (1985) have identified five axioms which distinguish the positivist from the naturalist paradigm:

1) **Nature of reality.** In the positivist paradigm reality is single, tangible and fragmentable. In the naturalist version realities are multiple and constructed and can only be studied holistically.

2) **The relationship of knower to known (epistemology).** For the positivist, the inquirer and the object of inquiry are independent and constitute a dualism. For the naturalist, the knower and the known influence each other and are inseparable.

3) **The possibility of generalization.** The aim of inquiry in the positivist paradigm is to develop time and context free generalizations. In the naturalist paradigm only time and context bound working hypotheses are possible.

4) **The possibility of causal linkages.** In the positivist paradigm, there are real causes, which are temporally precedent to or simultaneous with their effects. In the naturalist world view, all entities are in a state of mutual and simultaneous shaping, so that it is impossible to distinguish causes from effects.

5) **The role of value.** In the positivist world view, inquiry is value-free. This is guaranteed by employing an "objective" methodology. In the naturalist paradigm, the
researcher recognizes that all inquiry is value bound (pp. 37-38).

**Characteristics of a Qualitative Research Design**

The world view that shapes qualitative research has implications for how such research is conducted. Characteristics of qualitative research that result from the logical dependence on the axioms of the naturalistic paradigm are described by Lincoln and Guba (1985):

1) **Natural setting**: The naturalist prefers to carry out research in the natural setting because she believes that realities are wholes that cannot be understood in isolation from their contexts.

2) **Human instrument**: The primary data-gathering instrument for the naturalist is the naturalist herself as only the human instrument is capable of grasping the full meaning of human interactions. The use of non-human instruments is seen as intrusive and interfering with the mutual shaping of other elements.

3) **Utilization of tacit knowledge**: The naturalist recognizes that intuition is a legitimate way of knowing because often the nuances of multiple realities cannot be appreciated in any other way and because much of the interaction between researcher and subject occurs at this level of knowing.

4) **Purposive sampling**: The naturalist may eschew random or representative sampling in favor of purposive or
theoretical sampling so to increase the likelihood that the full array of multiple realities may be uncovered.

5) **Inductive data analysis**: The naturalist prefers inductive data analysis (over deductive analysis) as this process is more likely to recognize how values shape conclusions. Inductive analysis is also more likely to identify the multiple realities present in the data.

6) **Grounded theory**: By grounding theory in the data gathered it is less likely that a priori theory will influence conclusions. The naturalist also believes that the mutual shaping found in a particular context are best explained in terms of the contextual elements found there.

7) **Emergent design**: It is "inconceivable" to the naturalist to know ahead of time the multiple realities present in the research situation. As the naturalist also recognizes that what emerges during the course of a study is a function of the interaction between researcher and phenomenon, the naturalist elects to allow the research design to emerge rather than constructing it a priori.

8) **Negotiated outcomes**: Because the naturalist seeks an understanding of the informants' construction of reality, she prefers to negotiate meanings and interpretation directly with the informants themselves.

9) **Idiographic interpretation**: Recognizing that different interpretations are likely to be meaningful for different realities, the naturalist is likely to eschew nomothetic (lawlike generalizations) in favor of
idiographic interpretations of data based on the particulars of the case under investigation (39-43).

The Qualitative Case Study

As qualitative research has grown in acceptance and use, qualitative researchers have begun to recognize the many different forms this mode of inquiry can take. Several typologies of qualitative research have been suggested (see Smith, 1987; and Jacob, 1987).

Creswell (1994) describes four design types frequently found in social science research which offer a comprehensive and flexible categorization scheme. The first is the ethnography, in which the researcher studies in-depth an intact cultural scene over a prolonged period of time. The primary mode of data collection is observational. With a grounded theory approach, the researcher attempts to derive a theory by use of the following techniques: constant comparison of data with emerging categories and theoretical sampling of different groups to maximize differences and similarities of information. A third type of approach for undertaking qualitative research is the phenomenological study in which the experiences of the subjects being studied are examined through the detailed descriptions of the subjects themselves. The researcher engages subjects in order to understand patterns and relationships of meaning. Through this processes the experiences of the researcher are "bracketed" in order to more fully understand those of the informants being
studied. Finally, there is the case study, which Cresswell describes as the exploration of a single entity or phenomenon ("the case") bounded by time and activity (such as a program, event, process, institution, or social group).

Yin (1989) notes that the case study has long been considered the "weak sibling" among social science research methods. It was once thought that case studies should only be used in the exploratory phase of an investigation, to be followed by surveys and histories for the descriptive phase and experiments to determine causality. Yin believes this hierarchical view is outdated. He argues that one reason that case studies have persisted as a research strategy is because of the unique contributions case studies make to our understanding of complex social phenomena.

Lincoln and Guba (1985) have observed that definitions of what a case study is abound, from such simplistic descriptions as "a slice of life" or a "depth examination of an instance" to more formal statements. Wilson (1979) defines a case study as "a process of research which tries to describe and analyze some entity in qualitative, complex, and comprehensive terms not infrequently as it unfolds over time" (p. 448). For Yin (1989), a case study is "an empirical inquiry that: investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly
evident; and multiple sources of evidence are used" (p. 23).

Upon review of several authors' descriptions of case study research, Merriam (1988) concludes that the following four characteristics form the essential properties of a qualitative case study: particularistic, descriptive, heuristic, and inductive. She believes a qualitative case study can best be defined as "an intensive, holistic description and analysis of a bounded phenomenon such as a program, an institution, a person, a process, or a social unit" (p. xiv).

Lincoln and Guba (1985) list several different forms of writing that have been labeled "case studies", including studies that have examined individuals, organizations, societies, cultures, social movements, events, incidents such as strikes, projects like the development of a new curriculum, or programs such as Headstart. They conclude that there exists no simple taxonomy with which to classify case studies, and note that case studies may differ on the following points:

Purpose: Case studies may be written so to chronicle a phenomenon, render a description, teach a concept, or test a theory or hypothesis. A given case study may serve several purposes.

Level of analysis: Case studies may be written at different analytical levels, from merely factual to interpretative or evaluative.
Actions of the inquirer: Depending on purpose and level, a case study may require that the author simply compile a factual chronicle or it may demand a more complex analysis of competing interpretations of a phenomenon.

End products: Depending again on purpose and analytic level, case studies will result in different products, from a "simple register of factual chronicles to elaborated judgments for the evaluative test" (p. 361).

A leading case study researcher, Robert Stake (1994), adds needed clarity to the often "slippery" notion of what a case study is by recommending that as a form of research, case studies should be defined in terms of the interest in individual cases, rather than the methods of inquiry chosen. He considers a case study both the process of learning about the case and the product of our learning. For Stake, the boundedness and the behavior patterns of the system under investigation are the key factors in understanding the case.

In light of the above discussion, my study can best be described as a case study as the major epistemological question driving my research will be what can be learned from closely examining the implementation of an innovation (CALL) in a specific, bounded system (an ESL program).

Merriam (1988) notes that most case studies in education draw upon other disciplines for methodology. This will be the situation here, as the research methods to be employed in my case study will be similar to those used in
other qualitative research designs. To reiterate, what is unique about a case study is not so much its methods (which are nevertheless important), but rather the types of phenomenon and questions it explores and the relationship to the end product (Merriam, 1988). Stake takes this argument further by noting that the end product, the knowledge learned from the case study, is unique from other research knowledge in four important ways. He claims that case study knowledge is:

- More concrete—case study knowledge resonates with our own experience because it is more vivid, concrete, and sensory than abstract.
- More contextual—our experiences are rooted in context, as is knowledge in case studies. This knowledge is distinguishable from the abstract, formal knowledge derived from other research designs.
- More developed by reader interpretation—readers bring to a case study their own experience and understanding, which lead to generalizations when new data for the case are added to old data.
- Based more on reference populations determined by the reader—in generalizing as described above, readers have some population in mind. Thus, unlike traditional research, the reader participates in extending generalization to reference populations. (Stake, 1981, pp. 35-36, as summarized by Merriam, 1988, p. 15).

It is my hope that the case study I present in this dissertation has produced the type of knowledge that qualifies as "case study knowledge".
CHAPTER III

METHODOLOGY AND DESIGN

This was a qualitative case study which examined the implementation of CALL in an ESL program serving adult refugees and immigrants from Vietnam. The research project was conducted at the Versailles Gardens Community Office of the Immigration and Refugee Services Program of a large, non-profit social services agency in New Orleans. The investigation of the implementation of CALL in the ESL program in Versailles Gardens was intense, beginning in April 1995 and ending in March 1996. The researcher was also the administrator of Immigration and Refugee Services.

The type of questions I brought to the study influenced the research approach I took. I was interested in understanding how CALL affected teaching, learning, and the administration of the ESL program, and expected that outcomes would be complex and very much context-dependent. I also believed that an understanding of how CALL impacted the program could best be developed in terms of how the participants described the changes they experienced. Since so little is known about the implementation of computer-assisted instruction in an adult learning setting, a flexible and exploratory methodology seemed the most appropriate. For the above reasons, the methodology of this report was primarily qualitative in nature. Qualitative data were obtained through the following methods: participant observations; interviews and focus groups;
video and audiotaping of students working at the computers; and document analysis— including teacher and administrator/researcher journals. Quantitative research methods were selectively employed, largely to clarify or confirm patterns in the data that had emerged during student interviews and observations of students working in the computer lab. Quantitative data were gathered and analyzed from three questionnaires administered to students at different points in the implementation process.

Creswell (1994) describes four research designs frequently employed when conducting qualitative research: the ethnography, which explores an intact cultural scene; the grounded theory approach in which the researcher attempts to generate a theory; the phenomenological study which emphasizes the experiences of the subjects, in part by "bracketing" those of the researcher; and the case study. He defines a case study as the intensive, holistic description and analysis of a single entity or phenomenon bounded by time or activity, such as a program, event, process, institution, or social group. I brought to this study specific questions about a process that I was interested in exploring from the perspectives of three main groups of actors, including those of the researcher/administrator. Therefore the design of this research project can best be described as a qualitative case study.
Research Setting and Background

The Vietnamese Community of Versailles Gardens

Versailles Gardens is a sprawling sub-division encompassing a 402-unit apartment complex called Versailles Arms, as well as duplexes and single family homes. Located 16 miles east of downtown New Orleans—yet still within official city boundaries—Versailles Gardens is home to 3154 Vietnamese, 2689 African-Americans, and 449 whites, according to the 1990 Census1 (Bureau of the Census, 1992).

The community is bounded on the north by Bayou Lagoon Maxent. Along its shores elderly Vietnamese have cultivated one of the most extensive community gardens in the United States. It is the last housing division along Chef Menteur Highway, which forms the southern border of the community. It is bounded on the west by Palace Street. The Versailles Arms Apartment complex is located on its eastern border.

Versailles Gardens is home to one of the oldest Vietnamese communities in the United States. In 1975 approximately 1000 Vietnamese refugees were resettled in the area by Associated Catholic Charities of New Orleans. As Section-8 housing was available at the mostly vacant Versailles Arms apartment complex, most of the refugees were housed there. After years of work, many refugees bought homes on the western side of Alcee Fortier Boulevard (J. Foley, personal communication, May, 1991). Through the

1 The Versailles Gardens community makes up Block Group 3 of Tract 17.29 of the 1990 Census.
years Vietnamese refugees continued to choose Versailles Gardens as their home in significant numbers. Since 1990 over 270 Vietnamese families have resettled in Versailles Gardens and the surrounding area (Associated Catholic Charities of New Orleans program records).

The Vietnamese of Versailles Gardens often refer to their community as lang, "the village". Versailles Gardens is in many ways like a Vietnamese village. Over thirty Vietnamese businesses— including restaurants, grocery stores, coffee shops, travel and insurance agencies and a pool hall—are clustered in a row of two-storyed buildings on both sides of Alcee Fortier at the entrance to the village off Chef Menteur Highway. Vietnamese from across the New Orleans area come to the open market inside the courtyard of a shopping complex in Versailles Gardens to buy fresh Vietnamese produce and fish on Saturday mornings. The elderly Vietnamese who grow most of the market's produce in their community garden are at the market every Saturday morning selling their harvests.

In a Vietnamese village the spiritual center of the community is the heart of the community. This is true for Versailles Gardens. Life for the Vietnamese of Versailles Gardens revolves around their church, Mary Queen of Vietnam, which has a membership of over 4,000 parishioners, all but a tiny fraction Vietnamese. Almost 80% of the Vietnamese in Versailles Gardens are Catholic (D.M.T. Luong, personal communication, April 11, 1994). Their
devotion to their faith is immediately evident to outsiders by the religious yard art displayed by many Vietnamese home owners- statues of the Blessed Mother and saints are often life-size in dimension. The village church produces several Vietnamese Catholic publications and is active in several national Vietnamese Catholic organizations. For these reasons and due to the large concentration of Vietnamese Catholics, New Orleans is generally considered the center of Vietnamese Catholicism in the United States.

Information gathered during the 1990 Census indicates that the median household income for Vietnamese households in Versailles Gardens is only $12,790. The number of Vietnamese families living below the poverty level is 48.86%, and 23.33% of the Vietnamese families in Versailles Gardens receive public assistance income. Sixty point two percent of the Vietnamese men and 40.2% of the Vietnamese women in Versailles Gardens are in the labor force. Most of the Vietnamese of the area work in relatively low-paying, blue-collar occupations. The most commonly reported jobs are as fishermen, waiters and waitresses, cashiers, cooks, and textile sewing machine operators (Bureau of the Census, 1992).

Many of the Vietnamese living in Versailles Gardens are not only isolated by geography, but by lack of English communication skills as well. The 1990 Census reports that 48.22% of the Vietnamese families in Versailles Gardens are
"linguistically isolated" i.e. no one in the household speaks English well.

**Description of the Immigration and Refugee Services ESL Program**

During the time the research project was conducted the ESL program of Immigration and Refugee Services was staffed by the ESL coordinator and eight part-time ESL teachers. The ESL coordinator reported to myself, the administrator of Immigration and Refugee Services. Most ESL classes were offered in the evenings in locations convenient to large concentrations of refugees to the New Orleans area.

The ESL program of Immigration and Refugee Services is competency-based. Its curriculum is modeled on the Mainstream English Language Training Project (MELT) core curriculum which groups competencies under eight topics or life skill areas (Shopping, Health, Housing, Transportation, Banking, Employment- Looking for a Job, Employment- On the Job, and Community) and six Cross Topics which include Means of Communication (Telephone and Money) and Broad Communication Functions (Personal Identification, Social Language, Clarification, and Directions).

Entrance tests and the quarterly achievement tests, which were developed in-house by the ESL coordinator to meet the needs and structure of the program, are used by the program to determine placement of students into one of four learning levels.
Students identified as Level one by the program's placement tests are absolute beginners in learning English and generally have little formal schooling. Some may be illiterate or barely literate in their native language. The curriculum at Level One aims to build a foundation of listening, speaking, and literacy skills.

Level Two students are beginners with very minimal English. They know the Roman alphabet and can tell time in English, count money, identify common foods, and know the parts of the body, but they lack the vocabulary and grammar to sustain discourse of any length. Their English listening skills are generally poor inside the classroom and basically ineffective outside the structure of the classroom.

By Level Three students have overcome major hurdles in learning English. They are able to communicate successfully in a variety of diverse situations of daily life, although they frequently encounter problems with structural aspects of their new language, such as verb tense and subject-verb agreement. Competency objectives at this level include the ability to describe health symptoms, read classified ads and housing notices, ask for directions, etc.

Students in Level Four have achieved basic fluency in speaking, listening, reading and writing in most subject areas related to daily life. Course objectives at this level are to enhance these competencies with an increased exposure to English in a variety of learning contexts. More
complex aspects of the formal structure of English are studied in Level Four including embedded questions, subordinate clauses, gerunds, and more complex verb forms such as the present and past perfect, past continuous, the passive voice, etc.

The ESL program of Immigration and Refugee Services has an "open entry/open exit" policy. Students can enroll in the program at any time, and they may continue in the program as long as they like. There were several older Vietnamese students (men and women in their late fifties and sixties) who had been attending ESL classes in the evening program for over three years when the project began in April 1995. Some of these older students were retired, and considered their English classes a vital link to their new culture.

Background and Description of the Study Site

The Immigration and Refugee Services program has provided ESL classes to Southeast Asian refugees in Versailles Gardens since 1976 (program records). The ESL program is known among members of the community, many of whom are from small villages in Vietnam, as truong lang-the "village school". During the course of the research project four ESL classes a day were offered in the Immigration and Refugee Services Versailles Gardens Community Office (two classes in the morning, two classes in the evening), four days a week to approximately 50 students a day. Classes were taught by four part-time ESL
instructors. Most (approximately 75%) of the students attending ESL classes in Versailles Gardens were refugees from Vietnam. The remaining students were relatives of Vietnamese refugees, and had immigrated to the U.S. to be with their family members. As immigrants they were required to pay a small fee to attend ESL classes, whereas refugees could attend class for free. (The ESL program was supported by grants targeting refugees.) The learning needs of the immigrant students were no different from the students with refugee status. Many students served by the program had arrived in the United States within the year prior to the start of the project. Most lived in the Versailles Gardens community and often walked to class.

Two bilingual Vietnamese counselors with the Immigration and Refugee Services program also had their offices at the Versailles Gardens Community Office. The counselors assisted local Vietnamese refugees with employment and social adjustment problems. Five months prior to the start of the research project they had begun to provide special services, such as after-school tutoring and recreational activities, to neighborhood youth considered "at-risk" for becoming involved in Vietnamese gangs, a problem that was of growing concern to the community.

The Versailles Gardens Community Office was located in the middle of a residential neighborhood three blocks from Alcee Fortier Boulevard, the main traffic artery into the
Versailles community. Like many homes on the street, which were almost all occupied by Vietnamese, the yard in front of the building was graced with religious art. Streamers from a year-round Christmas star adorned a statue of the Blessed Mother. The frequent sound of roosters crowing and the lush gardens in many residents' backyards lent a rural flavor to the otherwise suburban landscape.

The community office occupied one side of a single story duplex. Classes were held in the front room and in what normally would have been the back bedroom of the three-bedroom apartment. The only door to the apartment opened onto the front room, where two rows of desks faced a chalkboard attached to the wall. A long hallway led to the back classroom, which was smaller than the front classroom. In the back classroom a single row of desks faced the chalkboard on the wall next to the door. Opening off the hallway leading to the back classroom were a kitchen, the counselors' office, and the computer lab, which was the last room before the back classroom.

During the first 5 months of the study the computer lab consisted of three 486 IBM compatible PC units connected by a local network system to the server, which had three CD-ROM ports, as well as two "stand-alone" PCs not on the network. The stand-alone PCs utilized software that was not networkable. Each unit had a color monitor, microphone, sound board, and two sets of headphones. A small set of speakers was also available for each unit. In
October 1995 additional funding allowed for the purchase of two more PCs and an ink-jet color printer which were set up in the adjoining counselor's office and linked to the network. By that time both "stand-alone" PCs had been added to the network, and one was placed in the counselor's office with the two new units. Two more CD-ROM ports were also added to the server.

**Description of Project Software**

Six multimedia software programs were used by the ESL program in the course of this study: *Rosetta Stone*, *PLATO* (Reading One and Writing Curricula), *English Express* (CD-ROM component only), *Triple Play Plus!, Word Attack 3*, and the *ALA Lab System*. Major features of these programs are described briefly below.

*Rosetta Stone* requires that the learner match spoken English and/or written text with a corresponding digitized color photo. In the dictation mode students type the phrase they hear from the computer.

A *PLATO* Reading or Writing lesson begins with the presentation of a tutorial on a grammatical concept. The student must then choose the correct responses to a series of questions based on the tutorial. A mastery test must be completed before the student can advance to another lesson. There was no audio component to the *PLATO* software used in this study.

For the Photodictionary/Explore segment of *English Express* students repeat the sound of the vocabulary word
represented in a given digitized color photo and then repeat two sentences in which the target word is used. Students may click off the corresponding text if they choose to focus on listening skills and may print the target words in a vocabulary category and the corresponding dialogs for study at home. Users also have the option to record their voices and compare their pronunciation to the computer's. In the Photodictionary/Answer segment of English Express students hear and read questions involving the target word and then type a response, which may also be printed. The Travel Tales segment consists of a sequencing activity which asks students to match sound clues with the appropriate scene in a story. Students also have the option to write a story based on the cartoon pictures presented.

Triple Play Plus! consists of a wide variety of interactive games and comic strips which teach students vocabulary in three different learning modes: pictures with the sound of the target words, pictures with the sound and text of the target words, and a voice recognition mode, which proved highly unreliable and was not used in this study.

The ALA Lab System provides a variety of learning activities based on the adventures of two foreign students at a U.S. university. There is no graphical component to this software package. The version purchased by the program was not networkable and was accessible on only one of the

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
PCs, therefore teachers rarely assigned students ALA lessons.

With Word Attack 3 students learn to associate vocabulary words with the text of the definitions of the target words. The program tests recognition of the target words in five different game formats involving the text of the word definitions. The audio component of Word Attack 3 is limited to the computer pronouncing the target word, but the aural output of this program lacks the human voice quality of the aural output provided in English Express, Rosetta Stone, Triple Play Plus, and the ALA Lab System.

Description of the Two Units of Analysis

The case study considered here- implementation of CALL in the evening ESL classes in Versailles Gardens- consisted of two units of analysis: implementation of CALL in the advanced beginners' class and implementation of CALL in the low beginners' class, which were taught simultaneously by two different teachers. In the Versailles Gardens ESL program the low beginners' class (which I will refer to as the beginners' class) consisted of Level One and Two learners. The advanced beginners' class (which I will refer to as the advanced class) consisted of Level Three and Four learners. The two classes were composed of adult refugees and immigrants from Vietnam. A gross distinction between the beginners' class (i.e. Level One and Level Two students) and the advanced class (i.e. Level Three and Four students) was that a native English speaker willing to
modify her/his speech by using common vocabulary, simple sentence structures, and slow delivery could have sustained a conversation with a student in the advanced class, whereas this would not have been possible with a student in the beginners' class.

The decision to study implementation of CALL in the evening classes and not the morning classes was based largely on access- I was unavailable to conduct research during normal work hours. Analysis will at times include outcomes from the two individual classes, versus a strictly global examination of the evening ESL program in Versailles Gardens.

The beginners' class in this study was taught by Mr. Quoc Nguyen, himself a refugee from Vietnam, who had been teaching ESL to refugees for Immigration and Refugee Services since 1979. He is a small man, gentle in his actions and words. His daytime job was teaching math to fifth graders at a local primary school. He is a respected member of the community and was well-liked by his students, who appreciated his gentle and patient ways.

The advanced class was taught by a young woman and recent college graduate, Alice Tyler, who was hired by the program in March 1995, just one month before the study began in April. Alice had no previous professional experience teaching ESL, however, she had volunteer experience teaching ESL to refugee women in Portland. She was eager for the opportunity to work in a multi-cultural
setting such as Versailles Gardens. Alice was popular with her students from the start—they seemed to enjoy her youthful energy and enthusiasm.

Evening classes at the Versailles Gardens Community Office were held from 6 p.m. to 8:15 p.m. Monday through Thursdays. Before the project began I discussed with the teachers which evenings they would prefer to use the computer lab. It was agreed that the lab would be available for Alice's classes on Monday and Tuesday evenings and Quoc's classes on Wednesday and Thursday evenings. I requested that the teachers assign their students work in the lab at least once a week. Both teachers chose to take full advantage of their scheduled computer time and had their students use the computers twice a week for an average of two hours of CALL use per student per week (out of approximately nine instructional hours per week) throughout the research project. How the teachers chose to use the computers differed between the two teachers, and will be discussed in detail in Chapter IV.

Although all the students in Quoc's class were low in their English proficiency, there was still quite a wide diversity in English language skills, backgrounds, and learning styles evident among his students. Whereas some of his students were barely literate in Vietnamese, others had attended college in Vietnam. Their past occupations varied widely and included farmers and fishermen as well as a high school teacher, an army officer, and an accountant. His
class consisted of young people in their early twenties who had recently graduated from high school in Vietnam and older people in their 50's and 60's who had not been in a formal school setting for over 40 years and who had never finished primary school. Attendance in the beginners' class also varied greatly over time.

Many of the students who enrolled in Quoc's class during the course of the study—which lasted eleven months—were quite new to the United States, having arrived in the U.S. only days or weeks before coming to class. Their lives were still very unsettled as they were in the process of looking for work or a permanent place to live, and were staying with the family members who had sponsored them in the meantime. When the study began 19 students were enrolled in Quoc's class. From the beginning of the study in April through February, Quoc saw 43 new students enroll in his class. By the end of February only two of the beginner students who were enrolled in April were still attending Quoc's classes. (However two young men from Quoc's class who had "graduated" to Level Three were attending Alice's class.)

In June Quoc had an average class attendance of 17.24 (see Table 3.1). By August his attendance was averaging 11 students a night. In October, which is known as the Marion Month in the Catholic calendar, many of his students participated in reciting the rosary in the homes of their neighbors. (One evening I could hear the landlord's family,
Table 3.1.

**Average Daily Class Attendance Per Month**

<table>
<thead>
<tr>
<th>Month</th>
<th>Beginners' Class</th>
<th>Advanced Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>14.29</td>
<td>9.87</td>
</tr>
<tr>
<td>May</td>
<td>12.53</td>
<td>11.60</td>
</tr>
<tr>
<td>June</td>
<td>17.24</td>
<td>14.94</td>
</tr>
<tr>
<td>July</td>
<td>11.77</td>
<td>12.67</td>
</tr>
<tr>
<td>August</td>
<td>11.00</td>
<td>11.94</td>
</tr>
<tr>
<td>September</td>
<td>10.73</td>
<td>10.93</td>
</tr>
<tr>
<td>October</td>
<td>7.63</td>
<td>10.67</td>
</tr>
<tr>
<td>November</td>
<td>8.93</td>
<td>10.67</td>
</tr>
<tr>
<td>December</td>
<td>12.79</td>
<td>9.07</td>
</tr>
<tr>
<td>January</td>
<td>13.44</td>
<td>8.53</td>
</tr>
<tr>
<td>February</td>
<td>10.79</td>
<td>12.00</td>
</tr>
</tbody>
</table>

Mean of means = 11.92  Mean of means = 11.17

SD = 2.61  SD = 1.78

Range = 9.61  Range = 6.41

n = 62  n = 41

Females = 39  Females = 13

Males = 23  Males = 28

\( ^a \) CALL implementation began April 24, 1995.

\( ^b \) includes two students who "graduated" from the beginners' class.
who resided in the other half of the single story double where classes were held, reciting the rosary in sing-song voices with other residents of the neighborhood.) In October Quoc's attendance dipped to an average of 7.63 students an evening. By January it had climbed up again to 13.44. The mean of the monthly averages of daily attendance rates for Quoc's classes from April 1995 through February 1996 was 11.92, with a standard deviation of 2.61 and a range of 9.61. A total of 62 students were enrolled in the beginners' class during the project period (39 females and 23 males).

Attendance in Alice's class was more stable. Fourteen students were enrolled in Alice's class in April, 1995. Alice had only 27 intakes from April 1995 through February, 1996, with 12 intakes coming in the summer months of May and June. Seven of those 12 new students were on summer break from a local junior college. In February 1996 the advanced class still had six students who had been enrolled in the class from the beginning of the project, as well as two former beginners who had graduated from Quoc's class. The mean of the monthly averages of daily attendance rates for Alice's classes from April through February was 11.17 students an evening, with a standard deviation of 1.78 and a range of 6.41. A total of 41 students (13 females and 28 males) were enrolled in the advanced class during the project period, including two former members of the beginners' class.
Alice's students also varied in age and occupational backgrounds, but were quite similar in their language abilities and educational backgrounds. Surveys administered to students in July and March contained questions on previous education (see Appendices B and C). Of the 19 students surveyed in the advanced class, 15 students (78.95%) had studied English in Vietnam at some point in their lives before coming to the U.S. Less than half the students surveyed in Quoc's class had studied English in Vietnam (11 out of 23 students). The students in the advanced class tended to be better educated than the students in Quoc's class. Seventy-eight point nine five percent (78.95%) of the advanced class students surveyed had completed 12 years or more of school in Vietnam. Of the 22 students who responded to this question in Quoc's class (one of his students chose not to respond to this item), only 9 (40.91%) had completed 12 years or more of school in Vietnam. Two of those 9 students had received 17 years or more of schooling in Vietnam, yet it was still necessary to place them in the same class as students who had attended school in Vietnam for only 3 or 4 years.

Alice always assigned the same computer lesson to all her students, whereas after the first few weeks Quoc had to assign his students different lessons depending on their language level. The lives of Alice's students seemed more stable than Quoc's. Her students were either retired or more settled in their jobs than Quoc's students. Her
class rarely received a new arrival to the U.S. Data gathered from the student questionnaires show that only 2 out of 19 students questioned in Alice's class had been in the country for less than 10 months when first surveyed. However, over half (12 of 23) of the students surveyed in Quoc's class had been in the U.S. less than 10 months when the questionnaires were first administered.

Data Collection

Research Protocol

Before fieldwork commenced I obtained permission from the agency's Research Review Board to conduct the study. I observed the agency's guidelines for the ethical conduct of research throughout the project. Students and teachers were informed of the purpose of the research project, and their permission to be included in the study was sought and obtained. Teachers and students were asked to sign consent forms (see Appendices D and E). The students' consent forms were written in their first language (Vietnamese). The names of students and staff have been changed to protect their anonymity.

Parameters of Data Collection

Multiple sources of evidence were used to increase confidence in the trustworthiness of conclusions drawn from the study. Data included observations of the two classrooms and students working in the computer lab, interviews and focus groups, document analyses of teacher and researcher/administrator journals, questionnaires
administered to the students, and analyses of audio and videotaping of students working together at the computers.

Initially I took a very "hands-on" role in implementing CALL in the ESL program in Versailles Gardens, and was at the class site almost every evening classes were held during the first three months of the study to assist students in the lab and to train the teachers in CALL use, as well as to observe first-hand the implementation process. During the first months of the study my observations were that of a participant observer functioning primarily as a participant. After a lab monitor was hired in mid-July, my perspective became more that of a participant observer functioning primarily as an observer. From July through December I visited the study site an average of two out of four class sessions a week. As my understanding of the case grew and data began to become redundant, I visited the study site only once a week in January and February until data collection was completed at the beginning of March. In total, I spent over 180 hours in the field observing- and assisting- in the implementation process and interviewing students and teachers.

A major concern of this study was to understand the changes that occurred in the program through the introduction of CALL. Time sampling of a systematic nature was employed to accomplish this objective. Subjects were asked the same questions about teaching or learning with CALL at different points during the implementation process.
By comparing data gathered through interviews, surveys, and observations over time I hoped to develop a grasp of the changes CALL brought about in the learning environment and actors' roles as outlined in the study's research questions. I did not restrict my inquiry to the general descriptive questions were which repeated over time, however. As other issues and ideas emerged in the course of the study they were also examined and explored.

Data Collection Procedures

Participant Observations

Before the study began I made six visits to the class sites to observe the ESL classes and obtain a better sense of the learning environments of the ESL program and how the classes functioned. Spradley's (1980) Descriptive Questions Matrix guided my observations during this pre-study phase.

Fifteen classroom observations were conducted through the course of the research project, during which I paid special attention to the dynamics of group learning and the incorporation of CALL material into classroom discussions.

A major focus of my observations were student interactions in the computer lab. At times my observations included an overall picture of what was taking place in the lab. At other times I focused on interactions between particular users. While observing student pairs, I would often sit in a chair next to the computer users and jot down my observations in a notebook. I observed students
working together in the computer lab on 55 different occasions during the course of the research project.

When possible, observations were conducted using the full field note method of data collection (Lofland, 1971), which involved taking extensive handwritten notes during the events being observed. However, during the first three months of the study it was often difficult to record observations at the class site as I was so busy instructing students on how to use the programs and resolving minor technical problems with the computers. Throughout this period of the implementation process I recorded my thoughts and reflections on what I had observed at the site into a small tape recorder during the long drive back into town after class ended. I felt it important to do this while the evening's events were still fresh in my mind.

**Interviews and Focus Groups**

Interviews were usually held in the counselors' office at the study site. Interviews were always tape-recorded and the questions asked were open-ended in nature.

Initial student interviews were conducted in May 1995 and consisted of myself, the bilingual research assistant who served as my interpreter- Minh Pham, and an individual student. I interviewed four students with the help of Minh in May. It became apparent, however, that students were not comfortable in the kind of interview situation I had presented them with. Their responses to the questions I posed were short and little information was forthcoming.
Perhaps the social distance between myself, whom the students knew as the director of the refugee program, was too great for the students to feel at ease. Having two individuals focusing on every word a student said may have been intimidating as well. The awkwardness of constantly translating back and forth from Vietnamese to English may also have dulled spontaneity.

Since the questions I was interested in at this early stage of the investigation were of a general nature and interviews were proving so un-productive, I decided that I could best obtain the information I was seeking by having students complete an open-ended questionnaire (see Appendix A), which was administered to students in late May 1995. A second questionnaire was administered in July, 1995, and the third and final questionnaire in March, 1996.

By the seventh month of the study I felt the need to obtain more in-depth information from the students about their experiences with CALL than could be obtained through a questionnaire. I decided, therefore, to again conduct interviews with students, but with a major change in methodology: I would not be present for the interviews. Instead I asked Minh, who was also a social service counselor for the program, to conduct the interviews without me and exclusively in Vietnamese using questions that I had prepared beforehand as a guide. I explained to Minh the purpose and goals of my research and instructed him to encourage students to elaborate on their responses.
As he was in charge of the computer lab for the new youth program, he was already quite familiar with computer learning and the programs we were using and was able to provide skillful prompting to the students. After each session he transcribed the interview tapes word for word into English. I was very pleased with the information that was gained in this way. The students opened up with the research assistant in ways they had not when I had been present. Minh interviewed four students one-on-one during the course of the investigation. Copies of the interview guide I prepared for his use may be found in Appendix F.

In January I asked Minh to conduct focus groups with students to see if the dynamics of responding in a small group might also contribute to my understanding of the case. Again, I was pleased with information that was obtained with this approach. At times students in the focus groups built upon their classmates' responses and a consensus emerged on an issue. Four group interviews consisting of 2 or 3 students were conducted by Minh. A total of 11 students were questioned in a focus group setting.

I feel fascinating insights into students' thoughts and opinions about CALL and learning English were obtained through the interviews lead by my research assistant. Conducting the interviews exclusively in the students' first language I sensed was only part of the reason, however. As Glesne and Peshkin (1992) note, gaining trust
and establishing rapport is crucial to the interviewer's success. Most of the students already knew Minh through previous interactions they had with him as the social services and job placement counselor for the refugee program. He is a kind and gentle young man, and very respectful of those he serves. Therefore I believe the students trusted him and were immediately at ease when talking with him, which contributed to the comfort level and resulting spontaneity of his interview sessions.

In late February I briefly experimented with me again leading interviews with students to discuss subtle issues having to do with the research question on student perspectives on their roles as learners. However, I believe the social setting and dynamics of the interview situation once more worked against spontaneity, which explains in part why little insight on this issue was gained.

The interviews I conducted with the teachers were a combination of two types identified by Patton (1980). Similar to "informal conversational" interviews, I asked questions as they emerged in the natural flow of conversations so to increase the spontaneity, salience, and relevance of the information revealed. Like the "interview guide" approach, I prepared ahead of time a list of specific questions which were asked repeatedly throughout the study (see Appendix G) in order to increase the comprehensiveness of data and to allow for the analysis of change over time.
Interviews and focus groups with students averaged 20 to 30 minutes, whereas the five interviews I conducted with each teacher were usually an hour and one-half in length. Teachers were interviewed at the following times: April, May, June, September, and December, 1995. The first three interviews I conducted with the teachers were transcribed word for word. By the fourth interview I felt I understood enough about their feelings and opinions about CALL to paraphrase some of their responses during the transcription process.

Journals

Merriam (1988) argues that documentary data are particularly good sources for qualitative case studies because such information can ground an inquiry in the context of the problem being investigated. Three major types of documents are available to the researcher for analysis, including archival or public records, personal documents, and physical traces. In addition, the researcher can request the creation of documents for the purpose of the investigation, which was a strategy emphasized here.

I asked the teachers to keep journals on their teaching experiences during the implementation of CALL. Written accounts can serve as a source of "sensitizing concepts" and can suggest how their authors organize their experiences, the imagery and "situated vocabularies" they employ, and the routine events or problems they encounter (Hammersley & Atkinson, 1983). I asked that the teachers be
especially attentive to any problems they encountered during the implementation process or changes they noticed in their teaching methods or how class time was structured. I also requested that they note any changes they observed in student behavior after computers became a part of the learning environment. At different points in the implementation process the teachers also were asked to respond in their journals to certain questions from me about the implementation of CALL.

Mr. Quoc chose to record his journal in a small tape recorder I had provided each teacher for this purpose. Alice preferred to record her journal in a notebook. While transcribing the teachers' journal entries during the course of the implementation process, in my role as program administrator I responded to the issues and concerns they had expressed in their journals, so that a dialog of sorts developed out of the process.

Writing about their practice can lead journal writers to discover the principles behind their everyday actions (Holly & Smith, 1989, cited in Caroll, 1994). I also kept a journal of my thoughts, feelings, and concerns as the program administrator so to obtain a better grasp of why I made certain decisions and took certain actions during the course of implementing the CALL innovation.

**Video and Audiotaping of Students**

A major problem I encountered when observing student interactions in the lab was a language barrier. While
working together on the software programs students spoke to each other almost exclusively in their first language. English was used mainly to repeat text on the screen, to voice answers to questions posed by a program (choices were usually listed in English on the screen), or to define a word, e.g. Castle [Vietnamese word for "is"] [Vietnamese word for "castle"]. Occasionally partners would rehearse to each other a sentence they were trying to compose on the computer.

To obtain a clearer understanding of the nature of peer interactions three pairs of students were videotaped and six pairs of students were audiotaped working together on CALL lessons. I reviewed the videotaped lessons to search for general patterns of interaction, but as the sound quality was so poor these were not transcribed.

During the audiotaping my bilingual research assistant sat next to each student pair being recorded so he could hear and write down as much of their discourse as possible. He also noted significant gestures, such as when a student pointed to the screen or reached for a dictionary. Afterwards he listened to the audiotape and filled in any discourse that he missed, so that audiotaped sessions were essentially transcribed word-for-word. Students were audiotaped working on the two software programs used most frequently in the project, the Photodictionary and Answer segments of English Express and Rosetta Stone, modes one
and two and dictation. Audiotaped sessions for each of the
6 student pairs were 15 to 20 minutes in length.

Student Surveys

Three questionnaires were administered to students at
three different times during the implementation process: in
early May, 1995; July, 1995; and March, 1996. The
questionnaires were translated into Vietnamese by my
bilingual research assistant. When I administered the
questionnaires, he provided verbal instructions to the
students in Vietnamese. He also translated the students' responses into English for my analysis. Copies of the three
questionnaires may be found in Appendices A, B, and C.

Questions posed in the first and second questionnaires
were almost exclusively open-ended. However, the third
questionnaire included items that required students to rank
certain responses, as well as three semantic differentials.
An example of how to complete a semantic differential was
provided in Vietnamese, using a target object with which
the students were all familiar. Although instructions were
exclusively in Vietnamese, a few students left the ranking
and semantic differential items blank. I returned to class
and again asked my research assistant to explain how to
answer these questions. Some students were then able to do
so, but a few still appeared confused. Rather than
embarrass these students, I did not pursue their responses
to ranking tasks or semantic differentials any further.
Data Analysis

Lincoln and Guba (1985) write that "data analysis in qualitative research must begin with the very first data collection, in order to facilitate the emergent design, grounding of theory, and emergent structure of later data collection phases" (p.242). Miles and Huberman (1994) warn that should the qualitative researcher wait until the end of the study to begin analysis, the analyst will be overloaded with more information than can be processed.

To facilitate grounded theory and an emergent design and to avoid data overload, analysis of data was on-going with data collection and recursive in design. The major research questions with which I began the study provided an overall guide to what I was looking for and often helped to focus observations and the questions that I asked. When examining journal entries, observation notes, and interviews, patterns that seemed to be taking shape were noted. New questions that came to mind were explored in subsequent observations in the field or in interviews with the teachers and students. The second and third questionnaires administered to students sought to confirm or clarify patterns in the data that had emerged during previous observations or interviews.

Techniques Used to Analyze Data

Several data analysis techniques recommended by Miles and Huberman (1994) were be used to make data-analysis a
process simultaneous to data collection. These are described below.

Coding the Data

An important part of early and on-going analysis is coding the data (Miles & Huberman, 1994). Raw field notes from interviews and observations were converted to "write-ups", i.e. legible transcriptions, usually within a week following a data collection session. Text was then entered into Qualpro (Blackman, 1993), a text database software program, and coded. Qualpro facilitated easy retrieval and organization of coded data. During the first weeks of the study data were coded soon after write-up. Later in the study, as the amount of data began to mount, coding was postponed, sometimes for several weeks, so that data collected during the week could be typed up and entered into Qualpro before the next week began.

Miles and Huberman (1984) define a code as "an abbreviation or symbol applied to a segment of words- most often a sentence or paragraph of transcribed field notes-in order to classify words" (p. 56, emphasis in the original). They list three kinds of codes: descriptive, interpretive, and explanatory. Codes are usually derived from a study's research questions, and help the researcher to spot and pull out all the segments of data relating to a particular question, concept, theme, or hypothesis. Codes for data analysis can be developed prior to data collection.
or while data-collection is on-going. Both methods were used here.

Extensive reading in the research area as well as certain program needs honed my conceptual viewpoint and led to the development of my original research questions. I was particularly influenced by Huberman and Miles' seminal and comprehensive study of educational innovations, *Innovation Up Close* (1984). Therefore I brought to data analysis a "start list" of codes for tagging processes, characteristics, events, and issues which I felt would be salient to answering the research questions with which I began the study. Appendix H contains this list.

As the data grew so did my code list as new themes were discerned and categories of interest took shape. Starting codes that proved irrelevant for this study were discarded along the way. (See Appendix I for the final list of codes).

**Memos**

Memoing assists the analyst in moving from the data to the conceptual level, developing categories and showing their relationships, and building a better understanding of processes and outcomes at work (Miles & Huberman, 1994).

While fieldwork was on-going, I frequently wrote memos to myself about what I understood to be taking place during the implementation process. From these reflections questions emerged that I explored in future site visits.
Reflective Remarks

During write-up sessions various thoughts and reflections "swim into awareness" for the researcher. Such insights can add substantial meaning to the write-up and can assist coding (Miles & Huberman, 1994). When jotting down raw field notes or coding the data I recorded my insights, which were in turn coded and analyzed.

Data Displays

Miles and Huberman (1994) define "display" as a visual format which presents information in a systematic way for the user (p.91). They contend that valid data analysis not only requires, but is driven by focused displays that permit a viewing of the full data set arranged systematically in such a way as to answer the study's research questions. Data displays permit careful comparisons and the detection of differences, patterns, themes, and trends, thereby increasing the likelihood of drawing and verifying valid conclusions. Data displays were used here to analyze changes that occurred in the program during the implementation process.

Data having to do with problems and barriers to implementation at different stages of the implementation process were displayed in relation to the actions that were taken to solve the problems, and the administrator's roles during the whole process (see Tables 4.1 and 4.2). An understanding of how the learning environment was changed by CALL was facilitated by a chart that compared changes in
the organization of classroom and computer lab sessions through time (see Tables 4.4 and 4.5).

**Verification Steps**

Any form of research must be designed to provide for the credibility of findings and the conclusions drawn. Investigations conducted within the qualitative research paradigm are based on the assumption that reality is not a fixed, objective truth, but rather a multiple set of ever-changing mental constructions made by humans. Thus the credibility of a qualitative study depends on how truthfully the investigator has represented those constructions and how credible the interpretations of those realities are to others, particularly to the subjects of the investigation (Lincoln & Guba, 1985).

Merriam (1988) has summarized ways that qualitative researchers ensure for internal validity, or the "trustworthiness" of data and findings. Descriptions of three such verification strategies and how they were employed in this study are listed below:

1) **Triangulation**: the use of multiple investigators, multiples sources of data, or multiple methods to confirm emerging findings.

I designed the research project and was responsible for the direction it took, so in a sense only one investigator conducted this study. However, throughout the research project my bilingual research assistant provided me valuable insights into the Vietnamese culture and the
Versailles Gardens community. As described above he eventually assumed the role of student interviewer. Therefore, the project was able to benefit from both our perspectives.

Multiple sources of data at different points in time were used in this study and included the students, the two teachers and the lab monitor; and the administrator/researcher.

Five distinct methods of investigation were employed: participant observations; interviews and focus groups; document analysis of teacher and researcher/administrator journals; video and audiotaping of students working together in the computer lab, and questionnaires administered to the students.

2) Member checks: corroborating findings and interpretations with informants.

Feedback from students, teachers, and the lab monitor were used to confirm or disconfirm "hunches" during fieldwork, as well as to formulate decisions regarding the most appropriate use of the innovation. When checking out interpretations, Huberman and Miles (1994) warn against introducing bias that may effect informants' perspectives and behaviors. I was attentive to this issue, and attempted to frame member checks in such a way that researcher effect was minimal.

As I began to come to some conclusions about the data while conducting fieldwork as well as after fieldwork had
been completed, I met with the teachers and the lab monitor several times to confirm if my interpretations resonated with their experiences with CALL. Patterns in the data regarding student learning with CALL were checked largely through the surveys administered to the students.

3) **Long-term observation at the research site or repeated observations of the same phenomenon.**

Fieldwork was conducted over a period of 46 weeks. I spent over 180 hours at the study site observing the implementation process and interviewing teachers and students. Time-sampling of a systematic nature was employed to ensure that particular study variables were noted at different points in time.

**Other Issues**

Miles and Huberman (1994) also suggest that emergent findings be checked against outliers, that negative evidence be sought out, and to follow-up on surprises. Such exceptions to emergent patterns keeps the researcher honest and can help build better explanations. I actively looked for evidence that might challenge my conclusions, so to protect against parsimonious data reduction and other distortions to the data.

**External Validity**

As Robert Stake (1994) reminds us, the purpose of case study research is not to represent the world, but to represent the case. Furthermore, qualitative research is based on the assumption that only time and context bound
working hypotheses are possible (Lincoln & Guba, 1985). Thus, external validity in the traditional (positivist) sense, i.e. the extent to which one can generalize from the study's sample and environmental conditions to a defined population and other environmental conditions, would not hold here.

Generalizability is of course possible for qualitative case studies, but must be thought of in a different way than for experimental studies. In a qualitative case study, the question of generalizability is ultimately related to what the reader is trying to learn from the case (Wilson, 1979). For this reason, the findings must include "thick descriptions" for the readers to assess the potential transferability and appropriateness for their own situations (Miles & Huberman, 1994). Such detailed and up-close descriptions are the strength of case studies.

It is my hope that I have provided in this study the kind of context-rich and meaningful descriptions of the research setting and the implementation process needed for other ESL program administrators, teachers, and researchers to draw their own conclusions regarding the generalizability of this study to their own situations.
CHAPTER IV

RESEARCH FINDINGS

In this chapter findings are grouped in the following sections: Implementing CALL, Teaching with CALL, and Learning with CALL. In each of these sections a major focus will be the perspective of one of the three groups of actors who composed the case, i.e. the administrator, the teachers, and the students, respectively.

Implementing CALL

Wolcott (1994) reminds us that qualitative researchers need to be storytellers. By describing how and when events take place, qualitative researchers build their cases and in an everyday way make sense out of what happened. I will begin this section on research findings by first relating important events in the implementation process in the order they occur, so the reader can gain an understanding of how the innovation took shape for the ESL program studied here. Schon (1991) suggests that storytelling and story analysis can also facilitate an important kind of reflection, a consideration of why people acted as they did. Along these lines, at certain points in the following narrative I will offer interpretations of actions I took as the administrator of the program, which I hope will contribute to an understanding of how an administrator's "mindscape" shapes practice.
Adoption of the Innovation

Background and Motives to Adopt

In May 1991 the author accepted a position as the administrator of the Immigration and Refugee Services Program of a large social services agency in New Orleans after completing the course work requirements for a doctoral degree in educational leadership and research at LSU. My new job description included managing six different grant programs providing an array of services to refugees and immigrants in the New Orleans area. Such services included ESL classes, employment counseling and placement services, health screenings, and immigration legal services. As program administrator I was also responsible for supervising a diverse staff of some twenty-three employees. For the next two years thoughts of researching a topic for my dissertation project were put on the back burner as I focused my energies on meeting the many challenges my new job with Immigration and Refugee Services presented to me.

In the summer of 1993 I began to explore a program of reading in search of a suitable topic for my dissertation. When I first began working at the agency in 1991, I had briefly considered CALL for use in our ESL program, but was disappointed in the available software. Most ESL software at that time consisted of drill and practice exercises focusing on discrete grammar points or text manipulation activities, and was geared for university level students.
One of the greatest needs of the students in the Immigration and Refugee Services ESL program was to achieve survival level English, involving the development of basic listening, speaking, and literacy skills and the vocabulary to function in everyday life. In 1991 transportability between IBM compatible hardware was a particular problem for sound interface cards, making the delivery of programs with an aural component extremely difficult. (The agency only permitted the use of IBM compatible hardware and software.) Therefore I was not focusing on CALL as a research topic when I began to resume work on my graduate studies in the summer of 1993. Having been immersed for the previous two years in the issues facing refugees and other immigrants to the United States, my research interests began to take shape around other aspects of immigrant education.

After several months of reading, I was leaning towards an investigation involving the schooling of immigrant children. On October 10, 1993, I made a preliminary site visit to a primary school serving an almost equal number of Vietnamese and African-American children. That event was pivotal in helping me to focus my research topic, but in an unexpected way. The principal of the primary school was most gracious in her hospitality. The tour of her school lasted almost two hours, during which time we visited briefly every classroom in the building. Afterwards I found myself completely overwhelmed by the thought of trying to
make sense out of all there was to understand in that new environment, especially when I had so little time to spare during school hours.

Like a bolt of lightning I realized that it was unrealistic for me to think I could spare the energy or time on any research project which would take me away from my own work. (Perhaps many educators who desire to undertake a research project come to the same conclusion, and sooner than I did.) This realization lead me to the following decision: I would conduct research that would involve and hopefully improve upon some aspect of an educational program I administered. It was then back to the drawing board for a research topic.

It was following a meeting later that month with the person who would eventually become my committee chair that I began to seriously reconsider CALL as a possibility for the Immigration and Refugee Services ESL program. My interest in computer-assisted learning had been piqued by a research project I had participated in as a graduate student, and I was still intrigued by the possibilities computers could afford learners in our ESL program. Dr. MacGregor was confident that the technology existed to provide a rich language learning environment for second language learners and urged me to explore recent developments in educational software.

After our meeting, I decided to seriously examine CALL more in-depth. During the next few months as I began to
explore the literature on CALL and the current state of ESL software and hardware, I was excited to learn about the multi-media CD-ROM programs that were on the market. One of the first I looked at was English Express, which contains hours of digitized speech and presents high frequency vocabulary words with color photographs in an interactive context.

I began to make more frequent visits to our ESL classes to see what role CALL could play, and was struck by the special challenges that the open-entry, multi-level aspects of the program presented to teachers and students. At one class I observed a middle-aged couple who had arrived in the U.S. from Vietnam only a few weeks before. This was their first time in class, and they understood virtually no English. The teacher had the couple sit at a table with other low-level beginning students who had been in the class for several months. She then resumed leading the group in an exercise in asking for and following directions using simplified street maps. I thought to myself, this is "teaching English by osmosis". The new couple could not follow what was being presented, yet how could the teacher drop everything and attend to their specific needs? Later I reflected that a potential role for computers in such a situation might be to individualize instruction to newcomers.

My observations continued through the spring and by the summer of 1994 I was sure CALL would be a benefit to
the program as well as an interesting and worthwhile research project. This mindframe and other emerging factors lead me to begin writing computer costs into two grant proposals I was submitting.

In February 1994 the grant manager for one of the two refugee employment programs I administered requested that we consider using an another approach for preparing refugees for the work force. The grant project in question was at the time designed as an on-the-job-training (OJT) program in which employers were reimbursed for hiring refugees. Over the years local employers had come to appreciate the hard work they could expect from refugee employees and were eager to hire our clients, therefore the incentives provided by the OJT program had become unnecessary.

At the same time that changes in the OJT program were being requested, interest in English classes among the refugees and immigrants in the community was growing, fueled in large part by Congress threatening to deny non-citizens access to federal benefits such as food stamps and Medicaid. The grant manager, whom it is important to note has a strong background in ESL teaching and research, agreed with me that CALL would be a better use of the available funding than OJT. He, too, was intrigued by the potential for CALL in teaching English to refugees. It was then decided to re-structure the program in question from an OJT program to an ESL program. The new program would
complement the ESL program already in existence by providing for the hiring of two more teachers at our two largest class sites as well as the installation of computer learning labs at those sites.

The projected start-up date was October 1994. I also included computer costs in another grant to provide after-school tutoring to at-risk Vietnamese teens in New Orleans East. Although the first priority for these computers would be for the kids in the afternoons, I planned to use them in the adult ESL program in the evenings as well. Funding for the new youth program also became available in October 1994.

As the reader can see—certain conditions, coincidences, and motives influenced my decision to implement CALL in the ESL programs I administered. It has been noted that educational innovations are not introduced into a vacuum (Huberman & Miles, 1984). There exists within any educational setting a web of relationships and organizational and personal histories that shape the adoption of the innovation and are in turn impacted by the innovation. Clearly a major factor here was the administrator's desire to adopt the innovation.

Upon an in-depth examination of innovation-based school improvement programs, Huberman and Miles (1984) found it worthy to note that in only a few cases did adoption result from a perceived problem to which the innovation was seen as a solution. This was the case in my
study. Teachers were not calling out for help dealing with the constant influx of low English proficiency students, nor were students demanding that the program provide them with the computer skills to gain an edge in an increasingly high-tech work environment. Nevertheless, I could see where CALL could enhance the quality of instruction in the program and better prepare students for the work force.

My motives for opting for CALL in the program were multiple, not the least of which was my personal goal of completing my Ph.D. studies. In the same study, Huberman & Miles report that in almost half the cases they looked at the incentives for adoption of an innovation by users were tied up with career advancement plans. I admit that is the case with the administrator here. I would have pursued CALL as a worthy addition to our ESL program had I not chosen to focus on its implementation as a research topic, but not with the determination and commitment that I devoted to the project to be examined here. Whereas the program benefited from the implementation of the innovation, I also benefited from the research I was able to conduct.

Huberman and Miles (1984) concluded that although too many career-driven motives can cripple an innovation, too few deprive a project of the energy to follow it through to stable continuation. I believe my admitted self-interest in seeing the innovation through ultimately contributed to the innovation's success. As I continue with the story of the implementation process, I will strive to be honest in the
special challenges that the dual role of administrator and researcher presented to me.

**Preparation for the Innovation and Pre-Study Analysis**

In June 1994 I began to make focused observations of the ESL class sites within the program. Spradely's Descriptive Question Matrix (1980) provided a general framework for the questions I asked myself in this pre-study phase. I also began to inform teachers and students about plans to implement CALL and how the program would benefit from this. My intentions were to build support for the innovation and minimize resistance that might arise by teachers viewing the innovation as coming "out of the blue". I assured both teachers and students that they would find the computer programs we would implement to be "user friendly". Initial reactions were generally positive, although one teacher insisted she was computer "illiterate".

Implementation of CALL was due to begin at the start of the new contract year in October 1994, but was delayed by bureaucratic entanglements. A signed contract from the state, required before any purchases could be made for the program, was not received until late December. The lengthy routing process for approval of a capital expenditure request at the agency was held up unexpectedly by confusion over assigned costs, and was finally approved February 2, 1995.
Meanwhile I continued my search for appropriate software and familiarized myself with the hardware and network requirements of potentially useful programs. I was able to contact two refugee programs that were using CALL—one in Arlington, Virginia, and another in Kansas City, Missouri. Their CALL specialists provided helpful recommendations regarding software selection. However, both these programs were using CALL in a different way from what I envisioned for our ESL program. At their CALL sites the computers were made available in an "open lab" setting where students were given the option to drop in and use the computers at their convenience. Thus, issues of teacher training and integration of CALL lessons into the teaching curriculum were not as salient as they would prove to be for our program.

The person responsible for programming and installing PC's at the agency found himself overwhelmed by other projects, and was not ready to take on the task of ordering the hardware for the project until early March 1994. Finally in mid-March the computers arrived. By then teachers and students were beginning to doubt if they would ever see computers in the program. I had to assure them this was not the case, although I was beginning to have doubts myself.

By February I had decided I would study implementation of CALL in the evening classes in Versailles Gardens, instead of the morning classes in Versailles Gardens or the
evening classes in Marrero (on the West Bank of the Mississippi), the second CALL site in the grant project. Several factors influenced this decision, access being the greatest one. By conducting research in the evenings after work I would be free to devote to the project the many hours of fieldwork it would require. Additional hardware and software purchased for the tutoring component of the new program for at-risk Vietnamese teens, also headquartered in the Versailles Gardens office, would be available to the ESL classes in Versailles Gardens. Therefore I felt there would be more and varied opportunities to learn about CALL at the Versailles Gardens classes. Finally, it appeared as though the program was not going to be able to renew its lease in the West Bank site, which indeed turned out to be the case. I decided not to order computers for the Marrero program until a secure site with a long-term lease could be arranged for.

In early February 1994 the teacher for the advanced beginners class in Versailles Gardens resigned from the program due to a progressively worsening health condition. Her attendance had become erratic and the number of students in her class had dropped to only three students. At approximately the same time the Marrero night teacher resigned to take a teaching position in the evenings at a local university.

In February the ESL coordinator and I began to interview potential applicants for the two sites. For the
Versailles Gardens site I was looking for someone who would be comfortable with computers and who would be receptive to incorporating CALL into her/his teaching. I also realized it was critical for the project as well as my research study to find a person who would be reliable and stay with the job. As is often the case when the ESL program has to fill a part-time teaching position, none of the candidates had previous professional experience in teaching ESL. Alice, however, had volunteer experience teaching ESL to adult refugee women in Portland and had, in her words, "grown-up with computers". She also appeared eager to take the job and was very interested in working with CALL. One issue I did not want to have to struggle with if I could avoid it was having to convince a teacher of the merits of using the innovation. I also wanted to work with someone whom I thought would be able to take advice and criticism well. The ESL coordinator and I decided to hire Alice to teach the advanced beginners' class in Versailles Gardens. She taught her first class on March 7, 1995.

Another major actor in this case study was Mr. Quoc Nguyen, the teacher of the low beginner's evening class in Versailles Gardens. Mr. Quoc had been teaching ESL to refugees for Immigration and Refugee Services since 1979. He is a small man, gentle in his actions and speech. His daytime job was teaching science to fourth graders at a local primary school. After his school day ended, he tutored in an after-school program at a local church, where
he was an active member and respected leader. Teaching ESL at the Versailles Gardens Community Office was his third job of the day, although one would never have guessed it by observing his ESL classes. He came well-prepared, and presented his lessons with energy and enthusiasm.

Mr. Quoc's lessons were teacher-centered, but he managed very well to maintain the attention of his entire class. A key factor in his teaching success was how comfortable and enjoyable he was able to make his classes for his students. As it was not unusual for students in his class to have had limited and sometimes negative experiences with formal learning, this was no small feat. His lessons were often punctuated with laughter, he did not mind "playing the fool" if it helped engage his students in language acquisition.

Quoc had limited previous computer experience involving primarily word-processing packages. Because his classroom at the grade school was not considered secure (it was located in a trailer), he was not using computers in his math teaching. In my early discussions with Quoc about CALL, he was open to trying the innovation, but not enthusiastic. I did not sense resistance, however, and I was looking forward to working with someone as experienced as he was in teaching ESL to Vietnamese refugees.

No one was more relieved than I when the computers were finally set up in the Versailles Gardens site in mid-April 1994. The first teacher's workshop was held April 24,
1994. Students in the advanced class were introduced to the computers the following day.

Introduction of the Innovation

At the first teachers' workshop a considerable amount of information was covered. I continued with the teachers our earlier discussions of my hopes for CALL for the program—how it could be a valuable tool to enhance their instruction and a means to introduce their students to an increasingly important technology. I emphasized, however, that it was up to the teachers to determine the best use of CALL in their teaching, and that I was there to give advice and support. Quoc and Alice decided that evening that they would prefer to assign students their CALL lessons rather than opt for a more autonomous approach where students themselves would select which lessons to do. Neither teacher felt comfortable yet with their students exploring software they were not yet familiar with.

Next, how to schedule CALL use was decided. The program offered ESL classes Monday through Thursday from 6 p.m. to 8:15 p.m. I informed the teachers they could each have access to the lab two evenings a week, although I would require only one evening in the computer lab each week for each class. I took it as a positive sign that both teachers agreed to have their students use the lab two evenings a week.

I then presented options for scheduling. At the time Alice's class was averaging about 10 students an evening,
Quoc's about 16. The lab room was small and crowded and could comfortably accommodate only eight students at a time. Therefore neither class could fit in the lab all at one time. I explained that on their assigned computer nights an option would be to send half of one's class to the lab at the start of class, work with those students for an hour in the computer lab, dismiss them, and then work with the second half of the class in the lab during the second hour. I pointed out that a downside to this arrangement would be that overall instructional time in the program would be reduced. I suggested that as a second option that the teacher work with half his/her class in the classroom while the other half worked in the lab under my supervision. The teachers agreed with me that this would be a better use of the innovation and this scheduling option was put into effect first.

Teachers then received their own loose-leaf binders containing copies of the instructions for operating the software programs and descriptions of the contents of the various lessons. At this early stage of the implementation process I figured the teachers would want concrete, specific information—what the lessons were about and how to operate them. I also wanted to make learning about and planning CALL lessons as convenient as possible. With the information I had given them they could prepare for their CALL lessons at home.
Although our time was running short, I did not want the teachers to leave the first workshop without some hands-on experience with CALL. During the last hour of the workshop I introduced the teachers to English Express and gave them a brief overview of how to open and navigate the program. Quoc seemed overwhelmed by all the new information and at the end of the evening indicated he was not yet comfortable assigning his students lessons from the program. I assured him that I would be spending most of the first sessions with the students just showing them how to operate the computers, and that he would have more time to familiarize himself with the programs at our next teacher workshop, which I had already scheduled for the end of the following week.

Although I sensed Quoc's anxiety, I had been discouraged by all the delays in starting up the project, and was eager to get it going. Thus pre-implementation preparation and training were limited. I planned to make up for this by scheduling teacher workshops frequently during the early stages of the project.

Summary of Problems/Barriers, Solutions, and Administrator's Roles During the Adoption Phase

One of the original research questions for this study asked "What roles must the administrator assume during the process of implementing the innovation?". As the above narrative details, the need to assume several organizational roles emerged for me during the adoption
phase as I sought solutions for the problems and barriers facing the implementation of the innovation. These issues are summarized in the matrix contained in Table 4.1.

The first barrier to implementation of CALL was an obvious lack of resources for the proposed project. In the role as resource generator I wrote costs for computer hardware and software into two grants. Once funding became available, the identification of software appropriate for the needs of our student population became paramount. In the role of curriculum coordinator, I studied software reviews, spoke with other refugee service providers who were using CALL, visited software fairs, and tried out sample programs. I then allocated funding for the purchase of software that appeared promising.

Out of my concern for the security of the CDs I had decided before the project began to centralize the software library in the closet containing the server, which could only be accessed by the teachers. As the facility was located in a high crime neighborhood, again in the role of resource allocator I had a burglar alarm system installed before the computers were brought to the site. In the role of catalyst/initiator I made frequent site visits before the innovation was introduced to build support and enthusiasm for the project.

I believe my active role in the implementation process made for a smooth coordination of most of the above duties.
<table>
<thead>
<tr>
<th>Phase</th>
<th>Problems/Barriers</th>
<th>Solutions</th>
<th>Administrator Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 1993-April 26, 1995</td>
<td></td>
<td></td>
<td>Catalyst/Initiator</td>
</tr>
<tr>
<td>Early Implementation</td>
<td>Problems stemming from implementation design: 1. Teacher lack of ownership 2. Teacher lack of understanding - anxiety of Quoc, confusion of Alice</td>
<td>1. Provided more computer access to Alice 2. Provided on-going support and scheduled frequent workshops</td>
<td>1. Personnel manager 2. Teacher trainer</td>
</tr>
<tr>
<td>April 27, 1995-June 16, 1995</td>
<td>Contextual problems: 1. Teacher lacks understanding of 2L learning principles 2. Lack of opportunities to communicate with teachers 3. Attendance swells in June and July</td>
<td>1. Provided and discussed information on 2L learning principles in relation to CALL, requested more input and coaching from ESL coordinator 2. Developed dialog journals 3. Changed schedule so that 3 groups to the lab each evening</td>
<td>1. Teacher trainer and personnel manager 2. Facilitator of reflective practice and communication 3. Resource manager</td>
</tr>
<tr>
<td></td>
<td>Technological and climatical problems: 1. Units freeze up, printer won’t work, programs perform too slowly, sound levels too loud/soft 2. Noise level in lab too high</td>
<td>1. Taught students and staff to correct minor technical problems, obtained assistance from PC specialist for more serious problems 2. Ordered headsets for all users</td>
<td>1. Technical trainer and personnel manager 2. Resource allocator</td>
</tr>
<tr>
<td></td>
<td>Problems stemming from newness of the innovation PROGRAMATIC LEVEL: 1. New very advanced students start dropping in the program just to try out the computers 2. General feeling of “unsettledness”</td>
<td>1. Developed policy requiring a student to attend class 4 times before use of computers permitted. 2. Project team assumed “grin and bear it” attitude</td>
<td>1. Gatekeeper/Policy formulator 2. Team member</td>
</tr>
<tr>
<td></td>
<td>CLIENT LEVEL: 1. New beginner students are anxious, do not understand lab monitor’s instructions 2. Some students cannot get the hang of navigating a major software package 3. Some students appear not to be using CALL effectively</td>
<td>1. Requested bilingual counselor give instructions in Vietnamese to first group of beginners, later encouraged experienced students to teach newcomers 2. Developed step-by-step instructions in Vietnamese 3. Developed handout and had it translated into Vietnamese recommending learning strategies to use with CALL</td>
<td>1. Personnel manager, teacher 2. Teacher 3. Teacher</td>
</tr>
</tbody>
</table>
Early Implementation: April 26, 1995, to Mid-June, 1995

Teacher Concerns

To gain a deeper understanding of how the teachers were experiencing the changes that computer-assisted learning was bringing to the program, at different times during the course of the research project I asked Quoc and Alice to share with me their concerns about CALL. The feedback they provided me on this issue also enabled me in my role as the program administrator to better assist them in coping with and/or resolving the problems that the innovation had generated.

The innovation user concerns captured by the Stages of Concern About an Innovation (SoC) model developed by Hall, Wallace, and Dossett (1973) were evident in this study. The SoC model identifies seven distinct stages of user concerns during innovation implementation (see Table 4.2). The model predicts that initial concerns about an innovation are somewhat egocentric, involving questions about what the use of the innovation actually entails and how it will affect the user personally. After these "self" concerns are resolved, users become more concerned about "tasks" relating to the use of the innovation. Following the resolution of issues of task the user then becomes more concerned with the "impact" of the innovation on her students.

Whereas the SoC authors initially suggested that user concerns about an innovation occur in a developmental and
<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Awareness: Little concern about or involvement with the innovation indicated.</td>
</tr>
<tr>
<td>1</td>
<td>Informational: A general awareness of the innovation and interest in learning more detail about it is indicated. The person seems to be unworried about himself/herself in relation to the innovation. She/he is interested in substantive aspects of the innovation in a selfless manner such as general characteristics, effects, and requirements for use.</td>
</tr>
<tr>
<td>2</td>
<td>Personal: Individual is uncertain about the demands of the innovation, his/her inadequacy to meet those demands, and his/her role with the innovation. This includes analysis of his/her role in relation to the reward structure of the organization, decision making and consideration of potential conflicts with existing structures or personal commitment. Financial or status implications of the program for self and colleagues may also be reflected.</td>
</tr>
<tr>
<td>3</td>
<td>Management: Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, scheduling, and time demands are utmost.</td>
</tr>
<tr>
<td>4</td>
<td>Consequence: Attention focuses on impact of the innovation on students in his/her immediate sphere of influence. The focus is on relevance of the innovation for students, evaluations of student outcomes, including performance and competencies, and changes needed to increase student outcomes.</td>
</tr>
<tr>
<td>5</td>
<td>Collaboration: The focus is on coordination and cooperation with others regarding use of the innovation.</td>
</tr>
<tr>
<td>6</td>
<td>Refocusing: The focus is on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. Individual has definite ideas about alternatives to the proposed or existing form of the innovation.</td>
</tr>
</tbody>
</table>

sequential pattern, in a later study Hall and George (1978, cited in Huberman and Miles, 1984) observed various levels of on-going concerns within new users. In a comprehensive study of school innovations Huberman and Miles (1984) found evidence for a linear, orderly progression of user concerns "mixed." In this study the concerns the two project teachers expressed about the innovation evolved in differing ways.

In the week following the first teacher workshop on April 24 I requested that the teachers respond to the following question in their journals: "When you think about using CALL in our ESL program, what are you concerned about?" Mr. Quoc, who had been teaching ESL for 16 years, answered this question in a way that indicated an advanced stage of user concerns about an innovation according to the SoC model. At this early phase of the implementation process his concerns focused largely on the welfare of this students. Alice had been employed as an ESL teacher for only one month when the computers were introduced in the program. Her initial concerns were more personal- and involved her instructional role vis a vis the innovation.

Quoc initially listed seven aspects of the innovation that concerned him. At the top of his list was his concern for the comfort level of his non-literate students, who "never touched a computer before in their lives and are scared to break it". Another Stage Four concern he expressed was an overall concern for the relevance of the
innovation for his students: "How much the programs used will benefit my students?" Quoc also had several concerns regarding the overall management of the innovation (Stage Three of the SoC), including concern for the choice of appropriate software for beginner level students, the need for immediate technical assistance for technical problems, and continuation of funding to maintain a computer learning laboratory. He expressed only one Stage Two concern- which was his personal concern for the length of time it would take him to learn the programs.

While typing up the teachers' journal for data entry I realized that responding to their concerns in writing could serve to address their concerns and improve communication. During the early weeks of the project the teachers and I were so busy just trying to get the innovation off the ground that we rarely had time to talk with each other. Almost every night a new student entered the program, which contributed to the general feeling of unsettledness that the introduction of the innovation had created. We could not easily discuss implementation issues before class as both teachers had other jobs and arrived at the class site only a few minutes before classes were to begin. By 8:15 p.m. we were all eager to call it a day. By addressing the teachers' concerns directly in their journals a written dialog developed between the teachers and myself which helped me to respond better to the teachers' concerns and
which helped the teachers to gain a clearer understanding of what I hoped could be accomplished with CALL.

When I responded in Quoc's journal to the concerns he had raised I tried to assure him of the stability of the program and the appropriateness of CALL for his students. However, his students' early experiences with CALL seemed to dispel many of the reservations he had been feeling. He could see that his students were enjoying learning with computers and the feedback he was receiving from his lower level students assured him that I was making them feel comfortable in the computer lab. He was also enjoying working with a smaller group of students in the classroom while his other students were in the lab with me, and felt this arrangement was particularly beneficial to his lower level beginners.

By late May I had begun to notice that some of the beginning level students did not appear as engaged in their CALL lessons as students in the advanced class. Lack of student interest was not a concern for Quoc, however, as he felt that the vast majority of his students enjoyed and benefitted from their CALL sessions.

In the pre-implementation phase Alice had expressed a high level of enthusiasm for computer-assisted learning. In an interview conducted April 22 she rated the importance of her students learning basic computer skills as a 4.5 on a scale of 5. Therefore I had anticipated that Alice would be very receptive to implementing CALL in the ESL program. She
first responded to my question about CALL use in the program in her journal on May 2, approximately one week after CALL had been introduced to her students. Her reply indicated to me that she was experiencing major misgivings about the innovation, which surprised and troubled me.

Her major concern at this early phase of the implementation process was her role as the classroom teacher in relation to the innovation, a Stage Two concern on the SoC. After just one week of CALL use she was uncomfortable with what she considered a lack of continuity between the classroom and the computer lab. She felt by not being in the lab with her students she could not "connect" with the CALL lesson she herself had assigned or "see issues and questions" as they arose. In a journal entry two weeks later she noted that the transition to CALL was feeling "abrupt". She again expressed her discomfort with what she termed "lesson/lab continuity" and expressed the need to spend more time in the lab to "get a feel" of how CALL and her classroom instruction could work together.

Alice also began expressing major doubts regarding the validity of CALL as an instructional method, an SoC Level Four concern. In a journal entry dated May 2 she wrote that her students had developed a "romanticized image" of computers which she felt might be working to prevent effective learning: "This notion has taken over for many and may be keeping them from really applying the
information they are getting from the computers into lessons and perhaps even daily life."

Alice also had concerns about the effect of CALL on her students' overall psychological well-being. She was worried that her students, especially the younger students, were becoming competitive in the lab, which she considered a negative development. She feared that CALL would create a damaging inequality among the students: "I am concerned that some will excel very quickly while other stay at lower levels thus creating inequality-an inequality that is somehow more sensitive for the students than class activity." By the seventh week of the innovation she began to doubt if her students were learning anything at all during their CALL lessons. As proof she noted that they could not name the verbs they had just studied in the lab during a review lesson in the classroom.

What seemed incongruous about the reservations Alice was expressing about CALL was the high level of enthusiasm her students were demonstrating for using the innovation. Many of the advanced students appeared engrossed in their CALL lessons and seemed to be taking great pride in the tasks they were mastering on the computers. They were often reluctant to leave the lab and several times her students skipped their breaks so they could come to the computer lab early.

During the second week of the implementation process I shared with the teachers preliminary results of a survey of
student attitudes towards learning with computers I had conducted May 1. These results served to confirm my early observations about student interest in CALL. On average Quoc's students indicated a desire to spend 4.42 hours out of 9 instructional hours a week in the computer lab. Alice's students desired to spend even more time in the computer lab— an average of 5 hours a week. I soon began to sense that the advanced students' ardent interest in working with the computers was a source of some of the problems Alice was experiencing.

Upon further reflection and in later discussions with Alice, I came to see that several factors contributed to her discomfort with CALL during the early weeks of the innovation. First, the pre-implementation training Alice had received had been weak— she was provided only one workshop before the innovation began. Because Alice had not had the time to learn the contents of the programs, it was hard for her to understand how the CALL lessons she was assigning her students could actually benefit her students' learning English or how she could integrate that learning into her classroom teaching.

A second factor that impeded smooth implementation of CALL for Alice was her lack of teaching experience. Alice was still very new to the complex practice of teaching a second language. Although she brought to her teaching considerable energy and enthusiasm, she was only in the early stages of constructing her understanding of how
students learn a second language and her teaching skills were still that of a novice. I came to see how it could be harder for her than an experienced teacher to figure out how CALL could fit into her instructional routine as she was still in the process of building her teaching repertoire.

A third major factor impeding Alice's feeling comfortable with CALL was that the approach I had taken to implementation had resulted in her feeling a lack of ownership in using the innovation. When I shared with her the results of the first survey I sensed that her feelings were hurt by her students wanting to spend so much time with the computers. I also perceived that at a certain level she might have felt "left out" that her students were excited about a way of learning that she still knew very little about and was not heavily involved in providing. It was this problem area I decided to address first.

During the first eight weeks of the implementation process I had served as the computer lab monitor. In this role I was the only person who worked with the students in the lab- teaching them how to use the computers and responding to their questions about the lessons. In my vision of how CALL could best be implemented, I thought the teachers should be freed from the somewhat tedious chore of teaching students how to operate the computers and instead continue to focus their efforts on classroom teaching. As both classes were so large, it also appeared more efficient
to me to have the teachers work with one group of learners in the classroom while the other half worked with me in the lab learning how to operate the computers.

Whereas Quoc was very comfortable with sending half his class down the hallway to work with me in the lab, Alice was never very comfortable with this arrangement, although she had initially agreed it was the better scheduling option. It took me several weeks to finally realize that my plan for CALL implementation was not compatible to Alice's needs or teaching style. At a teacher's workshop on June 16 the lesson/lab continuity issue for Alice began to meet with some resolution when Alice and I agreed that she start spending every Tuesday in the lab with her students.

Problems, Solutions, and Administrator's Roles

The matrix contained in Table 4.1 outlines the kinds of problems and barriers encountered during early implementation of CALL, the solutions or coping strategies that were developed to deal with them, and the roles the administrator assumed during these first eight weeks of the implementation process. Upon analysis and reflection, certain problems and barriers to the implementation process appeared to stem from the following sources: implementation design, newness of the innovation, and program context. At the client level students were encountering problems operating machines as new and unfamiliar as computers that required interventions which were also provided by the
administrator—serving largely in the role of teacher. Additionally, certain technological and climatical issues had to be addressed to get the computers to work properly and make the lab a comfortable place to work.

Problems stemming from implementation design.

As discussed above, the teachers' lack of understanding of the CALL programs, as well as the lack of ownership Alice felt for the innovation, stemmed in part from the limited front-end training they had received. In the roles of personnel manager and teacher trainer I responded to these problems by allowing Alice more time in the lab with her students and by scheduling and leading four teacher workshops in the first eight weeks of the project.

Contextual problems.

In my discussions with Alice about the problems she was experiencing with CALL I began to realize she still had much to learn about second language learning. A major focus of the software being used in the program at the time was teaching new vocabulary, but Alice seemed to lack an understanding of how new vocabulary is learned. For example, she could not understand why her students could not demonstrate mastery of the new vocabulary words they had been exposed to in the computer lab for only sixty minutes. She was also spending considerable time in class trying to explain concepts or ideas presented in CALL lessons without eliciting production from her students.
I discussed these issues with Alice, and I also sought advice from the ESL coordinator, an ESL professional with a Master's Degree in Applied Linguistics and over ten years experience teaching ESL. Jennifer was a gifted teacher. She was hired as the ESL coordinator only one year prior, and this was her first job supervising teachers. In the short time she had been with the program she had shown a remarkable gift in analyzing and coaching teacher performance, and had already begun discussions with Alice on these and other pedagogical issues after conducting two classroom observations of Alice's teaching. In the role of personnel manager I requested that she continue to provide Alice with support and advice, and we both encouraged Alice to read more of the second language learning literature. I also began providing the teachers with research articles on CALL and second language learning strategies at the teacher workshops. Nevertheless, the focus of the workshops and in my discussions with the teachers in this early phase of the project continued to be technical mastery of the programs.

Communication between the teachers and myself was improved somewhat when in the role of facilitator of communication I began to respond in the teachers' journals to the concerns they were expressing about the innovation. The dialog journals also helped us to reflect more on the teaching and learning that CALL was facilitating.

When attendance swelled in June and July, in the role of resource manager I devised a plan in which students were
divided into three groups on their computer nights. This proved rather awkward for the conducting classroom lessons and fortunately not soon afterwards attendance dropped to a manageable level when a large group of younger students resumed their studies at a community college at the start of the fall semester.

**Technological and climatical problems.**

The computers each came equipped with a set of speakers and a headset. At the start of the project I was uncertain which means of delivering aural output would be better for the students. Although the headsets had obvious advantages in terms of privacy of delivery, I was concerned that the lab monitor would not be able to assist students adequately if she could not hear what the students were listening to. The cacophony of music, beeps, and voices that resulted when eight students worked in the lab with four sets of speakers soon convinced me of the need to order headsets for each user.

The lab was also very crowded and warm. This problem was alleviated somewhat when in the role of resource manager I had the bookshelves and tape library removed and placed in the hallway.

**Problems stemming from the newness of the innovation at the programmatic level.**

During the first weeks of the innovation as news of the computers spread through the community a few individuals, some very advanced in their English
proficiency, began to enroll in the program, but then stayed for only a few days. It seems all they wanted to do was try out the computers. However, their "dropping-in" was proving rather disruptive to the program. Alice was having a hard time including these students in her classroom lessons, and the lab was already becoming too crowded with lower level students. In response to what I feared might be a growing trend, in the role of program gatekeeper and policy formulator I initiated a policy which required that students attend class at least four times before they be allowed to use the lab. This immediately discouraged a few very advanced students from entering the program. Within a few weeks for one reason or another "drop-ins" by English proficient students were no longer an issue, and the policy was abandoned.

Change always results in some disruption to routine, expectations, or interpersonal relationships. The disruption that was inevitable with the installation of a new technology was compounded in this case study by a sudden increase in student enrollment to the program in the early weeks of the project. Attendance in Quoc's class jumped from an average of 12.53 students a day in May to 17.24 in June. Average daily attendance in Alice's class was 9.87 in April, 11.6 in May, and grew to 14.94 in June. During this early phase of the implementation process the teachers and I struggled to achieve some kind of order in a climate permeated with a feeling of "unsettledness".
Although on one hand I was pleased to see so many students enrolling in the program, on the other hand I was worried that such a stressful climate would work against the innovation ever "fitting in". I tried to encourage the teachers to see the positive aspects of increased interest in the program, but they were actually coping better than I. I expressed my appreciation for their flexibility, and I worked at developing a "go with the flow" attitude about all the change that was occurring.

Problems stemming from the newness of the innovation at the client level.

Being hands-on in the computer lab allowed me to see first hand the problems the students were encountering with the innovation. In the role of teacher I developed step-by-step written instructions to assist students in opening and navigating a major software program (see Appendix J).

I had also observed that some students were not using CALL as effectively as others. I responded to this development by composing a list of tips for studying English on the computers which I distributed to the students, and I asked the teachers to go over the list with their students in the classroom (see Appendix K). The list included advice on proceeding at one's own pace, monitoring self-learning by reviewing the lesson before moving on to the next one, listening to and correcting the pronunciation of one's partner and working as a team, and asking for help
when meaning was not clear. Both the list and the instructions were printed in Vietnamese and English.

Initially it was very difficult to explain to the beginners how to operate the computers. I sensed that the anxiety they felt about working with computers was being compounded by the severe language barrier we were encountering. Therefore in the role of personnel manager I requested that the bilingual counselor assist me in giving instructions to the beginners in the lab during the first couple of weeks of the implementation process. A few weeks later in the project this problem of explaining instructions to new beginning level students was solved by having other beginners already experienced in CALL use introduce the computers to the new students.

Later Implementation: Mid-June, 1995, to March, 1996

Teacher Concerns

The decision reached on June 16th to have Alice work with her students in the lab one night a week turned out to be a pivotal one for the project. Following that point, Alice became much more comfortable with the innovation and her concerns for CALL use in the program greatly decreased. The implementation process proceeded much more smoothly from then on.

In an interview conducted August 31 Alice said she was still "a little" concerned about continuity between the computer lab and the classroom and that it was something that she would continue to work on. However, being with her
students in the lab had "definitely helped" because it had allowed her to become much more familiar with the contents of the programs and how her students were experiencing and processing their CALL lessons. She commented, "the information and the knowledge with the time and the experience, ... [now] my mind is at ease after the panic—what am I doing here with these computers?"

Having Alice more directly involved with student learning in the CALL lab also served unexpectedly to improve her confidence as a teacher. She explained that being in the lab "has helped... because they now know that I can use everything and they can rely on me to solve the problems, it is kind of the continuity of the teacher [between the classroom and the computer lab]."

After her personal concerns about her role with the innovation were met, Alice's concerns about the innovation quickly evolved into higher stages of concern as described by the SoC model. In a journal entry in October she expressed a Stage Five concern regarding teacher collaboration. She suggested that training could be improved if the workshops were used as a "forum" for teachers to collaborate on the lesson plans and routing activities they had developed to teach with CALL, and that "input circulating from teacher to teacher would improve training."

When asked in an interview in December what concerned her about CALL use in our program Alice responded, "running
out of software lessons, them [her students] becoming bored with the software that we have. Not being able to provide something new." She felt that CALL use was becoming more challenging, and she was debating if she would start using the PLATO software program which provided instruction on grammatical concepts. In response to these challenges Alice eventually began to consider new ways to utilize the innovation- reflecting a Stage Six concern on the SoC- which ultimately led to more individualized use of CALL by her students.

As described in Chapter 3 of this thesis, the teaching tasks facing Quoc were in many ways more complex than the challenges Alice encountered with her more advanced students. Although all of Quoc's students possessed only minimal English communication skills, the range of their proficiencies was still great. Whereas Quoc would often find it necessary to prepare different classroom lessons for his Level One and Two students, Alice almost always taught the same lessons to all her students. Students also tended to enter the beginners' class at a greater rate than the advanced class (there were 42 intakes in Quoc's class during the course of the study versus 27 in Alice's), which caused a greater disruption to the continuity of Quoc's classes. These complexities became factors in the way the innovation was utilized in the beginners' class, and shaped the concerns Quoc raised about its use.
After Quoc's initial concerns about the comfort level and appropriateness of CALL for his students had been satisfied, Quoc began to express Level Three SoC concerns about the best use of the innovation given the wide variety of English proficiencies amongst his students and the constant influx of new beginning level students to the program. In a journal entry in late May Quoc asked for advice on the best way to introduce new students to the computers, "Should we pair them [new students] with the old students so they can get help from them, or should we work individually with them to upgrade them to the level of other students?" He was also concerned about meeting the various needs of his widely divergent class, "Should we limit our students to the same category and level or should we let them work at their own speed without any restriction?" This was particularly an issue for his Level Two students.

We discussed these issues in mid-June and worked together to find solutions. We were finding that having me assist new beginning level students on the mouse tutorial usually resulted in a new student having enough skill to operate a program, and did not prevent any of the other ongoing students from focusing on the day's assignment. At the next class session it then seemed to work well to assign the new student with a more experienced computer user.
Quoc came to feel that allowing students to pursue whatever lessons they wished in the lab would make it difficult for him to review and synthesize CALL lessons in the classroom. We eventually decided that it would be best to assign all his students in the same level the same lesson. For those that finished ahead of the others a supplemental lesson on roughly the same topic would be added. Soon after the project began we found that the low level beginners could only use a limited amount of the available software, and they almost always were assigned a different lesson than the Level Two learners.

By September a new concern regarding the use of the innovation had emerged for Quoc. At this stage of the implementation process some of his students had been using CALL for a little over four months. Still newcomers continued to enter the program, some with little exposure to English and of course no computer skills. In an interview conducted September 7 he voiced a concern regarding what CALL lessons to assign these newcomers in the lab. He wondered if he should assign them CALL lessons that had already been covered by the other students or give all the students in a lab session the same assignment. He was also concerned about re-assigning CALL lessons that had previously been utilized by some of his on-going students.

In a discussion that followed we talked about the complex make-up of his class—how new students could be more or could be less English proficient than on-going
students in the program, but how their lack of computer
skills would always result in their need for special
assistance during their first experience with the
computers. We agreed that assigning newcomers CALL lessons
that the other students had studied previously would put
them on a "different page" than what the teacher was
covering in class, and that basically CALL lessons needed
to correspond with what the teacher was presenting in class
to achieve the kind of reinforcement and review of
classroom learning that we had come to envision for CALL.
When it came to assigning on-going students the same CALL
lesson again, we agreed that to a point this would be a
good review, but that eventually it would be necessary for
the program to buy new software to keep CALL lessons fresh
and interesting.

In an interview conducted in December Quoc noted again
how the computers had actually contributed to the
complexity of his class. Students differed in English
proficiency, length of time in the program, and with the
addition of CALL- experience with the CALL programs. Level
of English proficiency did not correspond in any meaningful
pattern with level of CALL experience. Although he felt he
could present previously covered material in class in a new
way, he was still concerned about assigning on-going
students a CALL lesson they had done earlier. By that point
I had not been able to locate any additional CALL software
that was appropriate for the English level of his students.
This problem eventually found temporary resolution when his more advanced students agreed to join Alice's class and other long term students left the program for work-related issues.

In November the CALL lab for the Marrero program site on the West Bank was finally installed. To assist in getting that program off the ground I asked the lab monitor (who had been hired in July to replace me in the lab) to work with the beginner level students at the Marrero site twice a week. This precipitated new concerns for Quoc regarding computer scheduling. He now had to assist both lab sessions in booting up, and during classroom lessons he was sometimes called to the lab to assist with technical problems. This required quite a bit of running back and forth for Quoc. He did not come to me to complain about the situation, but in our December interview admitted that dealing with this new variation in the organization of the learning environment was a "struggle".

By early January I felt the Marrero beginners' class had been adequately trained in CALL use. I then assigned the lab monitor one evening a week in the Versailles Gardens Program and one evening in the Marrero program. This new schedule still required the beginner level teachers to assist in the lab on one of their two computer lab nights. In mid-February I hired a new counselor for the West Bank. As part of his job responsibilities I decided to also assign him the duties of lab monitor for the Marrero
beginners’ class two evenings a week. This then freed Quoc from having to assist in the computer lab as well as to teach class on Wednesday and Thursday evenings, a change that he welcomed.

Barriers/Problems. Solutions and Administrator's Roles During Later Implementation

The matrix contained in Table 4.3 outlines the kinds of problems and barriers encountered during the third through eleventh months of the implementation process, the solutions or coping strategies that were developed to deal with them, and the roles the administrator assumed during later implementation. Several of the problems and barriers to the implementation process that were encountered during this phase of the implementation process can be grouped in categories that emerged for adoption and early implementation, i.e.: resource problems; problems stemming from implementation design; and problems conditioned by local context. In addition to technological and climatical type problems seen earlier, the configuration of the lab also had to be addressed in later implementation.

Resource problems.

By mid-June the dual role of administrator and researcher was beginning to take its toll on my energy level and I was no longer interested in working in the lab three evenings a week. However it was evident that students, especially those in Quoc's class, still needed on-going assistance in the lab. In response to these needs
Table 4.3

Problems/Barriers Encountered During Later Implementation, Solutions, and Administrator Roles: June 17, 1995- March 3, 1996

<table>
<thead>
<tr>
<th>Problems/Barriers</th>
<th>Solutions</th>
<th>Administrator Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource Problems</td>
<td></td>
<td>1. Resource allocator/Teacher Trainer</td>
</tr>
<tr>
<td>1. Administrator no longer has time to assist in lab, but students in both classes still need assistance in lab.</td>
<td>1. Lab monitor is hired and trained.</td>
<td>2. Curriculum coordinator, resource allocator</td>
</tr>
<tr>
<td>2. Need for more educationally appropriate software.</td>
<td>2. New program added to network August 10.</td>
<td>3. Resource allocator</td>
</tr>
<tr>
<td>3. Workload of beginners' class teacher increases when lab monitor is assigned temporarily to West Bank CALL site.</td>
<td>3. Counselor hired for West Bank is assigned CALL lab duties.</td>
<td></td>
</tr>
<tr>
<td>Problems stemming from implementation design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Teachers not familiar with new software, need to discuss implementation issues.</td>
<td>1. Scheduled frequent workshops</td>
<td></td>
</tr>
<tr>
<td>2. Administrator observes need for teachers to better introduce and review CALL lessons.</td>
<td>2. Administrator presents ideas on “refining” CALL use at 8th teachers workshop in November (not very effective).</td>
<td>1. Teacher trainer/facilitator of communication</td>
</tr>
<tr>
<td>Contextual Problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Some students in the beginners' class appear to lose enthusiasm for CALL.</td>
<td>1. Administrator checks with teacher, interviews students to confirm that students are still interested in 2 hours of CALL a week.</td>
<td>1. Program evaluator</td>
</tr>
<tr>
<td>2. Teachers lack information on problems/issues that arise in the lab.</td>
<td>2. Lab Monitor Report Form developed</td>
<td>2. Facilitator of communication</td>
</tr>
<tr>
<td>3. Students in beginners class work at vastly different paces in computer lab.</td>
<td>3. Discuss problem with teacher and suggest that extra assignments be given faster students.</td>
<td>3. Consultant</td>
</tr>
<tr>
<td>4. Some students in beginners class no longer want to work with CALL.</td>
<td>4. Administrator confirms with teachers that students be made to feel comfortable staying in the classroom.</td>
<td>4. Policy formulator/Supervisor</td>
</tr>
<tr>
<td>5. As new students continue to enter the program the teacher must re-assign previously assigned CALL lessons to on-going students.</td>
<td>5. No solution forthcoming. Problem eventually works itself out when “old” students graduate to next class or leave the program.</td>
<td>5. None</td>
</tr>
<tr>
<td>6. Teacher expresses need for more teacher collaboration</td>
<td>6. When second CALL site opens on West Bank administrator requested that ESL coordinator include discussions of CALL use in quarterly ESL teacher workshops.</td>
<td>6. Personnel manager/facilitator of communication</td>
</tr>
<tr>
<td>7. Teacher appears to be “slacking off” in teaching duties by allowing students to remain in lab the entire evening.</td>
<td>7. Administrator takes “wait and see” approach. Soon after teacher resumes normal schedule for computer evenings.</td>
<td>7. Supervisor</td>
</tr>
</tbody>
</table>

1. Teacher trainer/facilitator of communication
2. Teacher trainer
3. Program evaluator
4. Facilitator of communication
5. Consultant
6. Policy formulator/Supervisor
7. None
8. Personnel manager/facilitator of communication
9. Supervisor
I decided that a new staff position, that of CALL lab monitor, was necessary. In the roles of resource allocator and teacher trainer I hired and trained an ESL professional with over ten years of experience teaching a second language to work as the lab monitor for the Versailles Gardens ESL site. Sara Southwood began work on July 11.

By the third month of the project it appeared that most of the software I had chosen to use in the project was working out quite well. The teachers found the programs pedagogically sound and appropriate for our student population, the students were enjoying working with the programs, and except for one program, the software we had purchased proved compatible with our system requirements. I had intentionally not purchased a large amount of software to start the project as I felt it more prudent to first gain an understanding of what worked with our students and what did not. By July the need to expand our software library so to provide a larger and more varied choice of CALL lessons began to emerge.

In the role of curriculum coordinator I was constantly on the lookout for good software, and had heard about Rosetta Stone from an ESL teacher in Baton Rouge. This program had several features we were looking for, such as a task-based approach to listening comprehension (which was largely lacking in English Express) and it presented many opportunities for learning grammatical structures in context. In the role of resource allocator I purchased
Rosetta Stone which was installed on the network in early August. It was an immediate "hit" with both students and staff.

As described above, the need to assign Sara lab monitor duties at the new CALL site on the West Bank in November created a difficult situation for Quoc on his computer nights. This problem was finally resolved in February when in the role of resource allocator I assigned the new West Bank counselor the duties of lab monitor for the Marrero CALL lab.

Problems stemming from implementation design.

To make up for the lack of front-end training, I continued to schedule workshops during later implementation. These workshops also served to increase communication about the use of CALL in the program and allowed the teachers time to process information and explore CALL use with their students from one workshop to the next.

At the fifth teachers' workshop in mid-July (which was Sara's first workshop) I taught teachers how to navigate the PLATO Reading and Writing software package and develop individualized learning paths for their students by creating PLATO routing activities. At the sixth teachers' workshop on August 11th I had hoped to introduce teachers to Triple Play Plus! which had previously been available only on the stand-alone PC. Unfortunately an earlier version of this program known as Triple Play had mistakenly
been installed by the PC specialist the day before. We therefore had to work on this version at the workshop, which nevertheless contained many of the lessons also available in Triple Play Plus!. The seventh teachers' workshop two weeks later focused on operating and learning the contents of Rosetta Stone as well as Triple Play Plus!, which had finally been installed the previous Friday.

The final teachers workshop of the project period was held November 16. By that time my concerns for the use of CALL in the program had begun to shift. In the early part of the project I had been focusing most of my efforts on helping the teachers learn the programs and assisting both teachers and students achieve technical mastery of the software. I began to realize- somewhat belatedly- by September that the teachers, especially Alice, needed to better integrate the language learning that was being provided through the CALL lessons with classroom learning.

I began discussing these ideas with the ESL coordinator and the teachers on an individual basis. At the last teachers workshop of the project period I focused our discussion on how to better introduce and review CALL lessons in the classroom. However, by then certain habits seemed to have become ingrained and I observed little change in this area. Whereas Quoc was open to incorporating suggestions I made into his classroom lessons, by mid-January he said he still had not found the time to do so, in part because he had not had the assistance of the lab.
monitor. Alice, on the other hand, came to feel that the assignments she was including in her lab sessions provided adequate review. (Integrating CALL into the curriculum will be discussed more in depth in the next section of the research findings on Teaching with CALL.)

**Contextual problems.**

From the beginning of the project students in Quoc's class tended to be less enthusiastic about CALL than students in the advanced class. In early August three beginner level students who complained that the computers gave them headaches had decided that they no longer desired to work in the computer lab and asked their teacher to allow them to remain in the classroom on their computer nights. I was concerned about these developments, and in the role of program evaluator I made repeated attempts throughout the project period to ascertain if CALL was indeed an appropriate method of instructional delivery for the students served by our ESL program.

Several times I questioned Quoc and Sara if they felt the beginners were still interested in working with the computers and if two hours a week was an appropriate amount of time for these students to be assigned to the lab. I also had my bilingual research assistant interview students to obtain their opinions on CALL and to confirm if they were still interested in going to the lab twice a week. On each of the three surveys I administered I included a question about desired amount of time in the computer lab.
each week as well as questions that explored how students thought computers were helping them learn English. All the information I received indicated to me that with the exception of the those few Level One students who chose to remain in the classroom, most students in the program desired to work in the lab at least two hours a week throughout the project period and believed that computers were helping them to learn English.

In the role of policy formulator at the start of the project I had informed the teachers that if any students desired not to work in the computer lab that they be made to feel comfortable remaining in the classroom. I confirmed with Quoc that this policy had been carried out when a few of his low level students chose to remain in the classroom on their computer nights. Being the master teacher that he was, he appeared to have no trouble accommodating this change in scheduling into his lesson plans on his computer nights.

While serving as the lab monitor during the first eight weeks of the project I found it very difficult to communicate with the teachers about the specific problems students were encountering in the lab or how far students had progressed in their CALL lessons. As soon as one group left the lab I had to assist the new group with the inevitable problems that occurred while booting up. By the time class ended at 8:15 p.m. both the teachers and I were eager to call it a day. To increase communication I
developed a "Computer Lab Session Student Report" form and had these printed just before Sara entered the picture in July (see Appendix L). On this form the lab monitor could indicate where students sat in the lab and who their partners were, how far students progressed in a lesson, the questions that were asked, problems that arose during the course of a computer lesson (such as difficulties students encountered pronouncing certain sounds or confusion over a grammatical structure), and any problems or issues that might have occurred regarding how students were paired.

Both teachers indicated that the information they received on these forms helped them to better understand what was occurring in the lab and to incorporate questions that were raised during CALL lessons into classroom review sessions.

As described above, Quoc had become concerned over how his students worked at vastly different paces in the computer lab, and in late June was considering allowing students to pick and choose their own lessons. In the role of consultant I advised Quoc to continue to assign students in the same level the same lesson so to facilitate the integration of CALL into his teaching curriculum. For those quicker students who finished ahead of the others, we agreed that they should be assigned a supplemental lesson as close in content to the first CALL lesson as possible.

As described above, I was not able during the project period to provide a solution to the problem Quoc saw in
having on-going students repeat CALL lessons they had been
assigned several months earlier.

In October Alice expressed the need for more
collaboration between teachers regarding CALL use. At the
time, however, she and Quoc were the only teachers in the
program who had access to a CALL lab, and it had become
apparent that their relationship lacked the dynamics where
they could bounce ideas off each other. This was beside the
facts that the learning needs of Quoc's students were quite
different from her students' and that the advanced students
were able to utilize a wider range of software lessons than
the beginners. Nevertheless, I was eager to accommodate
Alice's suggestion as I believed collaboration between
teachers could only help to improve how CALL could be used
in the program. When the second CALL lab was finally
installed at the West Bank site in November, to facilitate
communication between teachers, in the role of personnel
manager I asked that the ESL coordinator begin to include
discussions on ideas and suggestions for teaching with CALL
in the in-service teacher meetings, which were held every
quarter at the central agency.

When Quoc returned to his full-time teaching duties as
an elementary school teacher at the end of the summer, a
new problem emerged regarding CALL use which presented a
challenge to me in my role as a staff supervisor. When
checking with the lab monitor in mid-September regarding
beginner level students' interest in using CALL, I learned
that on a few recent occasions Quoc had assigned his Level Two students the computer lab for the entire evening. I became worried that Quoc might be "slacking off" in his teaching responsibilities by using computers as an excuse not to teach, and by doing so might also be turning off his students to CALL. After some consideration I decided to wait and see if indeed this was a trend I needed to be concerned about or just a temporary aberration. I recalled the five years I had spent as a classroom teacher, and the utter exhaustion I had felt at the beginning of the new school year until I regained my stamina. My decision to respect Quoc's needs and the choices he made regarding computer use turned out to be the correct one. There were no further incidents of Quoc assigning the lab for an entire evening after mid-September.

Technological, climatical, and configuration problems.

When the project began I was not certain which of the software programs we had purchased could best meet the learning needs of our students. The network version of one program was quite expensive. Also it was rather advanced, having been designed primarily for ESL students at the university level. Therefore I thought it best that we experiment using the single-user version of this program and other software programs I was not sure about on the stand-alone PCs first before committing funds to purchase the network versions. However, having the lab configured with three PCs on network and two as "stand-alones" soon
began to prove awkward. Therefore on July 7th in the role of resource manager I had the stand-alone on one of the two tables in the lab added to the network and had the second stand-alone permanently moved to the counselor's office next to the lab (previously it was rolled out of the lab at the start of class and back into the lab at the end of the evening).

The new network configuration proved too much of a stress on the apartment's electrical system and we began to experience "brown-outs". Therefore in the role of resource allocator I hired an electrician to rewire the site, which was accomplished on July 12.

Minor technological "glitches" were an everyday occurrence with the computers. Sometimes the problems were minor- like when a unit would freeze up, or the sound level was off, or when a mouse needed cleaning- and could be resolved by the teachers or myself. Sometimes, however, the problems were more serious and we were completely at the mercy of the agency's PC specialist to come out and make things right. Emmeth was the busiest man alive, and getting him to Versailles Gardens often required much pleading and prodding on my part. On August 10th he installed a new software program, but at the same time inadvertently deleted a major software package and installed the wrong version of another program. In the role of personnel manager I urged Emmeth to return to the site to correct
these errors, which fortunately he was able to do within only one week's time.

The air-conditioning system in the apartment we were using as our class site was very weak. This caused the students and teachers discomfort during the warm nights of the summer season which seemed to last forever in New Orleans. As uncomfortable as classes were, the warmth became even more unpleasant when eight to ten students had to sit jammed together in the computer lab. After frequent urging from the counselors and myself acting in the role of program advocators, the landlord finally replaced the air-conditioning unit in late October.

The computers proved to be quite popular with the at-risk Vietnamese teens being served in the new Vietnamese Youth Services Program, which was also headquartered at the Versailles Gardens site. In the role of resource allocator I decided to purchase two more computers with the end of the year surplus of funds in the youth program. These two units and the stand alone were placed along the east wall in the counselor's office and added to the network on October 17, thereby making it possible to have up to fourteen students on the same computer program at the same time.

This final configuration proved satisfactory for both the youth program and the ESL program. It remained in place until our landlord sold the building in September of 1996.
The program then moved to a new location in Versailles Gardens, just one block from our old site.

**Effective Implementation Strategies**

One of the original research questions of this research project asked, "What strategies regarding teacher training, selection and introduction of new software, and scheduling computer use prove effective?" I believe the successes and shortcomings of this project provide administrators, teachers, and researchers with several important lessons regarding effective strategies for implementing CALL in an open-entry, multi-level ESL program for adult refugees. These are summarized in Chapter V in the form of recommendations for effective CALL implementation.

**Teaching with CALL**

**How is the Learning Environment Changed by CALL?**

One of the research questions I posed at the initiation of the project was "How is the learning environment (e.g. how teachers manage their classrooms, how teachers organize and conduct their lessons, the nature of group work) changed by CALL?". The introduction of the innovation resulted in several changes in the learning environment for the ESL program in Versailles Gardens. The addition of the computer lab to the physical environment of learning and the limitations of the computer lab in terms of the number of students it could accommodate at one time required both teachers to initiate major changes regarding
where and when students were to be taught the two evenings a week the computer lab was assigned for use by their respective classes. These logistical changes in turn led to changes in the organization and content of the lessons the teachers prepared for classroom instruction.

The need for students to work in pairs in the computer lab created opportunities for peer tutoring and group collaboration in the lab. This type of student interaction in the computer lab was encouraged by Alice, and appeared to play a role in the development of an orientation towards collaborative learning in her classroom.

Organization of the Learning Environment/Logistics

Because of the limited number of computers available for use at the beginning of the project (four units in the center of the computer lab and one unit against the east wall of the lab) and the location of the computers in a room other than the classroom, both teachers had to cope with a major restructuring of their classes when CALL was introduced to the program in April 1995. At the beginning of the project this required that on one's computer night the teacher send half his/her class to the lab at the start of the first hour and a half of instruction and work with the remaining students in the classroom until the start of the second computer session, at which time the students in the computer lab changed places with the students in the classroom. While students were in the computer lab they often worked in pairs as there were not enough computers
for students to work by themselves. There they were supervised by the lab monitor, a role that I assumed for the first ten weeks of the project.

On Quoc's computer nights he assigned his more advanced Level Two students the computer lab from about 6:15 p.m. to approximately 7:30 p.m., always choosing to work with his less proficient Level One students in the classroom during the first instructional session. From the project's inception Quoc seemed to relish the new logistics that use of the computer lab necessitated. He liked teaching to smaller, less heterogeneous groups and he especially enjoyed being able to give extra attention and more individualized instruction to the low English proficient students during the first class session on his computer nights.

While working with the Level One students in the classroom he would often deliver his lesson seated in front of them in a student desk. In this setting he would speak in a soft and gentle voice, thus creating a comfortable, more intimate atmosphere for learning. On one of his computer nights I observed him with his Level One students coloring pictures with crayons during a lesson on colors. Quoc realized that many of his Level One learners had not been in a classroom setting for many years, and felt that in his normally multi-level classroom these less schooled learners were sometimes intimidated or overshadowed by the more confident Level Two learners. He found that use of the
computer lab on Wednesday and Thursday evenings created an ideal opportunity for him to focus more closely on the wide range of needs of his diverse class by allowing for smaller groupings of students during classroom instruction.

In contrast, Alice was very uncomfortable with how the learning environment was initially restructured when CALL was first introduced to the program. She felt by not being in the computer lab with her students she could not understand how they were experiencing CALL or relate to what they were learning. Although she saw certain advantages to teaching to a smaller group of students on Monday and Tuesday nights, the positive aspects of a more intimate classroom learning environment were still outweighed by her sense of a "discontinuity" between the learning that was going on in the computer lab and the classroom. Alice also felt that splitting the class up on Mondays and Tuesdays resulted in what she termed "jagged edges" in her lesson plans for the week. She felt she could not adequately begin a new lesson or concept on Mondays or Tuesdays because she could not teach all her students at one time.

How student time with computers was scheduled and organized underwent several transformations during the implementation process as the teachers and I strove to understand the best use of the innovation for our program and to accommodate its use with the many vagaries of delivering instruction in an open-entry/open-exit program.
Tables 4.4 and 4.5 delineate characteristics of changes in the organization of the learning environment during the project period.

In late May and early June attendance in the program began to swell. Scheduling for the computer lab became very difficult when attendance for a class was greater than 16 students as only 4 PCs had the software program most in demand during the early days of the project—English Express. (The fifth unit—a stand-alone PC—was set up to provide programs that were not on the network. However, we were finding little use for it as the teachers had decided that they preferred to have all their students study the same CALL lessons during their lab periods.)

Quoc had 18 students on May 31, 19 students on June 1, and 22 students on June 5. Attendance in Alice's class totaled 18 students on May 31, 17 students on June 5, and 16 students on June 6. On June 6 I recommended to the teachers that they begin to divide students into three groups on their computer nights. I suggested that the first group work in the lab from 6 to 6:45, the second group from 6:45 to 7:30, and the last group from 7:30 to 8:30. They agreed to try this, and in meetings I held with each class students signed up for one of the three time slots. The new schedule relieved somewhat the overcrowding in the lab, however, the schedule rarely worked out as planned as new students kept entering the program and old students would come late or not show up at all.
<table>
<thead>
<tr>
<th>Project Period</th>
<th>Instructional Session</th>
<th>Computer Lab Students</th>
<th>Computer Lab Staff</th>
<th>Classroom Students</th>
<th>Classroom Staff</th>
<th>Reasons for change in logistics/supervision</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 24-June 6</td>
<td>1st Session:</td>
<td>Level II Researcher/Admin.</td>
<td>Level II</td>
<td>Level I Teacher</td>
<td></td>
<td>Increase in enrollment results in too many students to fit in the computer lab in only two sessions</td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Level I Researcher/Admin.</td>
<td>Level II</td>
<td>Level II Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June 7-June 16</td>
<td>1st Session:</td>
<td>Group A Researcher/Admin.</td>
<td>Group A</td>
<td>Groups B and C Teacher</td>
<td></td>
<td>Enrollment decreased so no longer a need for three lab sessions.</td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Group B Researcher/Admin.</td>
<td>Group B</td>
<td>Groups A and C Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3rd Session:</td>
<td>Group C Researcher/Admin.</td>
<td>Group C</td>
<td>Groups A and B Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June 17-July 10</td>
<td>1st Session:</td>
<td>Level II Researcher/Admin.</td>
<td>Level II</td>
<td>Level I Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Level II Researcher/Admin.</td>
<td>Level II</td>
<td>Level II Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July 11-Dec. 12</td>
<td>1st Session:</td>
<td>Level II Lab Monitor</td>
<td>Level I</td>
<td>Level I Teacher</td>
<td></td>
<td>Lab Monitor hired to supervise lab on Mondays, Wednesdays, and Thursdays as administrator/researcher no longer desired to do so yet students still needed assistance in computer lab</td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Level I Lab Monitor</td>
<td>Level II</td>
<td>Level II Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec. 13-Jan. 16</td>
<td>1st Session:</td>
<td>Level II none</td>
<td>Level I</td>
<td>Level I Teacher</td>
<td></td>
<td>Lab monitor assigned by administrator to assist Level I and Level II students in the new lab at Westbank CALL site.</td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Level I none*</td>
<td>Level II</td>
<td>Level II Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan. 17-Feb. 21</td>
<td>Wednesdays</td>
<td>Level II none</td>
<td>Level I</td>
<td>Level I Teacher</td>
<td></td>
<td>Students at West Bank site adequately trained so lab monitor begins to split time between West Bank and beginners' class on Wednesdays and Versailles beginners on Thursdays</td>
</tr>
<tr>
<td></td>
<td>1st Session:</td>
<td>Level II none</td>
<td>Level II</td>
<td>Level II Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Level I none*</td>
<td>Level II</td>
<td>Level II Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thursdays</td>
<td>Level II Lab Monitor</td>
<td>Level I</td>
<td>Level I Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1st Session:</td>
<td>Level I Lab Monitor</td>
<td>Level II</td>
<td>Level II Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Level I Lab Monitor</td>
<td>Level II</td>
<td>Level II Teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb. 22-Mar. 3</td>
<td>1st Session:</td>
<td>Level II Lab Monitor</td>
<td>Level I</td>
<td>Level I Teacher</td>
<td></td>
<td>New counselor assigned by administrator to assist in Westbank lab on Weds and Thurs, allowing lab monitor to return to two nights a week with beginners in Versailles.</td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Level I Lab Monitor</td>
<td>Level II</td>
<td>Level II Teacher</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*sometimes Level II students assisted
Table 4.5

Changes in the Organization of the Learning Environment on Computer Nights During the Implementation Process: Advanced Class

<table>
<thead>
<tr>
<th>Project Period</th>
<th>Instructional Session</th>
<th>Computer Lab</th>
<th>Classroom</th>
<th>Reasons for change in logistics/supervision</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 24-June 6</td>
<td>1st Session:</td>
<td>Group 1: Researcher/Admin.</td>
<td>Group 2: Teacher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Group 2: Researcher/Admin.</td>
<td>Group 1: Teacher</td>
<td></td>
</tr>
<tr>
<td>June 7- June 16</td>
<td>1st Session:</td>
<td>Group A: Researcher/Admin.</td>
<td>Groups B and C: Teacher</td>
<td>Too many students to fit in the computer lab in only two sessions</td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Group B: Researcher/Admin.</td>
<td>Groups A and C: Teacher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3rd Session:</td>
<td>Group C: Researcher/Admin.</td>
<td>Groups A and B: Teacher</td>
<td></td>
</tr>
<tr>
<td>June 17-July 10</td>
<td>Monday</td>
<td>Group 1: Researcher/Admin.</td>
<td>Group 2: Teacher</td>
<td>Enrollment decreased so no longer a need for three lab sessions. Teacher desires to be in lab with her students, but not all students can fit into the lab at one time.</td>
</tr>
<tr>
<td></td>
<td>1st Session:</td>
<td>Group 2: Researcher/Admin.</td>
<td>Group 1: Teacher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Group 1: Teacher</td>
<td>Group 2: none</td>
<td></td>
</tr>
<tr>
<td>July 11- Sept. 5</td>
<td>Monday</td>
<td>Group 1: Lab Monitor</td>
<td>Group 2: Teacher</td>
<td>Lab Monitor hired to supervise lab on Mondays, Wednesdays, and Thursdays as administrator/researcher no longer desired to do so yet students still needed assistance in the lab.</td>
</tr>
<tr>
<td></td>
<td>1st Session:</td>
<td>Group 2: Lab Monitor</td>
<td>Group 1: Teacher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Group 1: Teacher</td>
<td>Group 2: none</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Group 2: Teacher</td>
<td>Group 1: none</td>
<td></td>
</tr>
<tr>
<td>Sept. 6-Oct.16</td>
<td>Monday</td>
<td>Group 1: none</td>
<td>Group 2: Teacher</td>
<td>Lab monitor desires to go down to only 2 nights a week. She and teacher agree that advanced students no longer needed constant supervision in the lab.</td>
</tr>
<tr>
<td></td>
<td>1st Session:</td>
<td>Group 2: none</td>
<td>Group 1: Teacher</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Group 1: Teacher</td>
<td>Group 2: none</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>Group 2: Teacher</td>
<td>Group 1: none</td>
<td></td>
</tr>
<tr>
<td>Oct. 17-Mar. 3</td>
<td>1st Session:</td>
<td>entire class: Teacher</td>
<td>none: Teacher</td>
<td>3 computers are added to network, set up in counselors' office for total of 7 computers on network. Entire class can now work on the computers at the same time.</td>
</tr>
<tr>
<td></td>
<td>2nd Session:</td>
<td>none: Teacher</td>
<td>entire class: Teacher</td>
<td></td>
</tr>
</tbody>
</table>
Meanwhile the teachers struggled valiantly to accommodate the various groupings of students into their lessons plans on their computer nights. The general feeling of unsettledness that the introduction of CALL had generated was exacerbated by this sudden fluctuation in attendance so early in the implementation process. Nevertheless the staff and I remained optimistic about the appropriateness of CALL for our student population, especially since we shared the feeling that the increase in attendance was partly a result of the interest the computers had generated in the community.

By late June attendance began to level off, and the original schedule of two computer sessions an evening was resumed. For the remainder of the project period Quoc maintained this schedule on his computer nights.

As described in the earlier section on implementing CALL, by mid-June Alice had become very unhappy with her lack of involvement in the learning that was going on in the CALL lab. We both agreed at the fourth teachers' workshop on June 16 that a possible solution would be to have Alice begin working with her students in the lab on Tuesday nights.

This decision resulted in another change in the learning environment. Because the computer-to-student ratio was still too small to accommodate all her students in the computer lab at one time, Alice chose to assign students in the classroom lessons that they could do on their own or
with a partner during the time she was with the rest of her class in the computer lab. Both the students and Alice appeared comfortable with the new logistics of the learning environment for Tuesday nights. Often students who had worked as partners in the computer lab paired-up for the collaborative learning tasks their teacher had assigned for their unsupervised sessions in the classroom.

In mid-June I decided to hire a lab monitor to assist students in the computer lab as I could no longer keep up the grueling schedule of assisting students in the computer lab three nights a week and full-time work as the program administrator. Originally I had hoped that after the project got off the ground and students and teachers had been trained in computer use that it would not be necessary to have someone oversee the lab. However eight weeks into the project I began to think this would never be possible, especially for the students in Quoc's class. Most of the beginners still could not open and navigate the software programs on their own and his more advanced learners often asked questions about the meaning of new vocabulary or unfamiliar grammatical structures they encountered in their CALL lessons.

On July 10 I hired Sara Southwood, an ESL professional with over 12 years of experience in second language teaching, to serve as lab monitor in Versailles Gardens three nights a week: Mondays for Alice's class, and Wednesdays and Thursdays for Quoc's classes.
Sara quickly caught on to how the programs operated and soon established a warm rapport with the teachers and students. In September when classes resumed at the university where she was employed as a full-time ESL instructor she requested a reduction in her work schedule to two nights a week. At that time both she and Alice agreed that students in the advanced class no longer needed constant supervision in the lab, so Sara began coming to Versailles Gardens on Wednesdays and Thursdays only to assist Quoc's during their CALL lessons. This resulted in no major changes to how Alice conducted class on Mondays. She still worked mainly with her students in the classroom on Mondays, and would "trouble-shoot" in the lab only when needed regarding technical problems. She adjusted well to added chore of going back and forth from the classroom to the lab, and these interruptions were handled with minimal disruption to her classroom teaching.

In October the stand-alone and two new computers (purchased with end of the year surplus funds in the youth program) were added to the network and placed against the east wall in the counselor's office which was next to the computer lab, creating yet another change in the organization of the learning environment.

Attendance in Quoc's class had dipped so low by then that he could have easily scheduled the lab for use by all his students at the same time, nevertheless he chose to continue to assign his Level One and Level Two students to
different computer lab periods. Again, the major advantage he saw in maintaining this schedule was the opportunity it afforded him to work with similar ability small groups in the classroom.

The increase in the number of computers on the network made possible a major change in the logistics of instructional delivery for Alice on her computer nights. She was now able to work with all her students at one time in the expanded lab as well as afterwards back in the classroom. By December a pattern had developed where she usually assigned the lab for the first hour of instruction on Mondays and the last hour of instruction on Tuesdays.

In November I asked Sara to work temporarily as the lab monitor for the beginners' class in the CALL lab that had just been installed in the refugee program office in Marrero on the West Bank. My experience teaching beginning level students in Versailles Gardens how to operate the computers had informed me of the need for constant on-going assistance for low English proficient students new to computer learning. My plan at the time was eventually to split Sara's work schedule between the two sites by having her work one night a week with the beginners' class in Versailles Gardens and one night a week with the beginners' class in Marrero. I estimated that after about eight weeks the beginning level students in Marrero would be computer proficient enough that their teacher would not have to spend an inordinate amount of time instructing them on
basic computer operations. Also our experience in Versailles showed that by that time the trained students would likely be able to assist any new students to the program. As attendance in the Marrero advanced class rarely totaled more than eight students, the teacher for the advanced class could easily work with all his students in the lab at one time and did not need assistance from a lab monitor.

When Sara left for the West Bank, the refugee program was not in a financial position to hire another lab monitor for Versailles Gardens. Although I preferred that Quoc's students have someone available to offer assistance in the lab, I felt that for the eight weeks that Sara would be needed to get the Marrero beginners "up to speed" the Versailles program could handle the readjustment. I reminded Quoc that he always had the option of using the lab just one night a week. I also suggested that he could consider having his Level One and Level Two students come at different times on Monday and/or Tuesday nights. However, he did not want his students to receive less than their normal hours of instructional time a week and he still preferred to work with smaller, more homogeneous groups of students on his computer nights. Therefore he chose to continue with the original schedule of assigning Level One and Level Two learners different computer time slots on Mondays and Tuesdays, working with the alternate group in the classroom.
Quoc never complained about this new arrangement, but he did find it stressful. Unlike Alice, Quoc had to be present in the lab to ensure that his students booted up correctly. He also took a more active role in assigning partners. Because the English language abilities of his Level One and Level Two students were so different, he almost always had to assign his two different groups of learners different CALL lessons. When his Level One students were in the computer lab, he often asked one of his more computer proficient Level Two students to stay in the lab with them to troubleshoot. Occasionally I would help out as well.

The new logistics that lack of a lab monitor precipitated required quite a bit of running back and forth between the lab and the classroom for Quoc. If he ran into a prolonged problem in the lab, he would sometimes return briefly to the classroom to assign students there a lesson to do on their own. Through 16 years of teaching English to refugees in Versailles Gardens Quoc had become a master at adjusting to change, and he seemed to cope well with this new twist in providing ESL instruction to his students.

Nevertheless, it troubled me to see his workload so taxed. A solution to this problem appeared to me in February I decided to assign the newly hired West Bank counselor lab monitor duties at the Marrero office. Sara then returned to work in the computer lab for Quoc's
classes on Monday and Tuesday evenings, and remained there until the study came to a close in March.

Cooperative Learning

Recent trends in second language (SL) learning emphasize the importance of active, purposeful communication on the part of learners. Many SL educators believe that cooperative learning—defined as those instructional settings that encourage collaborative, interactive peer teaching and learning (Chang & Smith, 1991)—is essential in providing students with the quantity and quality of communicative tasks needed to achieve fluency in the target language. Long and Porter (1985) outline five pedagogical arguments for having SL students work together in small groups. They note that collaborative group work has the potential for: 1) increasing the quantity of language practice opportunities; 2) improving the quality of student talk; 3) individualizing instruction; 4) creating a positive affective climate in the classroom; and 5) for increasing motivation. Long and Porter contend that psycholinguistic research strongly supports the notion that the interlanguage talk produced by students engaged in collaborative learning tasks leads to second language acquisition.

Bueno and Nelson (1993) found that having language students work together on CALL programs which provided contextualized listening tasks seemed to encourage participatory and cooperative learning behaviors between
users. Chang and Smith (1991) suggest that the combination of computer-assisted instruction and cooperative learning strategies provides students with the type of learning tasks which facilitate language learning and promote positive attitudes towards peer learning. These researchers' findings had piqued my interest in exploring whether the learning environment in the Versailles Gardens ESL program, specifically the nature of group work and how teachers used group work to teach English, had somehow changed after the implementation of CALL in the program.

Cooperative learning was an important strategy in Alice's language teaching methodology. She strongly believed one of her most important tasks as a teacher was to "empower" her students as learners. She noted in an interview conducted May 4 that when teaching adults, "you are not shaping them like children. Really, you are working with what is already there, and you are teaching them to teach themselves." She frequently assigned her students work to do in small groups in the classroom, such as writing language experience stories together, role playing activities, or ice-breaker word games. She felt that such collaborative learning tasks contributed to her students' confidence in themselves as learners and created meaningful opportunities for them to communicate in the target language.

Quoc, on the other hand, rarely assigned his students group work. Throughout the years Quoc had often been
encouraged to implement more student-to-student activities in the classroom. However, Quoc simply did not like assigning his students pair work. In an interview conducted January 4, 1996, I asked him why he chose not to do more group work in the classroom. He answered that it was not simply his preference not to, but that of his students as well. He said, "When I ask them to work in groups like that, some of the group just sit there by themself."

Traditionally the teacher leads most classroom activities in the Vietnamese culture. Although Quoc had learned many effective teaching strategies throughout the years, after almost 16 years as an ESL teacher he still had not adjusted to using small group learning as a means to teach English.

Students often had to work in pairs in the computer lab during the first eight months of the project until the lab was expanded in October. After that point Alice almost always chose to have students work in pairs regardless of the number of students in attendance. In contrast, Quoc only assigned his Level One students partners in the lab when enough computers were available for students to work on their own.

CALL seemed to provide students with many opportunities for interpersonal interaction. I often observed students in the computer lab, especially the Level Two students and Alice's students, ask their partners questions or discuss which response to select, explain new
vocabulary to their neighbors, or announce to the entire lab information on how a program functioned or the meaning of a new language concept.

Alice noted that the problem solving that she observed in the computer lab was more "serious" than what she had been observing in the classroom, and was contributing to students' respecting each other more as teachers and learners. She felt the cooperation and peer teaching occurring in the computer lab was "doing a wonderful thing for the group dynamic in the lab", and even more noticeably back in the classroom.

I observed both classrooms throughout the project period. At the beginning of the study Alice's students' seemed quite uncomfortable working together in small groups in the classroom, and appeared embarrassed and confused about what was expected of them. By the end of the study there was terrific comradery in her classroom. Students went about pairing up or working in small groups quite naturally, and rarely spoke to each other in their first language while performing collaborative learning tasks in the classroom. Students who worked in pairs in the lab often chose to be partners in group work in the classroom. Certainly Alice's emphasis on small group activities and the bonds of trust that evolved between her and her students over time are factors that must have played an important part in the increase in cooperation among learners in her classroom. Nevertheless, I also share with
Alice the sense that her students' experience with CALL is part of the explanation as well.

It was not readily apparent if the cooperation and peer teaching occurring in the computer lab was transferring in any way to Quoc's classroom, however, as he still rarely assigned group work in the classroom. Thus ways of organizing his class so that the cooperative learning that was occurring in the lab could be capitalized upon in the classroom did not occur. By the end of the project Quoc did not feel that the innovation had affected the nature of group work in his classroom. My observations concurred with this assessment.

What Changes Do Teachers Experience as CALL Becomes a Part of Their Teaching Repertoire?

Another research question I sought to answer with this study asked, "What changes do teachers experience as CALL becomes a part of their teaching repertoire?" As in Huberman and Miles (1984) seminal study of educational innovations in schools, teachers in this study also experienced repertoire expansion, changes in routine, and changes in their relationships with their colleagues. For the less experienced of the two teachers, CALL also served to enhance self-efficacy.

As the project progressed and the teachers grew in their knowledge and understanding of the CALL software, they began to explore ways CALL could best support the learning goals they had identified for their students. Both
teachers eventually looked to CALL primarily as a way to reinforce topics being addressed in the classroom. However, the significance of the role of CALL in one's teaching repertoire differed between the two teachers. This had to do in part with the personalities of the teachers, their vastly different experiences both in teaching ESL and in their exposure to computers, and the English language proficiency of their students. In this section I will discuss changes the two teachers experienced as a consequence of the innovation separately.

Changes Alice Experienced

When Alice participated in the first CALL workshop on April 24, she had been employed as an ESL teacher for exactly eight weeks. It is thus difficult to discuss the changes Alice experienced in her teaching in relation to CALL as she was so new to teaching when the innovation was introduced. On June 21 she commented,

because the computers were introduced in the second month of my teaching I can't say that anything has been interrupted or dramatically changed as there wasn't really much that was set or in place. The whole thing was really developing and evolving very freely and the computers just really influenced that.

Although Alice was new to teaching ESL when the innovation was introduced, she was already an "old hand" at working with computers. As a child she had attended the first school in the state of Montana to incorporate computer-assisted instruction into the curriculum. She used computers throughout her high school and college careers to
write papers, create graphics, and for e-mail, and she had completed two computer programming courses. At the beginning of the project she said, "I have basically had a lifelong relationship with computers. They have been there as long as I have been an active learner." Therefore, fear of computers or "technophobia" was never an issue for Alice when computers were introduced to the ESL program. In fact, she expressed a high level of enthusiasm for the new innovation, and felt fortunate that she was going to have the opportunity to work with CALL so early in her teaching career. On May 5 she commented, "I feel very lucky to have it at the beginning of my teaching, because I feel it is just going to benefit what I am able to teach."

The use of CALL in Alice's instructional routine co-evolved with her development as a teacher for the program. Nine weeks into the project Alice had come to feel that CALL had become an influential factor in the development of her class by helping to create "consistencies and routines and helpful patterns of learning" for her students. By the end of the study Alice had become so accustomed to incorporating CALL into her weekly lesson plans that she felt she "could not imagine teaching English without computers".

Throughout the study in interviews and in journal questions I asked the teachers to comment on how they felt the innovation was affecting the way they taught English and student learning. Analysis of data on questions
pertaining to these changes and classroom observations indicate that CALL influenced Alice's teaching largely in the following areas: changes in daily routines and expansion of repertoire, self-efficacy, and relationships with colleagues.

Changes in routine and expansion of repertoire.

As described above, the scheduling of CALL for use by Alice's class on Monday and Tuesday evenings and the changes introduction of the innovation had generated regarding where and when students were to be taught resulted in major changes in Alice's daily routines of teaching, especially on her computer nights. Selecting the CALL lesson, assigning students to the lab and later in the project responding to student questions in the lab, and then discussing the CALL lesson afterwards in classroom soon became a part of her instructional routine.

How Alice integrated CALL lessons into her classroom teaching became more effective as the project progressed. This evolution occurred through coaching- primarily from the ESL coordinator, her participation in quarterly in-service meetings, CALL workshops, and ESL conferences, and learning from her own experiences in the classroom. Nevertheless, by the end of the project I observed there was still a need for Alice to better integrate her students' learning experiences with the computers and the teaching she provided in the classroom.
In the early weeks of the implementation process Alice was concerned with what she termed the "lack of continuity" between learning in the classroom and learning in the computer lab. To bridge the gap she felt existed between the lab and the classroom she would attempt to, in her words, "contextualize" learning in the lab by talking at length in the classroom about the meaning of the new words or phrases her students had just been exposed to in the computer lab. Like many novice teachers, she had a tendency to engage in "extended teacher elaboration". As the project progressed and her understanding of language learning grew she gradually began to develop more effective ways to review CALL lessons which required more thoughtful processing and more language production on the part of her students. For lessons which focused on new vocabulary words, this often involved the students composing sentences or stories on the computers using the new words from a CALL lesson. Sometimes she would develop word games to review a CALL lesson in class. Other times she referred to lists of vocabulary words or dialog sentences used in a CALL lesson to develop questions she would ask to check for comprehension. However by the end of the project she at times would simply limit her review to having students simply recite in class from lists of vocabulary words or sentences from a CALL lesson to check for pronunciation, a practice which perhaps reflected her still novice's understanding of second language learning principles.
As the software library expanded and her familiarity with the contents of the programs grew, Alice came to see CALL as an important resource for her to draw upon to support and reinforce certain concepts, vocabulary, or cultural themes she was teaching in the classroom. She felt that the CALL lessons she assigned her students enhanced her "frame of reference" with her students, and she found herself frequently referring to material presented in CALL lessons during the course of a classroom lesson. With the expansion of her CALL repertoire it also became easier for Alice to choose CALL lessons that fit more closely with one of the topics she was presenting in class.

At any one time Alice was working through several "themes" with her students, often based on needs she had identified in the course of instruction in the classroom. For example, after studying a play for several weeks, she realized when she asked her students what the protagonist would have to do next that her students' grasp of the future tense was weak. She then began teaching lessons in the classroom on the future tense. These lessons were reinforced in the computer lab with CALL lessons from various software programs that covered the future tense.

Sometimes Alice would choose a particular cultural theme to explore with her students, such as shopping in the United States. She supplemented lessons on shopping with CALL vocabulary lessons on the supermarket. She concluded
her unit on shopping by taking her entire class on a field trip to the grocery store one evening.

Occasionally Alice could not think of a CALL lesson that had anything to do with topics she was covering in class. Although the option to cancel computer use on her computer nights was available to her when this occurred, she rarely chose to do this as she felt this would have disappointed her students. Instead she would choose a lesson that looked fun to do or offered a review of concepts studied previously. She felt an hour to an hour-and-a-half of CALL instruction two nights a week made for variety in the students' learning and kept instruction in the program "new and fresh", which she felt was very important when teaching adult learners. In October she wrote in her journal,

computer learning has proven to be fun [underlined twice] for my students. This is very important in a program such as ours and I am constantly trying to integrate important lessons and concepts with light-hearted and enjoyable experiences. With this in mind computers have been a huge addition to [my] teaching English.

At times Alice would almost try and take on too much at once, and felt that use of the computer lab on Monday and Tuesday evenings imposed a structure on her weekly lesson plans that she felt was lacking before the innovation was implemented and which she welcomed. When trying to plan her lessons for the week, she liked knowing that for 60 to 90 minutes on Monday and Tuesday evenings
her students would be engaged by CALL. She also felt her creativity was challenged when she strove to integrate the CALL lesson into her classroom teaching.

Ten weeks into the project she noted that the use of CALL in the program was making her more conscientious about planning lessons and really "focusing on ways to integrate what they are learning on the computers." Nevertheless, by the end of the project it was still not often clear to me nor the ESL coordinator what language learning objectives Alice had in mind for the lessons she planned for her students. Although she perceived that learning in the computer lab and learning in the classroom were becoming "more integrated", she often did not seem to provide her students with the tools to build upon the language learning that was occurring in the computer lab. Again, this problem area reflects her lack of experience in the complex practice of second language teaching. By the end of the project Alice was still not very aware of the need to think through all her lessons more carefully- not just the ones involving computers- by more clearly identifying the language learning goals she hoped to achieve with a lesson and the steps she needed to take to facilitate student learning.

At the last teachers workshop of the research project, held on November 16, I lead a discussion with the teachers on how to "refine" CALL use in the program. By that point of the research project I had become concerned that I had
focused too much of our time on learning the contents of the programs and that we now needed to spend more effort on better integrating CALL into the curriculum. I was particular concerned with how Alice reviewed her CALL lessons with her students afterwards in class and how students in both classes were not being properly prepared for their CALL lessons.

I made several suggestions at the workshop on how use of CALL could be improved. I had observed on several occasions that students often did not know what they were going to study in the lab until they saw their assignment written on the blackboard in the lab. I recommended that some sort of pre-listening preparation always precede a CALL lesson. I also suggested that to increase student learning of new vocabulary, teachers needed to develop review activities that would require deep and thoughtful processing by students. I suggested several ranking and classification tasks that would encourage such thinking on the part of students.

Although Alice was originally open to such suggestions, it seemed by that time in the implementation process certain habits had become ingrained. She came to feel that the writing exercises she assigned her students in the lab were providing adequate review and that additional review in the classroom beyond what she was already doing was not needed. I therefore observed little
change in this area by the time the research project came to a close in early March.

**Changes in self-efficacy.**

Early in the project Alice was not comfortable with the organization of her class on her computer days, and for a few weeks her enthusiasm for CALL waned. However, when she began to work with her students in the CALL lab and gained a greater understanding of how her students used and experienced CALL, she again became very positive about CALL, and remained very enthusiastic about CALL throughout the project period.

Alice felt that the computers played an important role in the development of the tone of her classroom by giving the program a "stronger sense of importance" and instilling in her and her students a sense of pride to be able to work with such a new and important technology. She also felt a sense of accomplishment for having mastered the content and operation of the CALL programs and having incorporated CALL into her teaching repertoire. In an interview conducted August 31 she said,

> I am feeling even more competent than I did before with learning the software programs which is a wonderful thing for me and I am very happy about it. ...[CALL] has again become something I have become dependent on and [I] really like exploring its many possible uses.

Alice felt that CALL had contributed to her self-efficacy as a teacher in another way. She noted that her students had become more "comfortable and solid" with the
questions they asked her about the programs when they realized that she was also knowledgeable of computers and the various software programs. She felt this enhanced respect from her students was an unexpected bonus that the implementation of CALL had afforded her.

Changes in relationships with colleagues.

The implementation of CALL led to very few changes in how Quoc and Alice interacted at the class site. Before the project began, they had little interaction in the course of carrying out their teaching duties and responsibilities, and this pattern did not change after CALL was implemented. When Quoc had to take over getting his students started on the computers when Sara left for the West Bank, there were a few instances when he needed to call upon Alice for assistance on minor technical problems he ran into in the lab. Other than this, they rarely interacted.

Before the CALL project, I had little contact with the ESL teachers in the program. However, throughout the implementation process, and particularly in the early weeks, I had considerable interaction with the two project teachers. I came to know them better and my respect for the very difficult job they had teaching English in a program as unstructured ours grew even deeper. I believe we developed cordial working relationships.

I was very impressed with Alice's sensitivity to the Vietnamese culture, her self-confidence, and the energy and commitment she brought to the program. When the position of
youth counselor for at-risk Vietnamese girls opened up in the new youth program, I thought she would be ideal for the job. I offered her the position, which she happily accepted. This new position allowed her to go to full-time status with the program and opened up a whole new career area for her. It also resulted in even more interaction between us, which I believe contributed to a deeper and fuller mutual appreciation of each other's talents and abilities.

Alice was always very eager talk about her teaching and how she was using CALL, and was somewhat disappointed that she and Quoc did not have the personal dynamics which would have allowed them to interact and share teaching experiences. For the brief time that Sara was with the program, Alice was able to fulfill her need to be connected to others similarly involved in teaching. She liked bouncing ideas off Sara and enjoyed the discussions they had on learning.

Changes Quoc Experienced

When the project began in April of 1995 Quoc Nguyen had been employed as an instructor for the ESL program in Versailles Gardens for almost 16 years. Except for the three weeks he and his family visited Vietnam in 1993 for the first time since fleeing in 1975, Quoc rarely even took a night off from his teaching duties in Versailles Gardens.

As he explained to me at different times during the course
of the project, Quoc steadfastly remained with the program because he wanted to be of service to his people.

Through the years the refugee program in Versailles Gardens had undergone many transformations in response to the often chaotic exodus of refugees from Vietnam and the government programs and policies that were developed to deal with that long-term crisis. Change, therefore, was a constant feature of the ESL program in Versailles Gardens, and I was constantly amazed by Mr. Quoc's flexibility and ability to "roll with the punches". Even when enrollment in his class grew so large in July that students had to sit crammed together in the hallway next to his classroom, he never appeared rattled. New students were constantly entering his class, yet he always made them feel welcome.

Quoc had little exposure to computers before the project began. He was familiar with word processing packages, but he did not have a computer in his home nor were computers available for his use at his day job as a fifth grade math teacher. When the project began I did not sense any resistance on Quoc's part to using CALL in the program, but I did not sense much enthusiasm either.

When I first interviewed Quoc at the beginning of the study I was somewhat surprised to learn how difficult it was for him to articulate how he went about teaching. During the course of the research project I found that Quoc actually had very little to say about his teaching methods or the pedagogical reasoning that he employed to take
certain actions in the classroom or the computer lab. I believe only part of the reason for this could be said to be the result of the language barrier that existed between Quoc and myself. I came to sense that he had a strong intuitive feel for how to teach a second language, and simply was not conscious of all the many factors that went into his decisions to teach in a particular manner.

Quoc's lessons were usually teacher-lead and centered, nevertheless, he had an extraordinary ability to engage everyone in his class in what he was teaching, even when he had students with a wide range of English proficiency together in the classroom on his non-computer days. While conducting a lesson he would often go around the classroom and ask individual students to respond. The chosen student would then turn her total attention on the teacher while giving the answer, looking to the teacher for non-verbal clues and other feedback. While that student would be in the process of responding, usually several other members of the class would voice their responses as well. Although Quoc would not acknowledge their contributions, only rarely did he discourage the other students from answering too, which seemed to serve to keep everyone involved in what was going on. The atmosphere of his classroom was relaxed and comfortable, yet full of energy and the buzz of students talking softly with each other or responding in clear voices to their teacher's prompting.
Whereas Alice loved to talk about her teaching and the goals she was trying to accomplish with her teaching, Quoc, on the other hand, appeared uncomfortable with questions about why he did what he did. His answers to my questions were often sparse and simple. To a question I posed early in the study, "What is it about teaching ESL that you enjoy the most?" Alice's answer occupies one entire page of transcripts. This is in sharp contrast to Quoc's reply, which follows in its entirety: "Seeing people progressing from almost nothing. And after one or two years can be on themself. To see doctors, to go to the store. Survive."

Although it was hard for Quoc to discuss his teaching, I believe the larger, more significant reason why the volume of data I gathered on Quoc is much less than Alice's is this: CALL was simply not as important to Quoc as it was to Alice.

Quoc was an experienced and accomplished ESL teacher when CALL was introduced, and a master at adapting to change. He was quite clear about what he needed to teach his students and how to go about it. Also, the software programs that he chose to use closely matched the content and teaching goals he had identified for his students. However, as the English proficiency of his students was much lower than Alice's, his students could not use as wide a range of software programs as students in the advanced class. Therefore Quoc had fewer options available to him in using CALL. For these reasons, the addition of CALL to
Quoc's teaching repertoire resulted in little change in how he went about teaching or how he felt about himself as a teacher, and he adapted easily to its use.

Throughout the study I asked Quoc to comment in his journal entries and during our interviews on how he felt the innovation was affecting the way he taught English and student learning. Analysis of data on these issues led me to conclude that use of the innovation had resulted in the development of a closer working relationship with me and a cordial working relationship with the lab monitor, as it had with Alice. Although CALL use in the program affected Quoc's teaching routine and also served to expand his teaching repertoire, neither the magnitude nor the significance of these changes were as great for Quoc as they had proved to be for Alice. The changes that CALL precipitated for Quoc are discussed below.

**Changes in routine and expansion of repertoire.**

As described earlier, the scheduling of CALL for use by Quoc's class on Wednesday and Thursday evenings resulted in some major changes in Quoc's daily routines of teaching, especially on his computer nights. Quoc seemed to relish the new logistics that use of CALL necessitated, which allowed him to work with smaller groups of students more similar in their English proficiencies in the classroom. Even when the lab monitor left for another assignment, he continued with the original scheduling of CALL use.
After the project was underway, students in the beginners' class rarely asked the lab monitor questions about their CALL lessons, and instead often looked to the more advanced students in the lab to provide an immediate explanation in Vietnamese. When questions still remained, as they often did, students would then query their teacher in Vietnamese about the meaning of unfamiliar words or phrases back in the classroom.

Soon after CALL was implemented Quoc altered his teaching routine for class sessions which followed a computer session by including time to reply to these questions. Quoc almost always responded in English to his students' questions about CALL, and reverted to Vietnamese only as a last alternative. He would then usually continue to review the CALL lesson with his students using various methods and techniques.

For example, for a CALL lesson on the parts of the body he led the class in Simon Says. His students roared with laughter as they played this game with their teacher. For a CALL lesson on calendar and holidays he had his students fill out a calendar for the month of August, asking questions and eliciting responses from his students throughout the exercise. Sometimes he would have his students play Bingo using new vocabulary words. Quoc had a sharp understanding of the learning needs of his students and he clearly knew how to illicit production from his students during these review sessions.
The teaching of new vocabulary is a major goal in providing English language instruction to low level beginners such as Quoc's students. Another major emphasis, particularly in a program which strives to provide students with "survival English" as quickly as possible, is the development of listening skills. Quoc felt certain software programs chosen for use in this project closely matched the topics and objectives of his classroom instruction. Therefore choosing CALL lessons was not difficult for him and he felt that CALL "fit" his teaching very well and added to his instructional resource bank. In an interview conducted June 29 he commented, "I don't see that disruption and I do feel that it is a continuation of what we learned in class." In an October journal entry he wrote, "I think English Express is a very good tool to teach survival English. Its basic method of teaching is similar to mine, and the students can print out their lessons."

It is interesting to note that although it was Alice who expressed much concern about "bridging the gap" between the classroom and the lab, it was actually Quoc's students who appeared to sense the greatest continuity between the two venues for learning. In interviews and focus groups conducted by my bilingual research assistant, it was only the beginners who noted a connection between learning in the classroom and learning in the computer lab. How students compared learning in the computer lab and learning
in the classroom will be discussed in depth in the next section of research findings on "Learning with CALL".

During our June interview Quoc explained what went into his selection of a particular CALL lesson for his students: "I try and choose subjects that would benefit my students the most. I usually chose something that [has] to do with the lesson. Or that I am going to introduce to them soon or that I just taught them."

In an interview conducted in December I asked Quoc to summarize how he uses computers to teach English. He responded, "For me I use them to reinforce my lesson—especially survival English, new vocabularies. Students have a chance to listen, talk, listen to their voices."

Early in the project Quoc recognized CALL as a valuable tool to enhance language learning for his students. In late May he wrote the following in his journal:

My general impression about CALL is it is a wonderful program for to make ESL easier, funnier, and more enjoyable to learn. All my students seem to enjoy the computer lab very much. Some of them wish to have a computer at their home so they could spend more time to work on their lesson. They understood the lesson taught better and remembered more vocabulary words introduced to them by the teacher and the English Express program. They enjoy hearing their own voices, repeating the vocabulary words or saying the sentences.

Through the course of the project Quoc and I came to see that CALL may not always be appropriate for older, low level beginners. But other than for that small group of students, nine months into the project Quoc was still very
committed to using CALL to teach English to beginner level students. In an interview conducted in late December he said, "I feel strongly that it [CALL] is very good and that we are fortunate to have the program. It really helps."

Quoc thought CALL was helping his students to learn English mainly in the following ways: by providing opportunities to hear native speakers, by allowing students to learn at their own pace, and by providing constant review of material students had previously been exposed to in the classroom.

Although CALL had a major effect on the way his classes were organized, CALL did not seem to have the centrality of importance that it did for Alice. Other than changes in routine described above, the introduction of CALL seem to have little impact on how he went about his teaching or how he perceived himself as a teacher.

At the last teachers workshop of the project period held in mid-November I reminded the teachers of the need to provide students with the background information needed to understand the oral discourse presented in CALL listening activities. I also suggested ways to better review CALL vocabulary. I had observed that Quoc was very solid in most of these areas of his teaching, and employed established second language techniques in incorporating CALL into his teaching. Occasionally, however, he sent his students to the lab with little preparation. Quoc was receptive to my suggestions at the workshop, but he found that it was very
difficult for him to try and better prepare students for the computer lab or review more thoroughly in the classroom when he did not have the assistance of a lab monitor. I observed little change in these areas by the time the study came to a close in early March.

Changes in relationships with colleagues.

Quoc and I rarely interacted before the project period. As with Alice, I believe our collaboration in implementing CALL led to the development of a cordial working relationship between us. Quoc had seen very little of the previous refugee social service administrators. He thought it was very helpful to have me at the program site as it got me "more involved" in the program, and I could really "see what's going on".

He also enjoyed working with Sara and having her as a colleague. He stated in an October journal entry:

Sara is very helpful and I think our coordination is great. Usually before a computer lab we decide together which lessons to give the students. At the conclusion of the session she always gives me the report on what and how the students were during the computer session. She also goes about to check and help students with pronunciation, meanings of the word, and how to use different command keys. She is very helpful and very nice. That is the impression that I have from my students.

Change can be difficult on many levels. The addition of a pleasant and competent colleague to the Versailles Gardens teaching staff such as Sara appeared to make the transition to CALL use less stressful for both teachers.
Learning with CALL

*Students' Early Impressions of CALL*

Most students attending ESL classes at the Immigration and Refugee Services Community Office in Versailles Gardens had never touched a computer before CALL was implemented in the program. The installation of the computer lab on April 20, 1995, therefore stirred quite a bit of excitement. After I explained the project to the students on April 25, the teachers and I were encouraged by the comments of an older gentleman in Alice's class. Mr. Bui, acting as a spokesperson for his classmates, said that the students were grateful to have the opportunity to learn with computers and felt "honored" to have been chosen as some of the first refugee students in the U.S. to be taught English with computers.

A student's first lesson on a computer usually involved the lab monitor demonstrating how to use the mouse. Students would then practice 20 to 30 minutes on a tutorial designed to teach this skill, after which most students were ready to begin work on a program.

Students exhibited a range of emotions and behaviors during their first few experiences with the computers. In many cases nervousness and timidity evolved quickly to surprise and delight. Several times students appeared visibly excited after their first computer lessons, and overall initial reactions to CALL were very positive in both classes.
Alice reported that one man who had lived in the United States for 15 years was shaking after his first session on the computers. He told her in an excited voice "I can finally hear!" I observed another older gentlemen, laughing and smiling after his first lesson, who actually skipped back to the classroom. It was very common in the early weeks of the project to almost have to drag some students off the computers when their time in the lab was up. The students appeared very focused and engaged in their lessons, and there was little "off-task" behavior. Students often commented how quickly the time went or how they would like more time on the computers.

The teacher for the advanced class recorded the following comments her students made back in the classroom after their first lesson: "It was easy because I could hear clearly like when the teacher speaks"; "I think it is very interesting that I saw that I can make progress"; "I see that I can learn about many thing, anything I want to I can get"; "There are many good things, I feel comfortable". Quoc, the beginners' teacher, commented in his journal entry five weeks into the project that, "All my students seem to enjoy the computer lab very much. Some of them wish to have a computer at their home so they could spend more time to work on each lesson."

Some students reported that at first they were nervous about using computers, but within a week or two their
worries had vanished. In a survey administered\(^1\) in May soon after the computers were introduced a 64-year-old man who had arrived in the U.S. only two weeks earlier wrote, "I was very nervous the first time I used the computer because I did not know how to use it, and I was afraid to press the wrong button and mess up the computer." A young woman responded, "When I just entered the lab I was very nervous, but after the teacher heartily helped me, I liked it. Yet, I'm still a little puzzled about the ways to operate it." Another student said she was "trembling" and could not remember what should be done. However, most students (19 out of 33 responses) reported they were not nervous during their initial experiences with the computers.

I did not notice any pattern of differences in initial experiences between the younger students or the older students or women versus men. However, from the project's inception there were differences between the feel or tone in the computer lab when the beginners, especially Level One students, were using the computers than when the more advanced students were assigned to the lab.

The atmosphere in the lab was more subdued when the beginners were there. Beginners would repeat words or

\(^1\) All three questionnaires used in this study were translated into Vietnamese before being administered to students. Verbal instructions were given in Vietnamese and students were asked to write their responses in Vietnamese. Both the English and Vietnamese versions of the student questionnaires may be found in Appendices A, B, and C.
phrases from the computer, but not as frequently as the advanced students and usually in a soft voice. Sometimes the beginners would almost whisper back and forth with each other over what to do next. The lab monitor would encourage them to speak more loudly, but to no avail. In contrast, the students in the advanced class and the more confident Level Two learners would repeat what they were hearing and converse with each other in near normal speaking volume.

Still the beginners appeared to be enjoying their CALL lessons and seemed keen to work in the lab. In the early weeks of the project students from Quoc's class would line up eagerly at the door to computer lab to await their turn at the computers, and often appeared reluctant to leave the lab when their time was up. Several times I observed a smile slowly cross the concerned face of a beginner as he or she began to understand how a program operated. Some found their early experiences learning with computers amusing, and at different times pairs of beginners were seen laughing and giggling over pictures or phrases in a CALL lesson that they had found funny or unusual.

The advanced class could understand the lab monitor's instructions in English, however it was necessary to have an interpreter present with the beginners to translate instructions on how to operate the computer for the first few computer lessons at the beginning of the implementation process. Five weeks after the project began, several advanced students had learned how to enter and exit the
software programs, and by early September students in Alice's class had progressed enough in their computer skills that it was decided that they did not require having a lab monitor present to assist in booting up. By the end of June Quoc and I agreed that the beginners' class would probably always need someone in the lab with them to "troubleshoot" on minor technical problems and that some of the older Level One students would "never" be able to open and exit certain programs on their own.

About four weeks into the study I began to notice "off-task" behavior on the part of a few students in the beginners' class. It seemed as though their initial "dazzlement" with the computers had worn off and that the hard work of having to learn a new language had become a reality in the computer lab as well. On May 18, Kim, a 34-year-old Level One learner, groaned loudly in the lab: "I am tired and hungry." She did not appear at all interested in the program and had relinquished control to her partner, who chose largely to ignore her. On May 24 I observed this same student engage in a long conversation in Vietnamese with a woman sitting across from her in the lab who was her co-worker at a sewing factory. This was the first time I had observed students "off-task" for a significant length of time.

In June Mr. Quoc began to hear complaints from some of his Level One students that the computers gave them headaches because they required the students to
"concentrate too much". In early August three Level One students requested to stay in the classroom with the teacher during their scheduled computer time. At the initiation of the project I had stressed with the teachers that students not be forced to go to the lab. Mr. Quoc was in complete agreement with this policy and readily accommodated these students' requests to remain in the classroom.

Factors That Influence Learner Engagement with CALL

It has been argued that the single most important factor affecting language learning is the student's level of engagement with the content material (Blake, 1987). The potential for computers to stimulate and maintain student interest in the target language has been cited as a major argument for CALL use (Stevens, 1989; Pennington, 1996; Soska, 1994).

One of the most commonly heard observations made by visitors to the computer lab was how "engaged" students appeared in their CALL lessons. CALL was capable of generating interest and focus among students, yet in varying degrees. Whereas some students remained "fired up" by CALL throughout the project period, a distinct few were soon "overcome by the smoke".

Determining to what extent a student appears interested or engaged in a learning activity requires a somewhat subtle judgment on the part of the observer. Notwithstanding, educators constantly look for behavioral
cues which might indicate the degree to which a learning activity has captured their students' interest. The teachers and I agreed that certain student behaviors clearly indicated whether a CALL lesson was maintaining a student's interest or not.

Eyes focused on the screen and a look of intense concentration on the face of the learner were sure signals of student engagement with a CALL lesson. Another indication of a student being absorbed by CALL was frequent interaction of the student with the program. For task-oriented software programs the engaged student appeared focused on accomplishing the task properly and became concerned if errors caused her score to decrease.

For the more open-ended type programs, behavior that indicated high interest in the lesson included actions on the part of the student to exploit the opportunities to practice English presented by these lessons. Some programs asked students to make up their own answers to questions posed by the computer. The more "engaged" learners took full advantage of this opportunity to compose in their new language and took care that their answers were correct, both in meaning and structure. When the computer said an unfamiliar word or phrase, the more English-proficient engaged students would often repeat out loud the word or phrase, often several times, until they were satisfied with their pronunciation.
The engaged student was not easily distracted and rarely became involved in "off-task" conversations with other students. Finally, one of the most important indications that a student was absorbed in learning with computers was time on task. When a student worked in the computer lab the entire lab period and did not return to the classroom until asked to do so by her teacher was considered a clear sign that the student was interested in the CALL lesson.

Several factors played a role in engaging and maintaining student interest in working with CALL. Students who sustained an active interest in working with CALL throughout the project period were generally highly motivated to learn English and were more advanced in their English proficiency. However, those few low English proficient students who had comparatively advanced educational backgrounds tended to like learning with computers very much.

For any particular lesson the compatibility of one's CALL partner was important in maintaining a student's active involvement in the lesson for the entire lab period.

A "novelty effect" was clearly operative when students were first introduced to CALL. Students' overall interest in learning with computers, as measured by the amount of time students indicated they preferred to work in the computer lab each week, tended to decrease with time.
A student's age in combination with her English proficiency also affected overall interest in learning English with computers. It was harder for some of the older students with low English proficiency to maintain an interest in computer-assisted language instruction.

Student Motivation to Learn English

Rubin (1979) notes that successful second language learning depends on at least three variables: aptitude, opportunity, and motivation. The important role of learner motivation in second language acquisition is well established in the literature (Gardner & Lambert, 1959; Ehrman & Oxford, 1995; Oxford & Shearin, 1994). Mastering a second language is a very difficult and lengthy process for most learners. Students not willing to dedicate themselves to such an effortful task will often give up before any real progress is made.

The ESL program in question was open-ended and attendance was completely voluntary- students were not sanctioned in any way if they did not attend class. Thus those students that made the effort to attend class were clearly motivated to do so. However, both teachers agreed that although all their students attended class on a voluntary basis, some of their students were more motivated to learn English than others. Consistent attendance on the part of the student was considered by the teachers as one of the strongest indications of whether or not a student was motivated to learn English.
Specific behavior in the classroom also signaled to the teachers high motivation on the part of a student to learn English. Alice noted that her more motivated students frequently asked questions in class and responded often to questions she asked of the entire class. They would also often volunteer information about their lives at home or at work to enrich the discourse they were trying to produce during classroom exchanges with the teacher or their classmates. Motivated students tended to "take charge" of discussions in small groups, a behavior Alice sometimes needed to monitor. Alice had also observed that her more motivated students frequently raised queries in class about English usage they had encountered outside the classroom.

Quoc added that lack of participation in oral exchanges in class was not always an indication to him that a student was not motivated. He had observed that often times new students were too shy to speak in class or contribute to discussions, but he could tell that they were motivated to learn because "their eyes are always upon me."

Students described by their teachers as highly motivated to learn English in the classroom were generally the most enthusiastic CALL users. These learners appeared to consider CALL an excellent opportunity to investigate the nature of the language they were intent on mastering. They were as dedicated to using and creating opportunities to learn English in the computer lab as they were in the classroom.
Mr. Phuc, a 58-year-old former political prisoner, was so motivated to learn English that he attended class twice a day, once in the morning ESL program and again in the evening for Alice's class. He was also one of the most avid CALL users in the program. Phuc had very poor eyesight, and would often sit with his face just inches from the computer screen to examine pictures or read text. Despite his vision problems, he never seemed to tire of the computers. One evening two of his friends, also former political prisoners, came to class to pick him up and take him to the funeral service of the family member of another former political prisoner. His friends tried to persuade him to come with them, but it was Phuc's computer night and he refused to leave the lab. Ten months into the project he responded on the third questionnaire administered in late February 1996 that the amount of time he worked in the CALL lab each week (about two hours) was still "not enough".

There were no data that would support the notion that students unmotivated to learn English through classroom instruction became motivated to learn English with computers. Neither teacher could recall a student who had appeared disinterested in the classroom suddenly come alive in the lab. Nor did we note any patterns of attendance that indicated that students who often missed class on non-computer days showed up more consistently on their computer days.
Language Level, Age, and Education of the Student

Generally students more advanced in their English language proficiency seemed the most interested in learning with CALL. The learners in the advanced class remained enthused about learning English with computers throughout the project period. The advanced class consisted of older and younger learners who varied considerably in educational background, including Mr. Nhan who had attended college in Vietnam and Mr. Ha who had not finished the third grade.

In the beginners' class, it was the more proficient Level Two learners who appeared most engaged in their CALL lessons. As discussed above, a few Level One learners became so turned-off by CALL that they refused to go to the computer lab anymore. Two of the three Level One learners who chose to remain in the classroom during their scheduled lab sessions were more than 49-years-old. (The third was in his early thirties and had less than 3 years of formal education.) Older, low English proficient learners generally exhibited the least interest in working with CALL of all the students in the program.

Although Level One students appeared the least enthusiastic about CALL, there were major exceptions to this observation. Students who entered the program with little or no English sometimes became very interested in CALL, such as Tri and his wife Lili, who were accountants in Vietnam. This couple asked many questions of the lab monitor in the lab and often preferred to remain in the lab.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
after their time was up, returning to class only when required to do so by the lab monitor. Previous education seemed to be an important factor in engaging and maintaining Level One students' interest in learning with computers. Most Level One learners had little formal education and often could not sustain an interest in a CALL lesson for more than forty minutes at any one time. However, those few Level One learners who also had a comparatively extensive education, i.e. they had graduated from secondary school in Vietnam, and were not of an advanced age seemed to "take" to the computers very well.

**Time in Program**

One measure of students' interest and desire in learning English with computers is the amount of time students indicated they would like to be in the computer lab each week. Three surveys were administered to the students during the course of the study (see Appendices A, B, and C). In each of these surveys students were asked the following question: "Presently the ESL program offers classes four evenings a week for a total of about nine hours of class time per week. About how much class time every week would you like to work on a computer?". Results are summarized in Table 4.6.

It would be incorrect to make a strictly longitudinal comparison of these data, as student enrollment varied so over time. Only seven students who completed surveys in
Table 4.6

Class Preferences for Computer Lab Time

<table>
<thead>
<tr>
<th></th>
<th>(May)</th>
<th>(July)</th>
<th>(February)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginners</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (hours)</td>
<td>4.42</td>
<td>3.00</td>
<td>3.40(^a)</td>
</tr>
<tr>
<td>SD</td>
<td>1.57</td>
<td>0.95</td>
<td>2.22</td>
</tr>
<tr>
<td>n</td>
<td>18</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td><strong>Advanced</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (hours)</td>
<td>5.00</td>
<td>3.73</td>
<td>2.92</td>
</tr>
<tr>
<td>SD</td>
<td>2.62</td>
<td>1.71</td>
<td>1.00</td>
</tr>
<tr>
<td>n</td>
<td>10</td>
<td>15</td>
<td>12</td>
</tr>
</tbody>
</table>

\(^a\) One beginner responded that he wanted to be in the lab 9 hours a week. If his response is not included, M becomes 2.78 with a SD of 1.09.

May and July were still with the program in February (their responses are listed in Table 4.7). Data presented in Table 4.6 are best viewed as "snapshots" of different groups of students' interest in spending time on the computers during the implementation process. Nevertheless, the data indicate that when the computers were first introduced and therefore were new to all the respondents, initial enthusiasm was high, especially among the advanced students. Although an individual student's general level of interest in CALL tended to decrease over time, it is important to note that at no time did any of the 56 students who responded to this...
question indicate a preference for less than two hours in the computer lab a week— which was the average amount of time students were scheduled to work in the lab each week throughout the study. Eventually, however, three low level beginners chose not to go to the computer lab at all. These students remained in the program for only a short period of time— less than nine weeks.

Table 4.7

Preferences for Time on Computers of Students Who Responded to All Three Surveys

<table>
<thead>
<tr>
<th></th>
<th>May</th>
<th>July</th>
<th>February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoa</td>
<td>8</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Ha</td>
<td>9</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Tan</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Ngoc</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Phuc</td>
<td>9</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Phung</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Thinh</td>
<td>5</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

M (hours) 5.86 3.86 3.14
SD 2.73 2.19 1.07
Range 6 6 2

Clearly a "novelty" effect is operative when students are first introduced to CALL. Alice described her students' early fascination with computers as the "dazzlement" phase. A teacher in the ESL program on the Westbank told me her
students appeared "addicted" to computers during their first few weeks of CALL instruction.

An incident which occurred in the fall vividly illustrates the type of intense interest and focused engagement CALL was capable of stimulating among students. On the evening of October 3 eight students from the advanced class were working in pairs in the computer lab. Although the air-conditioning for the apartment was on full blast, the lab was still quite warm and uncomfortable. The ceiling fan in the room seemed pointless as it was just pushing around warm, humid air. Students seemed oblivious to the discomfort, however, as they worked intently on their CALL lesson for the evening, which was a Rosetta Stone lesson on quantity relationships.

Approximately 40 minutes into their lesson at 6:50 p.m. there was a power failure in the neighborhood. The lights went out in the apartment and in homes up and down Gilbert Street. The computer users hardly seemed to notice, however. The battery back-up for the main server kicked in when the power failed, which enabled the computers to keep functioning. The computer users continued with their lesson as though nothing had happened. The lab was dark, the glow of color from the monitors was the only source of light in the building. The beginners class was dismissed for the evening. About 15 minutes later a power drain on the server caused a warning beeper to alarm. At that time the lab students reluctantly agreed to go home.
Compatibility of Partners

Because there were only five PCs available during the first 6 months of the study, a student often had to sit with another person at a computer terminal when it came time to work in the lab. How a student ended up working with another student in the lab varied. Often students mutually chose to sit together, at other times the lab monitor paired students. Sometimes it just depended on when one arrived to class (a few students regularly missed the first half hour of instruction due to their work schedules). A latecomer would often have to take the only available seat.

Early in the research project student interactions in the computer lab became a salient feature of the study. Throughout the study I recorded my impressions and observations of students working together in pairs at the computers and asked the teachers and the lab monitor for their impressions of the nature of group work in the lab. Additionally, three pairs of students were videotaped and six pairs of students were audiotaped working together on CALL lessons. I reviewed the videotaped lessons to search for general patterns of interaction, but as the sound quality was so poor these were not transcribed. The audiotaped lessons were transcribed word-for-word. Analysis of data on student interactions in the computer lab pointed clearly to the following general conclusion: Being comfortable with one's partner and the mutual respect of
each partner's abilities was an important factor in the quality of the lesson that resulted when two people worked together at the computer.

Students who worked well together appreciated each other's input and no one person dominated the lesson. Such collaboration seemed to contribute to maintaining both partners' active interest and enjoyment in the lesson. When a program required a response, "good partners" would briefly confer with each other as to the appropriate choice. If their chosen answer proved wrong, they would often laugh and confer again before attempting another response. Good partners approached a lesson very seriously, but were able to maintain a sense of lightness about the decisions they made together—humor seemed important. If one team member had insisted on an answer that proved to be wrong, the student who chose incorrectly would often laugh and apologize good-naturedly while the other partner smiled in an understanding way. Good partners shared control of the program. If one partner assumed the role of typing, the other would operate the mouse. Later in the lesson they would often switch roles.

Most students seemed comfortable with a variety of partners: men with women, same gender pairs, and older persons with younger persons. Occasionally a bad combination would result, however.

Two former political prisoners who enrolled in the advanced class at the same time in June seemed like a
natural team, but they ended up often arguing over who was to control the mouse and once one member of the team was seen angrily pushing away the other's hand. They soon "broke up" and began sitting with two young women in their early thirties—sisters—who had never chosen to work with each other.

The two new dyads ended up almost always sitting together and developed cordial working relationships. The young women were more comfortable with the mechanical aspects of operating the computers, and usually did the typing for exercises requiring word processing. Their partners would often recite out loud what was to be typed and controlled the mouse. Although in these cases the two women appeared more in control of the operation of a lesson, they would often defer to their older male partners, whom they addressed as chu (meaning uncle who is younger than one's father) regarding responses to language exercises. Thus their partners felt that their input was valued and that sharing was going on.

The lab monitor believed one of her most important tasks was to see that students were paired appropriately. After the program was underway, the lab monitor or the teacher made sure that new students would at least initially be paired with students who were more experienced users and who worked well with new students. Some students, especially new students in Quoc's class, appeared too willing to relinquish control of the lesson to their
partners, although often the new students seemed to prefer their more passive roles. After a few weeks in the program students learned with whom they worked best and often chose to sit with the same person, especially in Alice's class where students attended on a more consistent basis and enrollment of new students occurred less often.

On the second survey administered in late July students were asked to list the three persons in their class they most preferred to have as a lab partner and to explain why they chose those people. Explanations for students' choices fell roughly into two categories—English language ability and personality. About half the students said their choices for lab partner were based on these students' superior knowledge of English or because they shared an equal knowledge of English as the respondent. For other students the personality of the lab partner seemed more important— they explained that the persons had listed were their friends, were more "willing to help" the respondent, or that they were "understanding".

**Working with a partner vs. working independently.**

On the second survey students were asked if they preferred to have a computer to themselves or if they preferred to have a partner, and to explain their choice. In Alice's class 12 students said they preferred to have a partner, and 4 indicated a preference for working alone. In Quoc's class, 8 students indicated a preference for sharing, whereas 3 students said they wanted to learn by
themselves. Reasons for wanting to work with a partner centered on how a partner could help the student, either with unfamiliar words or the operation of the program, and echoed responses as to why students chose certain partners: "When we learn together, my partner can help me with the terms I don't know"; "both people can... help each other, exchange ideas, and point out the good results to each other"; "Sometimes there is just a small problem and we don't want to lose time waiting for the teacher to come over." The few students who admitted they preferred to have a computer to themselves felt they could learn more quickly or have "more freedom" if they did not have to share. One student found it motivating to have a partner as it created a situation where he could "compete" with the other student on listening tasks.

On October 17 two more computer terminals were added to the network to make a total of seven computer stations (four PCs were located in the original lab and three in the counselor's office next door).

Throughout the study Quoc chose to send his Level Two students to the lab for the first hour of instruction on his computer nights, and his Level One students the second hour. After the network was enlarged Alice chose to have all her students work in pairs on the computers during the first hour of instruction on her computer nights. She would then work with the entire group in the classroom for the remainder of the evening.
By October attendance in Quoc's class had dropped to a level where there were enough computers for most of his students to work on their own when it came their time to go to the lab. It then became rare to see students working in pairs in Quoc's class, with the exception of older Level One learners who almost always worked with another Level One learner.

On the third student survey administered in late February students were again asked if they preferred to work alone or with a partner at the computer. Responses to this question from the second and third questionnaires are summarized in Table 4.8. In Alice's class 10 students indicated that they would prefer to have a partner, 2 replied that they would prefer to work alone (one of the two preferring to work solo had recently graduated from Quoc's class to Alice's). In contrast, the majority of the students in the beginners' class- 6 students- replied that they preferred to work alone at the computers, and only 4 students indicated a preference to share. Quoc's most advanced student, Mr. Do, wrote that he liked both ways: "This is a hard question because I would have more times for myself if I have a computer to myself, but there is no one to discuss with."

Although most students in Alice's class indicated on both surveys they preferred to have a partner, certain behavior contradicted their survey responses. Soon after the network was enlarged in October I heard students in
Alice's class request to work by themselves on the computers that were not being used in the counselor's office. Also, when students from the advanced class walked into the lab on nights when attendance was low and there were enough computers to go around, most did not "pair up" unless requested to do so by their teacher.

Table 4.8

<table>
<thead>
<tr>
<th></th>
<th>Work Alone</th>
<th>Work with a Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>July</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beginners (n=11)</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Advanced (n=16)</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td><strong>February</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beginners (n=10)</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Advanced (n=12)</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

*aOne student in the beginners' class in February responded that he liked "both ways". His response is not included here.

In July students in both classes had little choice regarding working alone or with a partner as the student-to-computer ratio at the time usually dictated that a student had to share a terminal with another student. The Vietnamese culture places strong value on harmony and respecting the wishes of authority figures such as teachers, who are highly revered in Vietnamese society. I believe one reason many students from both classes in July
and most students from Alice's class in February said they wanted to share a computer with another student is because respondents might have felt to say otherwise would have been seen as selfish by their classmates and disrespectful towards their teacher given the seating situations they were faced with in the computer lab.

Most students in the program in late July when the second survey was administered had been exposed to CALL for only about eight weeks, therefore CALL was a relatively new phenomenon for all these respondents. It appeared to the staff and myself that students desired to work with a partner when they were new to CALL. Learning how to operate the computer with another student seemed to lower the stress level and make mastering basic computer functions more fun and less frustrating. However, after a minimal level of computer proficiency was achieved, students often seemed to prefer working alone.

In February the respondents from the beginners' class had been working with computers an average of 20.8 weeks. Perhaps by this time students had "outgrown" the benefits of working with a partner. Coupled with the knowledge that the choice to work alone would not generate conflict- as there were enough computers for everyone and their teacher did not require that they work in pairs- may explain why most of the beginners therefore opted to have a terminal to themselves.
Several explanations of these somewhat contradictory data are possible. Regardless, when students were required to share a computer they appeared to enjoy the lesson and become more engaged in CALL activities when they were paired with people with whom they got along well.

The case of Trung.

A development in early June alerted me to some of the subtle dynamics that were occurring when students chose their partners and the importance of a student feeling comfortable in a collaborative learning situation. One of the slower students in Quoc's Level One group, Mr. Trung, stopped coming to the lab approximately seven weeks after the computers were introduced to the program. I was surprised to learn of this development, as he had appeared to enjoy working on the computers.

Trung was 24-years-old and not well educated. He could barely read and write in Vietnamese, and appeared shy and bashful when it came time to select a seat in the lab. Five weeks into the project the man he usually sat with in the lab, another low level beginner, took a night job and quit coming to class. I suspected that something about the social dynamics of how people chose their partners might have affected Trung's decision not to come to the lab.

In early August when attendance had tapered off in the beginners' class Quoc sensed that Trung might be ready to give the computers another chance. Quoc allowed Trung's little brother, who had been attending class with his older
sibling, to sit with Trung in the lab. Both Trung and his
brother had big smiles on their faces that night as they
worked on an English Express lesson. Trung had remembered
quite a bit about how to operate the program and was able
to instruct his little brother on its use.

A few weeks later I requested that the Refugee Social
Services counselor, who also assisted me as an interpreter
for the study, question Trung as to why he had stopped
coming to the lab. My earlier suspicions were confirmed
when Trung informed the counselor that he did not like how
people "fought" to get to the computers when there were not
enough terminals for everyone, whereas now he was
comfortable coming to the lab as there were less people.

I imagine that when it came time to decide who was to
sit with whom in the computer lab Trung must have felt like
the last kid chosen to play on a softball team. Rather than
endure that embarrassment, he simply chose to remain in the
classroom.

Student Views on How Computers Help Them Learn English
Helpful Computer Features/Characteristics

Throughout the study students were asked in surveys,
interviews, and focus groups how they thought the computers
were helping them to learn English. Quite often students
responded that computers were helping them by making
learning easier or faster. Explanations of how the
computers accomplished this varied.
Students frequently said they enjoyed seeing the pictures and then hearing and/or seeing words and phrases at the same time. If they could not understand the meaning of a new word or phrase, they felt they often could derive the meaning from the contextual clues provided by the picture. A 21 year-old advanced student who was with the program throughout the project period explained in November, "I am learning English faster [with computers] because I can hear and see the words, too... It is easier to remember because I can hear the word, see it, and see the picture at the same time." A beginner explained, "I think the computer helps me tremendously... The computer helps me put words into use by using the same word in more than one sentence. The computer has illustrations to help me figure out some of the words that I don't know. It also helps me to remember easier with its illustrations." Said an advanced student, "I like it when the computer pronounces a word, but I don't understand it. Yet, when I look at the screen, I can figure out what it means."

Another way students felt computers were helping them to learn English was by enabling the user to hear and repeat the sound of a word or phrase over and over again until the student understood what was being said. A beginning level student commented, "I like the [computer] voice because I can hear it accurately. I can hear it over and over again many times, until I understand the word. Then I pass to the next word."
The ability to control the pace of the lesson was appealing to students, especially Mr. Phuc, one of the most enthusiastic computer users in Alice's class. He commented, "With a computer, I can control its pace. When I want it to go slowly, it goes slowly, then when I want it to go fast, it goes fast..."

On the third questionnaire administered to students in late February, I listed six of the features/characteristics of learning English with computers that the students themselves had mentioned in previous questionnaires and interviews as being helpful in learning English (see Appendix C). Students were asked to rank these features/characteristics from one to six, with one being the feature/characteristic the student thought the most helpful in learning English and six being the feature/characteristic the student thought least helpful. Student rankings were then converted to scores and averaged (the rank of 1 received a score of 6, a rank of 2 received a score of 5, etc.). Results\(^2\) are summarized in Table 4.9.

\(^2\) All 12 advanced students attending class at the time completed the ranking tasks included in the third questionnaire, but only 9 of the 11 beginners were able to do so. My bilingual researcher explained to me that the idea of ranking items was very foreign to the students, and that he had never encountered anything like it before coming to the U.S. as a teenager. Although instructions had been given both orally and in writing in Vietnamese, the two non-respondents in the beginners' class still were confused by the task. When I returned to class to ask them to attempt again to complete the ranking tasks included in the third questionnaire, this seemed to embarrass them, so I did not pursue this further. However, I do not think their lack of response had a significant effect on the
Students in the advanced class ranked first "pictures are shown with the sound and spelling of a new word or phrase." This feature of CALL was a close second for the students in the beginners' class. Research by Reid (1987) indicated that second language students from certain Asian language backgrounds, including Korean and Chinese, preferred a visually oriented learning style. The frequency by which students in this study mentioned the positive value of learning with pictures and these survey results suggest that visual learning may be a preference for Vietnamese students as well.

It is important to note how differently the advanced and beginning students ranked their preference for using typing to reinforce learning. (The dictation mode within Rosetta Stone requires students to type what they have just heard, any mistakes are highlighted on the screen.)

In interviews and surveys the advanced students often mentioned how they enjoyed typing. Ms. Hoa, a student in the advanced class, commented, "Learning English with a computer is better because when I type, I can remember those words in my head longer."

In contrast, beginning level students often seemed frustrated by having to type sentences that were dictated by the computer. A beginner explained in an interview, "The results of the ranking tasks as I do not see a relationship between why a student would not respond to a ranking task and how a student might evaluate computer features or skill areas helped most by CALL."
Table 4.9
Student Ranking of Features/Characteristics of CALL Programs According to Helpfulness in Learning English

Beginners (n=9)  

<table>
<thead>
<tr>
<th>Rank</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>4.78</td>
<td>1.92</td>
</tr>
<tr>
<td>3</td>
<td>3.33</td>
<td>1.50</td>
</tr>
<tr>
<td>4t</td>
<td>2.78</td>
<td>1.20</td>
</tr>
<tr>
<td>4t</td>
<td>2.78</td>
<td>1.30</td>
</tr>
<tr>
<td>2</td>
<td>4.67</td>
<td>1.50</td>
</tr>
<tr>
<td>6</td>
<td>2.67</td>
<td>1.73</td>
</tr>
</tbody>
</table>

Advanced Students (n=12)  

<table>
<thead>
<tr>
<th>Rank</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3t</td>
<td>3.08</td>
<td>1.83</td>
</tr>
<tr>
<td>5</td>
<td>2.75</td>
<td>1.36</td>
</tr>
<tr>
<td>6</td>
<td>2.58</td>
<td>1.44</td>
</tr>
<tr>
<td>3t</td>
<td>3.08</td>
<td>1.56</td>
</tr>
<tr>
<td>1</td>
<td>5.25</td>
<td>1.21</td>
</tr>
<tr>
<td>2</td>
<td>4.25</td>
<td>1.42</td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
program that I have to type and retype to see if it is correct or not wastes a lot of time. When I miss just a period, or a small mark, I have to start all over again."

The lab monitor noted in February that all the beginners in the program at that point in time simply refused to use the dictation mode. Despite repeated instruction from her on word processing, beginning level students still seemed confused over how to go about it. Perhaps because their English proficiency was so low and the computer and how it works so new, expecting these students to perform word processing in conjunction with learning a new language was simply too much new information to handle at once.

In the same survey students were asked to rank from 1 to 4 the English language skill areas helped most by CALL (see Table 4.10). Here both classes ranked "listening" as the skill area which benefitted the most by studying English with computers. I believe this result was to be expected, as both classes were using basically the same programs, which were chosen by the administrator in large part because of the way they emphasized listening skills. Nevertheless this finding pleased me, as it indicated we had met our objective in providing students support in the skill area that they frequently complained was their weakest and which was critical to their achieving survival level English.
<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Beginners (n=9)</th>
<th>Advanced (n=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank</td>
<td>M</td>
</tr>
<tr>
<td>Speaking</td>
<td>4</td>
<td>2.22</td>
</tr>
<tr>
<td>Reading</td>
<td>2</td>
<td>2.67</td>
</tr>
<tr>
<td>Listening</td>
<td>1</td>
<td>2.78</td>
</tr>
<tr>
<td>Writing</td>
<td>3</td>
<td>2.33</td>
</tr>
</tbody>
</table>

It is interesting to note that the beginners ranked speaking skills as the skill area helped least by the computers, whereas students in the advanced class ranked this as the language skill area helped second most by the computers. As noted earlier, the lab monitor and I had observed that the beginners tended to repeat out loud what they were hearing with the computers more softly and less frequently than the advanced students. Delayed oral production has been identified as an effective metacognitive learning strategy for beginning level language learners (Chamot & O'Malley, 1984). These survey results and observations suggest that the beginners in this study were not yet ready to take advantage of CALL features that facilitate practice in learning speaking skills.
How Students Compared Classroom and Computer Learning

Findings from focus groups and questionnaires.

In order for me to further understand how students were experiencing CALL, towards the conclusion of the study students were asked in focus groups and on the final questionnaire to describe how learning English in the computer lab was different than learning English in the classroom. (I was also hoping to gain from this line of inquiry some insight into whether students perceived their roles as learners any differently as a consequence of their exposure to CALL. This issue will be addressed in the next section of this chapter.)

Three students in the beginners' class responded to this question by noting how closely CALL was linked to their learning in the classroom, whereas a direct connection between classroom and computer learning was not mentioned by students in the advanced class. Among the beginners, Mr. Doa, a 47-year-old former political prisoner who joined the program in November, said, "When we use the computers and see the words that we have learned in class, we can remember those words easier. The computer works as a reminder." Van, a 52-year-old former political prisoner who also joined the program in November responded in a focus group that "the computers are making our learning easier because when the teacher teaches a sentence in class, and we have not grasped it, then there are sentences on the computers that help us understand." Mrs. Bich felt she
"gained a lot" when she first learned a lesson in class, and then reviewed a similar lesson in the lab. On the third questionnaire she wrote that "the lab supplements the lessons from the class." The beginners seemed to enjoy and appreciate the reinforcement they were receiving in the computer lab. In the words of one student, "I can learn at many different angles."

A major focus of learning in the beginners' class was new vocabulary. The way CALL was used in this project appeared to complement the fulfillment of that objective. Quoc was almost always able to assign a CALL lesson that included vocabulary he was teaching in class. Often his students would bring questions about a CALL lesson to the classroom, and he would frequently review word lists and dialogs from CALL exercises in the classroom. Quoc's students thought it would be difficult to learn new vocabulary on the computers if a similar lesson was not also being taught in the classroom.

Students in both classes described the teacher as uniquely capable of providing explanations, especially about grammar usage, whereas the computers made possible more listening practice. Said Mrs. Bich, "I have learned a lot of grammar in the classroom, but I don't know what people are saying when they talk. The computers help me learn how to hear what is being said." Another student from the beginners' class, Miss Chau, explained, "I like both [learning English in the classroom and the computer lab]
because the computer is very useful, but I don't understand a lot of English. So I have to ask Mr. Quoc to explain to me. And I can learn grammar in a classroom, too. Both methods are great." A student in the advanced class wrote "the teacher can teach, assist, and correct us directly, and they can help us with real communication", whereas computers "help me learn how to use new grammars, spelling, and sentences, etc."

Mr. Van said that sometimes it was hard for students to understand what was being taught in the classroom because "there are different levels in the class, but the teacher is teaching at a normal pace." Students rarely indicated that they found a CALL lesson difficult to understand, however. I believe a major reason for this was because the programs selected for use in the project were at an appropriate level of difficulty. The comprehensible input provided by the CALL lessons appeared just beyond students' level of competency, i.e. Krashen's i + 1 (1985), in one way or another, so that students were constantly challenged by their CALL lessons, but the challenge was within their range of abilities to meet. Another reason that students rarely complained of being lost in a CALL lesson was that students could control the pace of a CALL lesson. If they could not understand what they heard the first time, they could listen repeatedly and/or obtain additional information by examining more closely the accompanying picture or text, moving on only when they were
ready to do so. In Ms. Anh's words: "The computer helps me learn according to my pace and ability." Said Mr. Phuc, "I have more control over the lessons that I am learning in the computer lab, but the teacher has control over the lessons in the classroom."

Generally the responses from the questionnaires and focus groups indicated that students found CALL to be a worthwhile addition to the ESL program in Versailles Gardens. However, the learning that took place in the classroom with the teacher was still considered by students as the core to their learning English in the program. Mr. Dung provided a uniquely Vietnamese explanation of this in a focus group, "Learning English in the computer lab also helps us, but it's more like having a different meal. It has a different method of learning, but it cannot be compared to learning in the classroom where there is a teacher available."

RSD findings.

The Robustness Semantic Differential (RSD) was developed by Licata and Willower (1978) to assess variation between and among learning environments in educational organizations. It is composed of 10 bipolar pairs of adjectives which discriminate dramatic content. The RSD is based on the theoretical framework developed by Irving Goffman (1963, 1971) in which social interactions are understood in terms of theatrical analogies.
On the third questionnaire students were asked to complete three RSD using three different target objects: learning English in the computer lab, learning English by studying at home, and learning English in the classroom. A five-point scale was used with the ten pairs of bipolar adjectives. Scores for a particular target object could range from 10 to 50 points, with a higher score indicating greater robustness of the concept. The form used to assess attitude towards learning English with computers is shown as an example in Figure 4.1.

Learning English in the computer lab is:

- boring ______ ______ ______ ______ interesting
- fresh ______ ______ ______ ______ stale
- meaningless ______ ______ ______ ______ meaningful
- important ______ ______ ______ ______ unimportant
- usual ______ ______ ______ ______ unusual
- powerful ______ ______ ______ ______ weak
- passive ______ ______ ______ ______ active
- thrilling ______ ______ ______ ______ quieting
- uneventful ______ ______ ______ ______ action-packed
- challenging ______ ______ ______ ______ dull

Figure 4.1

Robustness Semantic Differential

Anticipating that the respondents had most probably never before completed a semantic differential questionnaire, students were provided an example of how to
use a semantic differential scale using a non-threatening target object they were all familiar with and about which opinion varies greatly in the Vietnamese community. The sample target object was a particular shrimp sauce called *mom tam*. (See the questionnaire in Appendix C for an exact translation of the instructions.) The results of the RSDs are summarized in Table 4.11.

Table 4.11

**Mean RSD Concept Scores by Learning Group**

<table>
<thead>
<tr>
<th></th>
<th>Computer</th>
<th>Home</th>
<th>Classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginners n=8</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>41.75</td>
<td>33.62</td>
<td>43.00</td>
</tr>
<tr>
<td>SD</td>
<td>3.62</td>
<td>10.78</td>
<td>4.87</td>
</tr>
<tr>
<td>%Max.</td>
<td>83.50</td>
<td>67.25</td>
<td>86.00</td>
</tr>
<tr>
<td><strong>Advanced n=12</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>40.42</td>
<td>26.08</td>
<td>43.25</td>
</tr>
<tr>
<td>SD</td>
<td>5.90</td>
<td>8.58</td>
<td>4.79</td>
</tr>
<tr>
<td>%Max.</td>
<td>80.83</td>
<td>52.17</td>
<td>86.50</td>
</tr>
</tbody>
</table>

Note. Maximum possible score for each concept is 50. %Max. = M/Maximum Possible Score.

Generally we can see that students in both learning groups tended to perceive the classroom and the computer lab as robust learning environments, with the classroom
being somewhat more robust for both groups. The results of the RSDs and other data gathered in this study support the conclusion that students came to view the CALL innovation as a valuable component of the Versailles Gardens ESL program.

It must be noted, however, that four students attending the beginners' class when the third questionnaire was administered did not complete the RSDs. Despite instructions from the bilingual research assistant as well as their teacher, these students still seemed bewildered about how to respond. Rather than embarrass or confuse these students more, I did not pursue their completion of this questionnaire item. Results, therefore, may be skewed by their lack of response as one could reason that students who could not complete a semantic differential might evaluate less positively a learning environment, such as a computer learning laboratory, that (at least initially) is more complex than a classroom learning environment.

Non-directional t-tests were performed to determine if there were significant differences between concept scores for the two learning groups. Differences in scores between the two learning groups for all three concept scores were insignificant at the .05 level. These results support the conclusion that at the particular point in the implementation process that the RSDs were administered (late February) the beginners found the computer lab as robust a learning environment as students in the advanced
class. A "novelty effect" may have effected results for the beginners' class, however, as several beginners were relatively new to CALL.

Seven of the 12 respondents in the advanced class had been working with CALL since the inception of the project in April 1995. In contrast, most of the respondents in the beginners' class were relatively new to CALL- 5 of the 8 respondents had been with the program less than 3 1/2 months. It is probably significant that the two groups evaluated computer learning as equally robust, given that most students in the advanced class were far beyond the "dazzlement" phase described earlier.

Do Students' Perceptions of Their Roles as Learners Change As a Consequence of Using CALL?

This is perhaps the most intriguing yet most illusive research question I brought to the study. Previous research has shown that computer-assisted instruction may be structured to promote cooperation and peer teaching (Johnson & Johnson, 1986; Chang & Smith, 1991; Dickinson, 1986). In this study students in Alice's class appeared to work more cooperatively in the classroom as a consequence of working with partners during CALL lessons. Learning in a computer environment involves a certain amount of risk-taking and experimentation. Does this risk-taking in the computer lab carry-over to students finding themselves more willing to take risks with their new language in other environments? With a computer the teacher is no longer the
focus of students' attention. Technology rich learning environments present learners with variety of choices. Dwyer, Ringstaff, and Sandholtz (1991) observed that school children in a technology intensive classroom improved in their ability to learn on their own. Healey (1993) suggests that the self-directed learning that occurs in a technology rich learning center may possibly be internalized for later use in other language learning situations and warrants investigation.

Although research suggests that computer-assisted instruction can affect change in learning behavior and the social dynamics of learning environments, I was particularly interested in exploring if the students themselves perceived any changes in their roles as language learners as a consequence of CALL.

Unfortunately I was not able to gather much information from the student's point of view regarding this issue. I had hoped to get at changes in students' perceptions of their roles as learners by asking students how they found learning in the classroom different from learning in the computer lab. Two students mentioned during interview sessions that they felt "more independent" in the lab. However, when other students were asked if they too felt more independent in the lab, they either denied this or evaded the question, I believe largely because they perceived that saying they were more "independent" would
have been seen as disrespectful or defiant of the teacher's authority.

Perhaps the methodology I employed to try to answer this question was inappropriate. After my first few unsuccessful attempts at interviewing students with the assistance of the bilingual research assistant, I decided to recuse myself from student interviews for reasons mentioned in the Methodology section, i.e. it was awkward for the bilingual research assistant to have to translate back and forth from English to Vietnamese and students seemed intimidated by me asking them questions. However, when information on students' roles as learners did not emerge from interviews and the focus groups sessions, I re-evaluated the situation and chose to participate in interviews again so to explore in more depth the subtle idea of how students' roles as learners might have changed through the course of the study.

Unfortunately, I found it very difficult to get students to talk about their roles as learners. Perhaps again the social setting and dynamics of the interview situation worked against spontaneity. Notwithstanding, I came to feel that the larger reason was that students in the program were not of the mindset where they could self-consciously articulate on the underlying meaning of their language learning behavior. In an in-depth study of language learning strategies Rubin (1981) reported gaining the most insight from sophisticated second language
learners. Perhaps learners in this study had not yet achieved the requisite level of analytical sophistication needed to explore this issue in depth in an interview situation. On the other hand, maybe I simply did not ask the right questions.

Upon further reflection I also came to see that it would be very difficult to ascertain how students' felt their roles as learners changed as a consequence of CALL without the researcher having a more thorough understanding of the subjects' language and culture than I did. An analysis of the shifts in power and control that role change suggests would probably require a subtle understanding of status relationships in the Vietnamese culture, a dissertation in itself.

I over-reached my grasp with this question and was not satisfied with the data I collected. Therefore, I will have to leave the important question if students' perceptions of their roles are changed as a consequence of CALL unanswered here.
CHAPTER V
CONCLUSION

Summary of Findings

This was a qualitative case study that examined the implementation of CALL in an ESL program serving adult refugees and immigrants from Vietnam. The project site, located in the heart of one of the oldest Vietnamese communities in the United States, was known as the "village school" (truong lang) among community members. This case study consisted of two sub-cases: implementation of CALL in the beginners' class and implementation of CALL in the advanced beginners' class. The investigation of the implementation of CALL in the ESL program in Versailles Gardens, which lasted almost 11 months, was intense and holistic. The researcher was also the administrator of the refugee program.

This study was guided by questions I brought to the field as well as certain questions that took shape as fieldwork was on-going. The research methodology used was largely qualitative in design, so that an emic understanding of how the innovation impacted the actors and brought about change in the learning environment could be constructed. Three main areas of inquiry emerged as I strove to understand the case, which can be grouped according to issues having to do with the following: implementing CALL; teaching with CALL; and learning with CALL. In each of these areas the main focus of inquiry
became the perspective of one of the three groups of actors who composed the case, i.e. the administrator, the teachers, and the students, respectively.

Sergiovanni (1991) advises that the "engines of change" be experimental. The approach taken to implementing CALL in the ESL program in Versailles Gardens was highly experimental. Very few ESL programs serving adult refugees use computers to teach English. Many unknowns faced us at the beginning of the project which could only be answered through interaction with the context of practice, such as: How should CALL be used in our program?; Will our students like studying English with computers?; Which software is appropriate for our learners?; Will users sustain an interest in CALL? Throughout the course of the investigation the teachers and I strove to understand the best use of the innovation given the open-entry/open-exit structure of our program, the wide range of English proficiencies within the two classes, and the complete lack of prior experience with computers on the part of our students.

As the administrator I did my best to create a supportive environment where teachers felt comfortable to explore various applications of CALL. The implementation process became a tremendous learning experience for us all. In the following section major findings of this case study are summarized and briefly discussed.
Implementing CALL

Numerous problems and barriers, large and small, had to be overcome to get the innovation in place and operational. Much time and energy on my part was then required to shepherd its adoption and continued use. During the implementation process I assumed several new organizational roles involving the coordination of the target system. My active, hands-on approach to implementation led to the smooth coordination of most of these duties.

The first barrier facing implementation was an obvious lack of resources. I researched the proposed innovation, wrote the grants that provided the funding for the project, and then played an active role in allocating resources that supported use of the innovation throughout the project period. I found that the insight I was gaining through the research I was conducting also enabled me in my role of program administrator to respond quickly to problems that emerged as the innovation took shape. In response to the concerns the two project teachers expressed about the innovation I developed organizational conditions that supported their efforts to better integrate CALL into their teaching, such as revising Alice's computer schedule to allow her more time in the CALL lab, improving communication through lab report forms and dialog journals, hiring an experienced ESL teacher as lab monitor, and modifying and enlarging the computer lab so that use of
CALL became less difficult to schedule. I was able to offer workshops as they appeared needed and in the early days of the project provided on-going assistance and support to the students in the computer lab.

From my position as program administrator as well the change agent intent on implementing the innovation, I had both the power and the will to allocate resources and develop organizational conditions to support the innovation's adoption and continued use. I believe my admitted self-interest in seeing the innovation through ultimately contributed to its successful implementation in the program.

As I write this conclusion almost 20 months after the computers were installed at the Versailles Gardens Community Office, CALL continues to be a much utilized and integral part of instruction provided by the ESL program. It is safe to say that the innovation has reached that stage in the implementation process known as "institutionalization", i.e. the innovation has become a regular feature of the organizational setting of the Versailles Gardens ESL program and its day to day use is no longer viewed as something new or different (Van Hees, 1987).

Part of the credit for reaching institutionalization must go to the teachers and myself who were, or became, committed to seeing that CALL "fit" the program. However, a major reason that CALL has become such an important part of
instruction in the program has to do with the innovation's pedagogical qualities. The software and hardware selected for use in this study provide students with many opportunities to practice and receive feedback on performance in a highly motivating environment. With the computers students can explore and take risks with their new language in a private, non-threatening workspace. The computers allow the students to control the pace and focus of their learning. In short, CALL has lived up to its promises.

**Teaching with CALL**

An attribute of computer-assisted learning that is frequently cited is the opportunity it affords students to focus on individual needs and deficiencies. CALL appeared to allow for more individualized instruction in the computer lab. The way it was used in this case study also enabled more individualized instruction in the classroom as well.

The teacher for the beginners' class consistently chose to split his multi-level class on his computer nights by ability level. He particularly enjoyed the opportunity to work with his very low level beginners in the classroom while his more advanced students were engaged with CALL in the lab.

The teacher for the advanced class, on the other hand, structured CALL use quite differently than the beginners' teacher, in order to complement a teaching objective she
strongly believed in: collaborative learning. We shared the opinion that the collaborative learning that she encouraged in the computer lab, by always assigning students partners and instructing them to work cooperatively, in turn affected the climate of learning in her classroom. Throughout the study her students appeared to become progressively more comfortable and proficient at working in small groups in the classroom.

CALL seemed to have a greater impact on how the less experienced of the two teachers went about teaching and how she felt about herself as a teacher. The utilization of CALL twice a week helped to impose a structure on her lesson planning that was lacking and that she welcomed. She felt her mastery of the CALL programs made her a more resourceful and effective teacher, and believed her students respected her more when they realized she was also computer proficient.

Both teachers felt that CALL enriched the ESL curriculum and expanded their instructional resource bank. Nevertheless, the innovation was mainly an "add-on", and did not result in any major changes in how they taught English. Both teachers used CALL selectively, largely to reinforce concepts being taught in the classroom. However, major changes in the logistics of learning were required to accommodate the scheduling of computer lab sessions.

It became clearer to me as the project progressed that careful lesson planning grounded in established second
language learning principals was necessary to make the most effective use of the CALL. I also realized that when preparing teachers to use CALL, especially those new to the profession, I needed to attend more to the development of their understanding of how a second language is learned, and to incorporate such training into the CALL workshops.

Learning with CALL

This study attempted to understand the impact of CALL on learning English from the point of view of the student. A major finding of this study was that most of the students served by the Versailles Gardens ESL program, who were adult refugees and immigrants from Vietnam, enjoyed working with computers and believed that CALL helped them learn English by making learning "faster" or "easier". A feature of the CALL programs that students found particularly helpful was being able to repeat the sound of a phrase or word until the user understood what was being said by the computer. Students also felt they were often able to derive the meaning of new language from the contextual clues provided in the pictures and/or text that accompanied aural output from the computer. Whereas the advanced students found the dictation exercises very helpful in reinforcing learning, the beginning level students often found learning tasks involving typing frustrating and pointless.

Several factors played a role in engaging and maintaining student interest in working with CALL. Students who sustained an active interest in working with CALL
throughout the project period were generally highly motivated to learn English and were more advanced in their English proficiency. However, those few low English proficient students who had comparatively advanced educational backgrounds tended to like learning with computers very much.

A student's age in combination with her English proficiency also affected overall interest in learning English with computers. It was particularly difficult for older students (age 50 and above) with low English proficiency to maintain an interest in computer-assisted language learning, regardless of their educational backgrounds. Yet older students more advanced in their English proficiency (Level Three or Four learners) were some of the most enthusiastic CALL users in the program.

There were no data that would support the notion that students unmotivated to learn English through classroom instruction became motivated to learn English with computers.

For any particular lesson the compatibility of one's CALL partner was important in maintaining a student's active involvement in the lesson for the entire lab period. Students appeared to prefer working with a partner when learning with computers was a new experience for them. As their comfort level with the computers increased, students often opted to work alone unless asked to pair up by their teacher. An exception to this observation were the older
low level beginners, who often sought out a partner in the lab.

A "novelty effect" was clearly operative when students were first introduced to CALL. Many students appeared "dazzled" by the computers in the early weeks of the project and often complained they desired more time with the computers. Although students' overall interest in learning with computers tended to decrease with time, CALL still appeared to sustain the interest of most students in the program throughout the project period, especially students in the advanced class.

When asked to compare learning English in the computer lab and learning in the classroom, students indicated that they found the teacher as uniquely capable of providing explanations. Although analysis of the Robustness Semantic Differential indicated that students found learning in the computer lab almost as "robust" as learning in the classroom, it was clear that students considered the instruction they received from their teachers as the core to their learning English. They believed the computers served to supplement or reinforce learning in the classroom, and found the computers particularly useful in providing practice on listening skills.

Recommendations Regarding Effective Implementation Strategies

One of my original research questions asked, "What strategies regarding teacher training, selection and
introduction of new software, and scheduling computer use prove effective?" Although I hesitate to generalize beyond the time and context of this particular case study, I nevertheless believe that the successes and shortcomings of this project may provide valuable lessons to other ESL professionals considering CALL for use in their refugee language programs. The lessons we learned in this case study regarding teacher training, software selection, and scheduling computer use are summarized below in the form of recommendations.

Teacher Training

Firstly, teachers should be adequately trained in CALL use up-front and allowed to achieve a high comfort level with at least one major software program before the innovation is introduced to their students. I probably could have avoided the problems of Quoc's initial anxiety or Alice's early resistance to CALL if I had not been so eager to get the project rolling.

Secondly, from the inception of the project teacher training should have a strong focus on providing teachers with the teaching skills needed to integrate the kind of learning that is provided during a CALL lesson into classroom instruction. It is particularly important that this be done in programs which employ individuals new to the ESL teaching profession, which is often the case in refugee services programs.
Teacher training should first involve the project team analyzing the primary type of instruction provided by a CALL program. For those programs that focus on listening skills, for example, teachers should be taught (or reminded to use) techniques to prepare students for listening tasks as well as how to design task-based listening activities for use in more open-ended CALL programs.

A major curricular objective for the ESL program examined here was teaching students the vocabulary of everyday life in the U.S. To make the most effective use of CALL vocabulary software, teachers need to first develop their understanding of how vocabulary is learned. They then should be provided with explicit techniques and strategies to teach vocabulary. Teachers should be taught and encouraged to use such teaching skills at the same time they are being exposed to the CALL software, so that use of the computers with sound teaching techniques are linked from the inception of the implementation process.

Finally, teacher training needs to be on-going as it was in this project. This gives teachers the continuous support they need to enhance their technical mastery of the software programs. On-going training is especially needed to help teachers learn to use programs which are introduced after pre-implementation training. Workshops scheduled throughout the implementation process would also provide the teacher trainer with ample opportunities to coach teachers on integrating CALL learning with classroom
instruction. Additionally, on-going training creates occasions to discuss and iron-out implementation problems and adjust policies as needed. For larger projects, I am certain that training workshops provided throughout the project period would also provide an excellent venue for collaboration and cross-fertilization of ideas between teachers on creative applications of CALL.

Selection and Introduction of New Software

Software should be reviewed carefully by project staff to insure that it is pedagogically sound and "user friendly". The curricular objectives of the ESL program should guide the selection of software. It is also important that the project software be at the appropriate level of proficiency for the target population and that the students find using the software enjoyable and worthwhile. Therefore, I recommend that a trial approach be taken to software selection. After project staff have identified programs that seem promising, arrangements should be made with software providers that would allow adequate time for students to try out software on a trial basis before major funding is committed to any one package.

In addition to strong up-front training, I also recommend that teachers be introduced to new software on an incremental basis through on-going training to avoid "information overload". Administrators need to be particularly sensitive to this issue for teachers who have limited exposure and knowledge of computers.
Scheduling Computer Use

Student needs and teacher needs must be weighed when deciding how computer use is scheduled. In this study the two project teachers had very different perspectives on their role in providing CALL instruction. For Alice it was important, especially at the beginning of the project, to actually supervise student work in the CALL lab. Quoc, on the other hand, was more than happy to have someone else assume those duties as it allowed him to teach to smaller groups of students less diverse in their learning needs. Therefore I recommend that teachers be allowed to choose their level of involvement in implementing CALL and making it work for their students.

It is important that students not be "overexposed" to CALL or that CALL be a allowed to become a substitute for good classroom teaching. For a program that provides approximately nine hours of ESL instruction per week, we found that two to three hours of CALL a week was an ideal amount of time for most students. However, student interest in CALL must be monitored. If it appears to wane then adjustments should be made, which may require that students be assigned less time in the lab.

Refugees and immigrants new to the U.S. often have a limited window of opportunity to attend ESL classes before work and familial obligations pull them in other directions. In this study we avoided reducing instructional time to make use of the computers, e.g., we did not dismiss...
one group of students after their lab session to focus on providing CALL instruction to a second group. Rather, students in the computer lab simply changed places with students in the classroom when their lab session ended. This allowed students to continue to receive 9 hours of English instruction a week, of which approximately 6 hours were devoted to teacher-led instruction, and 3 hours to CALL.

We believed the addition of CALL as a strategy to teach English served to enrich instruction in the program. The services of a lab monitor greatly facilitated how we were able to schedule CALL for student use. I would therefore recommend that, if funding allows, a lab monitor be hired to assist students in the computer lab, thus freeing up the teacher to instruct the remaining students in the classroom. The services of a lab monitor are particularly important at the beginning of the project when students are anxious about computer use and unfamiliar with the computers and how to navigate the programs.

Issues to Consider Regarding CALL Implementation

CALL is an expensive proposition. Before any decisions are made regarding implementing CALL, the ESL program administrator must question- is it worth it? Could the money be better spent on hiring more teachers, or purchasing other learning materials, such as workbooks, tape-recorders, teaching videos, etc.? The answer depends
on the needs, goals, and financial health of the specific ESL program under consideration.

Due to the part-time nature of teaching positions within the Immigration and Refugee Services ESL program (all classes but one are taught in the evenings to accommodate students' work schedules), the ESL program examined here has always had a difficult time locating and keeping trained ESL professionals. Had we used the available funding to hire a third teacher (the grant that funded the project allowed for the staffing of two teachers at each CALL site), our history shows little reason to believe he or she would have stayed with the program. (One of the two project teachers remained with the program only a year and a half.) For a program with staffing as unstable as a refugee services program, CALL offers the administrator some stability in instructional delivery. As long as the software chosen is of high pedagogical quality and meets the learning goals of the program, CALL can offer assurance to both the administrator and students that learners will always have a place to go where they can count on building upon prior learning in the program.

Since the research project ended, the Versailles Gardens ESL program has experienced a dramatic decrease in funding. Now we can only afford to pay an instructor to teach the advanced class two nights a week. Because we have a CALL lab, however, the students are still able to receive English instruction four evenings a week— their teacher
assigns CALL lessons for them to work on the two evenings she is not present. Although not an ideal situation, it has allowed us to stretch our resources in hard times. It is difficult to believe that we could achieve the kind of high attendance we are seeing on CALL nights if students were only provided with tape-recorders, worksheets, flashcards, or other more traditional means of delivering independent learning activities.

Another issue to consider is the availability of technical assistance. The implementation of CALL required that our program rely more on the technical assistance of the agency's PC specialist, who frequently was not available for immediate assistance. Had there been no one to assist in technical matters involving the installation of software on the network or resolving the inevitable glitches in the operation of the programs, the project probably would have folded early on. Not having this role assumed by someone within the program did lead to some delays and frustrations. A project could be crippled, however, if needed technical expertise is not available or cannot be afforded.

Finally, implementing CALL in an ESL program serving adult refugees and immigrants requires considerable energy and commitment on the part of the administrator and teaching staff, which I hope I have illustrated in this report. Unless a key organizational member is committed to
seeing the project through, funding indeed might better be used in another way.

Recommendations for Future Research

As in many exploratory studies, this study may have served to raise more questions than it answered. Certain issues requiring further research are discussed below.

CALL for Older Learners

Never before has the need for refugees and immigrants to learn English been greater than it is now. Recent changes in federal law ban or restrict non-citizens from accessing several major federal benefits programs, unless applicants can verify 40 qualifying quarters of work in the U.S., with only few exceptions. If an immigrant falls on hard times and finds herself with no means of support, in many cases the safety net will no longer be there.

This has become a horrible dilemma for most older immigrants currently receiving SSI and foodstamps, who are too old or disabled to ever work again. To access those vital benefit programs the older immigrant has no choice but to naturalize. However, to qualify for citizenship an immigrant must be able to speak, read, and write English. (Older immigrants with over 15 years of legal residency in the U.S. are exempted from this requirement.)

A rather disappointing finding from this study was that older, low English proficient students did not seem to benefit from nor enjoy learning English with computers. With or without CALL, the Versailles Gardens ESL program
has rarely been able to retain older, un-schooled learners for any significant length of time. These older learners face considerable barriers in learning English which many have found too difficult to overcome. However, now they have no choice. It is either learn English or go hungry. Can CALL help meet this tremendous challenge being faced by adult ESL programs throughout the country?

Future research should be conducted to determine if CALL could be delivered in such a way as to help older Americans learn English. There presently exists a very limited range of software to serve the learning needs, including basic literacy, of this population. A first step in understanding how CALL could assist older learners will require the development of more software appropriate for adults with very low English proficiency and limited educational backgrounds.

Many older immigrants are illiterate in their first language. Software must be developed to teach these learners basic literacy in their first language. The ability of multi-media programs to combine graphics, pictures, motion, and sound holds great promise in teaching basic literacy skills.

After first language literacy skills are mastered, a next step would be helping learners make the transition from native literacy to English literacy skills. Software which could facilitate this process must also be developed.
The older learners in this study already knew how to read and write in their first language, yet they still were unable to sustain an interest in the project's CALL software. An understanding of learning theory points to the need to activate the prior knowledge of learners as a means of developing links to new learning. Researchers must determine what prior knowledge of older immigrants can be activated and built upon to develop new knowledge of English. We must explore how learning English can be framed in a context that older learners feel comfortable with and are happy about. For example, many of the older learners in the ESL program examined in this study were avid gardeners. Perhaps learning English would not have appeared so strange and difficult if the CALL software had provided them with the sounds, sights, and activities of the garden.

Much of the learning materials that have been developed to teach English to adults aim to provide learners with an understanding of their new culture, as well as the skills to master English. For the older learner, combining information on American culture and society along with a new language may only obfuscate the already daunting challenge of mastering English. Perhaps CALL software for older learners should simply focus on teaching English, and be presented using the familiar context of their ethnic communities or even their home countries.
These issues need to be discussed and explored by CALL researchers, adult ESL providers, and software developers—but time is of the essence. Without English, thousands of older and disabled immigrants will be denied their only means of support. The development of CALL software to teach English to older immigrants should become a priority in the CALL research and teaching community.

**Students' Roles as Learners in a CALL Setting**

This study was not able to gather much information regarding possible effects of CALL on students' roles as learners from the student's point of view. Future research along these lines should be conducted to try and understand how computer use impacts the complex system of roles, relationships, and cultural values of students in an ESL classroom. Ideally the research team should include individuals with intimate knowledge of the students' languages and cultures. Such an insider's perspective may very well be required to understand the subtle changes in power, control, and status relationships that role change suggests and CALL's possible effect on this process.

Also, findings regarding students' reactions to and opinions of CALL were based on only one cultural group—the Vietnamese. Future research would need to be conducted to see if my findings hold for second language learners from other cultures.
CALL and Listening Skills

Several students mentioned they liked CALL because they could hear English "over and over again" or because they could actually slow the delivery of aural input with a slow button. However, current theory in language acquisition may lead one to question if this is actually an effective method for developing listening comprehension.

Whereas repeating and slowing the delivery of aural input may not be the most authentic listening situation, the delight that students in this study expressed when they understood what the computer was saying should not be overlooked. Many of the students served by the program had been frustrated for years by their inability to grasp spoken English. At the affective level, perhaps the success they achieve in the CALL lab will instill in these students the confidence they need to continue to attempt to comprehend the English they encounter in discourse episodes with native speakers. Further research could examine what relationships, if any, exist between CALL use, self-efficacy, improvement in listening comprehension, and student efforts at learning English outside the classroom.
BIBLIOGRAPHY


Management. (ERIC Document Reproduction Service No. ED 315-909.)


Bureau of the Census. (September, 1993). We, the American foreign born. Washington, D.C.: U.S.


Freed, M. (1971). Foreign student evaluation of a computer-assisted instruction punctuation course. Austin,


Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.


APPENDIX A

FIRST STUDENT QUESTIONNAIRE:
ENGLISH AND VIETNAMESE VERSIONS
Please answer as fully as possible.

1) Do you feel nervous when you use the computers in the lab?

2) Do you think learning how to use a computer will be easy or difficult?

3) Do you think you will like to use a computer in the ESL program or not?

4) Do you think learning how to use a computer will help you in the future? If yes, then how?

5) Do you think knowing how to use a computer will help you find a better job?

6) Do you think knowing how to use a computer will help you learn and practice English more?

7) Do you think it is important that refugees learn how to use computers? Why or why not?

8) Do you think a computer will help you learn English? If yes, then how do you think the computer will help you to learn English?

9) Presently the ESL program offers classes four evenings a week for a total of about 9 hours of class time a week. About how much class time every week would you like to work on a computer? One hour? Two hours? Three hours? Four hours? Five hours? Six hours? Seven hours? Eight hours? Nine hours? (Please circle your answer.)

Thank you!
Xin vui lòng trả lại bằng đề đăng tải.

1) Quí vị có nghĩ là quí vị đã thử làm quí vị dùng computer trong lớp học không?

2) Quí vị nghĩ học computer có dễ hay khó?

3) Quí vị nghĩ quí vị sẽ thích học không thích dùng computer trong chương trình Anh Văn?

4) Quí vị nghĩ học each dạng computer sẽ giúp quí vị trong việc làm không? Nếu có thì bằng cách nào?

5) Quí vị có nghĩ là mỗi dùng computer sẽ giúp quí vị làm việc làm thở không?

6) Quí vị có nghĩ là hiểu dùng computer sẽ giúp quí vị học và luyện tập nhiều hơn không?

7) Quí vị có nghĩ là computer là một cách quan trọng nhất để quí vị học không? Tại sao học phải sao không?

8) Quí vị có nghĩ là computer có thể giúp quí vị học Anh Văn không? Nếu có thì computer có thể giúp quí vị học Anh văn bằng cách nào?


( Xin vui lòng trả lại)
APPENDIX B

SECOND STUDENT QUESTIONNAIRE: ENGLISH AND VIETNAMESE VERSIONS
STUDENT QUESTIONNAIRE #2

Instructions: Please answer as fully as possible. Your opinions are very important to me.

Name: ___________________ Date: ___________________
(Please Print)

QUESTIONS ABOUT STUDYING ENGLISH WITH COMPUTERS

1) Do you think computers are helping you to learn English? Please circle your answer: yes/no

If you answered yes, how do you think computers are helping you to learn English?

If you answered yes, please consider this. There are four major skill areas to learning English—speaking, listening, reading, and writing. In which skill area do you think the computers are helping you the most? ____________

If you answered no to question #1, why do you think computers are not helping you to learn English?

2) What do you like best about studying English with computers?

3) Think carefully. What do you like least about studying English with computers?
4) Presently the ESL program offers classes four evenings a week for a total of about 9 hours of class time a week. About how much class time every week would you like to work on a computer? One hour? Two hours? Three hours? Four hours? Five hours? Six hours? Seven hours? Eight hours? Nine hours? (please circle your answer).

5) When you go to the computer lab, do you prefer to have a computer to yourself or do you prefer to have a partner? Why? (i.e. please explain why you prefer to have a computer to yourself or why you prefer to have a partner)

6) Sometimes our classes are so large that everyone must have a partner in the lab. Please list here the 3 people in your class you most prefer to be your computer lab partner:


7) Why did you choose the persons you listed above?
8) Who do you think should decide who will be partners in the computer lab—the classroom teacher, the computer teacher, or the students themselves?

Why do you think so?

9) I have noticed that some students prefer not to record themselves very often. Do you use the "record" function often in English Express? _________________

Why or why not?

10) We are thinking about making the computer lab available to ESL students on Friday evenings and/or Saturday mornings.

11) If made the computer lab available to ESL students on Friday evenings, would you attend? _______ Why or why not?

12) If made the computer lab available on Saturday mornings, would you attend? _______ Why or why not?
13) Do you have any suggestions on how we can improve our computer program for ESL students? Your opinions and suggestions are very important to me.

BACKGROUND QUESTIONS

1) Date of Birth:__________

2) How long have you been in the U.S.?______________________

3) What was your occupation in Vietnam?______________________

4) What is your occupation in the U.S.?______________________

5) Did you study English in Vietnam? If so, how long did you study English in Vietnam?______________________

6) How long have you been attending English classes in the U.S.?______________________

7) How many years did you attend school in Vietnam?______________________

Thank you so much!
Hỏi ý kiến của học sinh #2

Hướng dẫn: Xin vui lòng trả lời càng đầy đủ càng tốt. Ý kiến của quý vị rất là quan trọng đối với tôi.

Tên: ______________________________ Ngày: ______________________________
(xin viết chữ in)

Những câu hỏi về cách dùng computers để học Anh Văn

1) Quí vị có nghĩ la computers đang giúp quý vị học Anh Văn hay là không?
   Khoanh tròn một chữ: Có / Không
   Nếu quý vị trả lời có thì quý vị nghĩ computers giúp quý vị học Anh Văn bằng cách nào?

   Nếu quý vị trả lời có, xin vui lòng Hãy ghi. Có bốn cách chính để học Anh Văn - cách nói, nghe, đọc (kể cả phát âm), và viết. Quí vị nghĩ computers đang giúp quý vị cách nào nhiều nhất?

   Nếu quý vị trả lời không cho câu số 1 thì sao khi quý vị nghĩ computers không giúp quý vị học Anh Văn được?

2) Quí vị thích điểm nào nhiều nhất khi quý vị dùng computers để học Anh Văn?

3) Cần thêm. Quí vị thích điểm nào ít nhất khi quý vị dùng computers để học Anh Văn?
4) Hiện nay Chương Trình Anh Văn (ESL) có lớp học 4 ngày một tuần, giống có khoảng 9 tiếng một tuần. Quí vị muốn dùng computers để học khoảng bao nhiêu tiếng mỗi tuần?
(Khoanh tròn câu trả lời của quí vị)

5) Khi quí vị vào phòng computer để học, quí vị muốn một mình quí vị một cái computer hay học chung với một người khác nữa?
__________________________ tại sao?
(Xin giải thích tại sao quí vị muốn học một mình học chung với một người khác nữa)

6) Có những lúc lớp học quá đông cho nên tất cả mọi người phải dùng computer chung với một người khác nữa. Xin vui lòng viết tên của 3 người trong lớp mà quí vị muốn học chung với họ khi dùng computer.

__________________________
__________________________
__________________________

7) Tại sao quí vị lại muốn chọn những người ở trên đây?
8) Quí vi nghi ai phải là người quyết định về việc dùng computer chung?
Người giáo viên trong lớp học, người giáo viên trong phòng computer, hay là tự học sinh hì người để học computer?

Tại sao?

9) Tôi thấy có một số học sinh không có thâu tiếng phát âm của mình nhiều. Quí vi có hay thâu tiếng phát âm của qui vi khi học English Express không?
Tại sao có hoặc tại sao không?

10) Chúng tôi đang xuyen nghi về sử dụng computer cho học sinh đang học Anh Văn dùng vào chiều thứ sáu và/hoặc là sáng thứ bảy.

11) Nếu Hỏi sử dụng computer cho học sinh học Anh Văn học thêm vào chiều thứ sáu, qui vi có đủ không? _______ Tại sao học tại sao không?

12) Nếu Hỏi sử dụng computer cho học sinh học Anh Văn học thêm vào sáng thứ bảy, qui vi có đủ không? _______ Tại sao có hoặc tại sao không?
13) Quí vị có ý kiến gì để làm cho chương trình computer cho học sinh Anh Văn được phát chuyển hơn không? Ưu tiên của quí vị nhất là quan trọng đối với tôi.

Những câu hỏi về lại lịch

1) Ngày sinh: __________________

2) Quí vị ở Mỹ đã học bao lâu rồi? __________________

3) Nghề nghiệp cụa quí vị ở bên Việt Nam là gì? __________________________

4) Nghề nghiệp cụa quí vị ở bên Mỹ là gì? __________________________

5) Quí vị có học Anh Văn ở bên Việt Nam chưa? __________________________ Nếu có thì quí vị học Anh Văn ở bên Việt Nam đã học bao lâu?

6) Quí vị học Anh Văn ở bên Mỹ đã học bao lâu rồi?

7) Quí vị decide hồi học tài ca là bao nhiêu năm ở bên Việt Nam?

Cảm ơn quí vị rất nhiều!
Name: __________________________ Date: __________

(please print)

QUESTION 1

There are four major skill areas in learning English: speaking, reading, listening, writing.

Below please rank from 1 to 4 in which skill areas you think the computers are helping you the most. Please put a 1 next to the English skill area you think computers help you the most. Put a 2 next to the English skill area you think computers are helping you the second most. Put a 3 next to the English skill area you think computers are helping you the third most. Please put a 4 by the English skill area you think computers are helping you the least:

____ speaking
____ reading
____ listening
____ writing

QUESTION 2

Our ESL program is using the following 5 computer programs in the computer laboratory:

____ English Express
____ Word Attack 3
____ PLATO
____ Triple Play Plus
____ Rosetta Stone.

Please see the pictures provided to help you remember what these programs are like.

Please rank the quality of the programs to help you learn English from one to five. Please put a 1 by the program that you think is the best program for helping you learn English. Put a 2 by the program that you think is the next best for helping you learn English. Put a 3 by the program that you think is the third best for helping you learn English. Put a
4 by the program you think is the fourth best for helping you learn English. Put a 5 by the program you think helps you the least in learning English.

Look at your #1 choice. Why do you think this program is the best?

Look at your #5 choice. Why do you rank this program the lowest?

**QUESTION 3**

Presently, do you think you are working on the computers: (Please circle your answer)

too much time
not enough time
just the right amount of time
**QUESTION 4**

Learning English with computers is somewhat different than learning English with a workbook, a tape recorder, or listening to the TV or radio.

Please rank from 1 to 6 the features/characteristics of computers that you think help you the most to learn English.

Put a 1 by the feature of the computers that you think is most helpful in you learning English. Put a 2 by the computer feature that you think is the next most helpful for learning English. Put a 3 by the computer feature that you think is the third most helpful for learning English, etc., up to 6.

With a computer.....

_____ I can repeat the sound of a word or phrase as many times as I want

_____ I can proceed at my own pace

_____ Certain programs keep score on how I am doing.

_____ I can record my voice and compare it to the computer provided voice

_____ pictures are shown with the sound and spelling of a new word or phrase

_____ I can listen and then type what I have just heard
**QUESTION 5**

In the following three questions I will ask you to reflect on your feelings about learning English in three different settings/environments.

A) Think about learning English in the computer lab.

Please indicate with a checkmark (✓) on the scale below what is closest to your feelings about learning English in the computer lab:

Learning English in the computer lab is:

(For example, how do you feel about shrimp sauce?)

Tasty _______ _______ _______ _______ stinky

If you really like shrimp sauce, and you don’t mind its smell at all, then put a check (✓) right next to the word tasty below.

Tasty ✓ _______ _______ _______ stinky

If you like shrimp sauce, but it is not really your favorite sauce, then put a check (✓) on the second blank close to the word tasty.

Tasty _______ ✓ _______ _______ stinky

On the contrary, if you do not like shrimp sauce at all, and the only thing that you can think of is its odor, then put a check (✓) next to the word stinky.

Tasty _______ _______ _______ ✓ stinky

<table>
<thead>
<tr>
<th>boring</th>
<th>fresh</th>
<th>meaningless</th>
<th>important</th>
<th>usual</th>
<th>powerful</th>
<th>passive</th>
<th>thrilling</th>
<th>uneventful</th>
<th>challenging</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>interesting</th>
<th>stale</th>
<th>meaningful</th>
<th>unimportant</th>
<th>unusual</th>
<th>weak</th>
<th>active</th>
<th>quieting</th>
<th>action-packed</th>
<th>dull</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
B) Now think about learning English on your own at home.

Please indicate with a checkmark (✓) on the scale below what is closest to your feelings about learning English by studying on your own at home:

Learning English by studying on my own at home is:

- boring ___ ___ ___ ___ ___ ___ ___ interesting
- fresh ___ ___ ___ ___ ___ ___ ___ stale
- meaningless ___ ___ ___ ___ ___ ___ ___ meaningful
- important ___ ___ ___ ___ ___ ___ ___ unimportant
- usual ___ ___ ___ ___ ___ ___ ___ usual
- powerful ___ ___ ___ ___ ___ ___ ___ weak
- passive ___ ___ ___ ___ ___ ___ ___ active
- thrilling ___ ___ ___ ___ ___ ___ ___ quieting
- uneventful ___ ___ ___ ___ ___ ___ ___ action-packed
- challenging ___ ___ ___ ___ ___ ___ ___ dull

C) Finally, think about learning English in the classroom.

Please indicate with a checkmark (✓) on the scale below what is closest to your feelings about learning English in the classroom:

Learning English in the classroom is:

- boring ___ ___ ___ ___ ___ ___ ___ interesting
- fresh ___ ___ ___ ___ ___ ___ ___ stale
- meaningless ___ ___ ___ ___ ___ ___ ___ meaningful
- important ___ ___ ___ ___ ___ ___ ___ unimportant
- usual ___ ___ ___ ___ ___ ___ ___ usual
- powerful ___ ___ ___ ___ ___ ___ ___ weak
- passive ___ ___ ___ ___ ___ ___ ___ active
- thrilling ___ ___ ___ ___ ___ ___ ___ quieting
- uneventful ___ ___ ___ ___ ___ ___ ___ action-packed
- challenging ___ ___ ___ ___ ___ ___ ___ dull

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
PLEASE ANSWER THE FOLLOWING QUESTIONS AS FULLY AS POSSIBLE.

6. Did you feel nervous when you first starting working on the computers?

7. How do you feel when working on computers now? Do you feel nervous when you work on computers now?

8. When we had only four computers in the lab students were often required to work in pairs. Now that we have 7 computers often it is possible for every student to have his/her own computer.

Now when you go to the computer lab, do you prefer to have a computer to yourself or do you prefer to have a partner? _______ Why?

9. Presently the ESL program offers classes four evenings a week for a total of about 9 hours of class time a week. About how much class time every week would you like to work on a computer? One hour? Two hours? Three hours? Four hours? Five hours? Six hours? Seven hours? Eight hours? Nine hours? (please circle your answer.)

10. How do you think learning English in the computer lab is different than learning English in the classroom? (please describe)

11. Do you have any suggestions on how we can improve our computer program for ESL students? Your opinions and suggestions are very important to me. Thank you!!!
BACKGROUND QUESTIONS

1) Date of Birth: __________

2) How long have you been in the U.S.? ________________

3) What was your occupation in Vietnam? ________________

4) What is your occupation in the U.S.? ________________

5) Do you have many opportunities to speak English at work? ________________

6) Did you study English in Vietnam? ______ If so, how long did you study English in Vietnam? ________________

7) How long have you been attending English classes in the U.S.? ________________

8) How many years did you attend school in Vietnam? ________________

Thank you so much!
Tên: __________________________ Ngày: ______________

Câu hỏi 1

Học Anh Văn có bốn điểm: nói, đọc, nghe, viết.

Xin vui lòng xếp từ 1 - 4 cho những điểm nào qui việc nghi computers nó giúp qui việc học Anh Văn nhiều nhất. Xin vui lòng số 1 cho điểm nào computer giúp qui việc học Anh Văn nhiều nhất. Việt số hai cho điểm nào nó giúp qui việc nhiều thứ hai. Rồi Việt số 3 cho điểm nào nó giúp qui việc nhiều thứ ba. Sau cùng, Việt số 4 cho điểm nào nó giúp qui việc ít nhất.

___ Nói
___ Đọc
___ Nghe
___ Viết

Câu hỏi 2

Chương Trình Anh Văn (ESL) của chúng ta dùng 5 chương trình khác nhau trong phòng computer:

___ English Express
___ Word Attack 3
___ PLATO
___ Triple Play Plus
___ Rosetta Stone.

Xin vui lòng nhìn những tấm hình kèm theo để nó giúp qui việc nhỏ những chương trình viết trên.

Xin vui lòng xếp từ 1 tôi 5 theo cái phẩm giá của những chương trình nó giúp qui việc học Anh Văn. Xin viết số một vào cái chương trình nào qui việc nhỏ nó là cái chương trình tốt nhất để giúp qui việc học Anh Văn. Việt số 2 vào cái chương trình nào nó giúp qui việc học

Xin nhìn chương trình qui vi chọn là số 1. Tại sao qui vi nghĩ chương trình này tốt nhất?

Xin nhìn chương trình qui vi chọn là số 5. Tại sao qui vi xếp chương trình này vào hàng thấp nhất?

Câu hỏi 3

Hiện tại bấy giờ, qui vi nghĩ là qui vi đang dùng computers:
(Xin khoanh tròn một cái)

Nhiều giờ qua

ít giờ qua

Vừa du gió
Câu hỏi 4

Học Anh Văn bằng computers có một số điểm khác với học Anh Văn bằng sách-vở, bảng thâu lại, hoặc lắng nghe Ti vi hoặc máy radio.

Đây đây, tôi có viết một số điểm (dác sắc) nó làm học Anh Văn bằng computers khác với học Anh Văn bằng sách-vở, bảng thâu lại, hoặc lắng nghe Ti vi hoặc máy radio.

Xin vui lòng xếp theo thứ tự từ 1 tới 6 cho những điểm (dac sac) nào qui vi nghi nó giúp qui vi học Anh Văn nhiều nhất.

Xin viết số một vào điểm (dac sac) nào của computers qui vi nghi có ít lỗi nhất khi qui vi học Anh Văn. Viết số 2 vào điểm nào computer giúp qui vi học được nhiều kế tiếp. Viết số 3 vào điểm nào của computer giúp qui vi học nhiều thứ ba, v.v. cho tới số 6.

Với computers...

___ Tôi có thể lập đi lập lại phát âm của một chú hoắc một câu nào đó bao nhiêu lần cùng được.

___ Tôi có thể trình bày theo đề học của tôi.

___ Có chương trình giữ điểm cho những việc tôi làm.

___ Tôi có thể thâu tiếng nói của tôi rồi so sánh với tiếng của computer.

___ Tôi có thể nhìn thấy hình, nghe được tiếng phát âm, và nhìn thấy chú hoắc câu mới cùng một lúc.

___ Tôi có thể nghe rồi đánh máy những gì tôi mới nghe.
Câu hỏi 5

Ba câu hỏi sau đây, tôi xin hỏi về cái cảm giác của quý vị khi học Anh Văn trong ba phòng cảnh khác nhau.

A) Xin nghi về học Anh Văn trong phòng computers.

Xin viết dấu (✓) vào chỗ nào gần cái cảm giác của quý vị nhất khi quý vị học Anh Văn trong phòng computers.

Học Anh Văn trong phòng computers:

(Vi dụ như quý vị cảm thấy như thế nào về мам том?)

Ngon  _________________  hỏi

Neu quý vị thích мам том và không ngại cái mùi cụs nó thì quý vị viết dấu (✓) ở bên cạnh chữ "ngon" như sau.

Ngon  ✓___________________________  hỏi

Neu Quý vị thích мам том hơn nhiều thì viết dấu (✓) vào chỗ trong thư hai gần chữ "ngon.

Ngon  ✓___________________________  hỏi

Nước lại, nếu quý vị không thích мам том chút nào hết, và chỉ thấy mùi hơi thì viết dấu (✓) vào bên cạnh chữ "ngon.

Ngon  ✓___________________________  hỏi

Quy vị thấy cái cảm giác của quý vị mỗi ngày ở bên nào nhiều hơn thì quý vị đánh dấu bên do.

chat nan  ___________ ___________ ___________ ___________  thu-vi
mơi me  ___________ ___________ ___________ ___________  cu qua roi
không có ý nghĩa  ___________ ___________ ___________ ___________  có ý nghĩa
quân trong  ___________ ___________ ___________ ___________  không quan trọng
thông thucht  ___________ ___________ ___________ ___________  không thông thường
rất mạnh  ___________ ___________ ___________ ___________  yêu
thủ động  ___________ ___________ ___________ ___________  hành động
rung động  ___________ ___________ ___________ ___________  yên tĩnh
không đặc biệt  ___________ ___________ ___________ ___________  rất, là, hấp dẫn
sử thách  ___________ ___________ ___________ ___________  buồn te
B) Xin nghi về tự học Anh Văn một mình ở nhà.

Xin đánh dấu (✓) vào chỗ nào bổ gan cái cảm giác của qui vi nhất khi qui vi tự học Anh Văn một mình ở nhà.

Tự học Anh Văn ở nhà:

<table>
<thead>
<tr>
<th>Chân nản</th>
<th>Mới me</th>
<th>Không có ý nghĩa</th>
<th>Quan trọng</th>
<th>Thông thường</th>
<th>Rất mạnh</th>
<th>Thứ đông</th>
<th>Rung động</th>
<th>Không đặc biệt</th>
<th>Sụ thách</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C) Cuối cùng, xin nghi về học Anh Văn trong lớp học.

Xin đánh dấu (✓) vào chỗ nào bổ gan cái cảm giác của qui vi nhất khi qui vi học Anh Văn trong lớp học.

<table>
<thead>
<tr>
<th>Chân nản</th>
<th>Mới me</th>
<th>Không có ý nghĩa</th>
<th>Quan trọng</th>
<th>Thông thường</th>
<th>Rất mạnh</th>
<th>Thứ đông</th>
<th>Rung động</th>
<th>Không đặc biệt</th>
<th>Sụ thách</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
XIN TRẢ LỜI NHỮNG CÂU HỎI SAU ĐÀY CẢNG ĐÀY ĐƯ CẢNG TỐT.

6. Khi quí vị mới bài đầu dùng computer, quí vị có hỏi hộp không?

7. Bây giờ thì quí vị cảm thấy như thế nào? Bây giờ quí vị có cảm thấy hộp hộp khi quí vị dùng máy computers không?


Bây giờ khi quí vị vào phòng computers, quí vị muốn học riêng một cái computer hoặc là học trung hai người một cái computer? __________________________ Ta sao vậy?


10. Quí vị nghĩ học Anh Văn trong phòng computers khác nhau với học Anh Văn trong lớp học như thế nào? (xin điền ta)

11. Quí vị có đề nghị gì để giúp chúng tôi làm cho chương trình computer của học sinh Anh Văn (ESL) khả bị không? Sử đề nghĩ và ý kiến của quí vị rất là quan trọng đối với tôi. Cám ơn!!!
Câu hỏi về lịch

1) Ngày sinh: ______________________

2) Quí vị sống ở Mỹ được bao lâu rồi?

3) Nghề nghiệp của quí vị ở bên Việt Nam là gì?

4) Nghề nghiệp của quí vị ở bên Mỹ bây giờ là gì?

5) Quí vị có nhiều cơ hội để nói tiếng Anh ở chỗ làm không?

6) Quí vị có học Anh Văn ở bên Việt Nam chưa? Nếu có thì quí vị học Anh Văn ở bên Việt Nam được bao lâu?

7) Quí vị học Anh Văn ở bên Mỹ được bao lâu rồi?

8) Quí vị được đi học tại cả là bao nhiêu năm ở bên Việt Nam?

Cảm ơn quí vị rất nhiều!
The purpose of the research study I want to undertake is to explore the process of implementing computer technology in a multi-level, open-entry ESL classroom for adult refugees as it is actually occurring, so to derive potential lessons about this process. Major aims will be to a) provide administrators and teachers with a sound basis for making decisions regarding successful strategies for introducing Computer Assisted Language Learning (CALL) in an ESL program and b) to identify appropriate uses of computer technology to enhance English acquisition and vocational preparedness of adult students in a multi-level learning environment.

Very few ESL programs for refugees are using computers, therefore, we have much to learn about how computers should be used to help refugees learn English. I am asking you to participate in the study so that I can learn from your experiences with teaching with computers how to best advise administrators and teachers in other ESL programs how computers can help their students learn English.

One of the best ways I can learn about how computers should be introduced and used in an ESL program like the one at ACC is by asking students and teachers their opinions. Therefore at various times during the study I would like to interview you about what you think regarding computer use in the ESL program and how you think computers are helping your students to learn English. I am requesting here your permission to be interviewed (please check your response, below):

Permission granted______
Permission denied______

Another way I can learn about how computers can best be utilized in an ESL program is by observing students and teachers working with computers. I therefore also request your permission to observe you during the study and to take notes during observations (please check your response, below):

Permission granted______
Permission denied______

Sometimes I will be so busy helping people learn how to use the computers I will be too busy to make careful observations. At those times I would like your permission to
videotape computers sessions (please check your response, below):

Permission granted______
Permission denied______

To gain a better understanding of how implementation of CALL effects teaching and learning in your classroom, I am asking that you keep a journal about your experiences during the implementation process (it may be a written journal or you may record your thoughts on a portable tape recorder I will provide.) I ask that you be especially attentive to any changes you note in your teaching style, how classes are structured, and student behavior when CALL becomes a part of the learning environment. Are you be willing to keep a journal during the study? (Please check your response, below:)

Yes____
No____

I expect that the study will last from four to six months. I will be at the class site an average of two evenings a week to assist students and teachers in learning how to use the computers and to make observations and/or conduct interviews.

I hope that through your participation in this study, you will learn about state-of-the-art CALL software and hardware and how CALL can enhance English acquisition. I believe such knowledge will be a valuable contribution to your professional development. Participation in the study will also contribute to your understanding of educational research methods which should also prove to enhance your professional development.

I believe that knowledge gained in this study will make an important contribution to the field of educational research by providing a better understanding of how computers can enhance ESL instruction and vocational preparedness to a growing segment of American society.

If you choose not to participate in the study, this will not affect your employment with ACC or your access to computers in any way.

I assure you that you have been provided a full and accurate account of the purpose of the study and the research methods I will use to conduct the study. I will be
available to answer any questions you may have about the study at any time.

Please know that you have the option to withdraw from the study at any time. Should you decide to withdraw from the study, such action will not affect your employment with ACC or your access to computers in any way.

The information obtained in this study will be available only to me and occasionally an interpreter when videotaping must be translated. The confidentiality of your comments and actions will be respected at all times.

Should you ever feel that my research efforts are having a detrimental effect on the program, please my supervisor, Ms. ( -3755, ext. 3213).

I have fully explained to the teacher the nature and purpose of the above-described procedure. I have answered and will answer all questions to the best of my ability. I will inform the teacher of any changes in the procedure or the risks and benefits if any should occur during or after the course of the study.

Investigator's Name and Telephone Number

Date

I have been satisfactorily informed of the above described procedure. I give permission for my participation in this study. I know that Ms. Weishar will be available to answer any questions I may have. If I feel my questions have not been adequately answered, I may request to speak to the chairperson of the Research Review Committee, Dr. , by calling -5581. If a problem arises at any point, I can call Ms. Weishar at -3755, ext. 2606. I understand that I am free to withdraw this consent and discontinue participation in this project at any time, even after signing this form, and it will not affect my employment at . I have been given a copy of this form.
I choose to participate to the extent indicated by checkmarks, above:

Signature of teacher  
Date

Signature of investigator  
Date

Witness to signatures  
Date

I choose NOT to participate.

Signature of teacher  
Date

Signature of investigator  
Date

Witness to signatures  
Date
CONSsent FORM FOR STUDENTS

Very few ESL programs for refugees are using computers. There is much to learn about how computers should be used to help refugees learn English. I would like to do a research study about using computers in our ESL program and I would like to invite you to participate in my study. In my study I hope to learn from your experiences learning with computers how to best advise administrators and teachers in other ESL programs how computers can help their students learn English.

One of the best ways I can learn about how computers should be introduced and used in an ESL program like the one at ACC is by asking students and teachers their opinions. Therefore at various times during the study I would like to interview students about what you think regarding computer use in the ESL program and how you think computers are helping you to learn English. However, I will ask you questions about using computers only with your permission.

May I ask you questions during the study about your opinions about learning English with computers? (Please check your answer below:)

Permission granted____
Permission denied____

Another way I can learn about how computers can best be used in an ESL program is by watching students and teachers working with computers and taking notes.

May I observe you working on the computers and take notes about what I observe? (Please check your answer below:)

Permission granted____
Permission denied____

Sometimes I will be very busy helping people learn how to use the computers, too busy to make careful observations. At those times I would like your permission to videotape computers sessions.

May I videotape you working on the computers? (Please check your answer below:)

Permission granted____
Permission denied____
With the computer you will be able to create and print various documents such as fliers, essays, spreadsheets, etc. I would like your permission to collect copies of your work to keep and study.

May I keep copies of documents you produce with the computer? (Please check your answer below:)

Permission granted_____
Permission denied_____

I expect that the study will last from four to six months. I will be at the class site an average of two evenings a week to assist students and teachers in learning how to use the computers and to observe and ask questions.

I hope that through your participation in this study, your knowledge of English and your understanding of how computers work will be increased. I also believe that knowledge gained in this study will make an important contribution towards understanding better how computers can improve ESL instruction and help refugees be more ready to work with computers on the job.

If you choose not to participate in the study, this will not affect your participation in the program or your access to computers in any way.

I assure you that you have been provided a full and accurate account of the purpose of the study and the research methods I will use to conduct the study. I will be available to answer any questions you may have about the study at any time.

Please know that you have the option to withdraw from the study at any time. Should you decide to withdraw from the study, such action will not affect your participation in the ESL program or your access to computers in any way.

The information obtained in this study will be available only to me and occasionally an interpreter when videotaping must be translated. The confidentiality of your comments and actions will be respected at all times.

Should you ever feel that my research efforts are having a detrimental effect on the program, please contact me or my supervisor (Ms. -3755, ext. 3213).

I have fully explained to the student the nature and purpose of the above-described procedure. I have answered and will answer all questions to the best of my ability. I will
inform the student of any changes in the procedure or the
risks and benefits if any should occur during or after the
course of the study.

Investigator's Name and Telephone Number

Date

I have been satisfactorily informed of how Ms. Weishar plans
to conduct her study. I give permission (or partial
permission) for my participation in this study. I know that
Ms. Weishar will be available to answer any questions I may
have. If I feel my questions have not been adequately
answered, I may request to speak to Dr. chairperson of the Research Review Committee by calling
-5581. If a problem arises at any point, I can call the
Ms. Weishar at -3755, ext. 2606. I understand that I am
free to withdraw this consent and stop participation in this
project at any time, even after signing this form, and it
will not affect my participation in the ESL program or
access to computers in any way. I have been given a copy of
this form.

I choose to participate to the extent indicated by
checkmarks, above:

__________________________  _________________________
Signature of student            Date

__________________________  _________________________
Signature of investigator        Date

__________________________  _________________________
Witness to signatures            Date
I choose NOT to participate.

Signature of student  
Date

Signature of investigator  
Date

Witness to signatures  
Date
ĐƠN UYẾN THUẬN CỦA HỌC SINH

Rất tiếc chương trình Anh Văn (ESL) chưa đề cập đến việc sử dụng máy tính (computers). Vì vậy rất nhiều chỉ tiêu cần phải học về những cách sử dụng computers có thể giúp người học Anh Văn khá khó khăn. Tôi muốn hiểu chi tiết về việc sử dụng computers trong chương trình Anh Văn của chúng ta, và tôi muốn mở một buổi học để giúp những người học. Trong việc nghiên cứu của tôi, tôi muốn học những kinh nghiệm của việc sử dụng computers để học, để chỉ cách cho những người quan tâm và giúp việc trong những chương trình Anh Văn khác những cách sử dụng computers có thể giúp học sinh của học Anh Văn.

Một trong những cách tôi nhận là tôi có thể học để biết computers nên được mua đầu và sử dụng như thế nào trong chương trình Anh Văn giống như chương trình của học ACC là bằng cách hỏi người học những cách sử dụng computers trong chương trình Anh Văn và quí vị nghĩ computers giúp gì với học Anh Văn như thế nào? Dù sao đi nữa, tôi chỉ hỏi quí vị về cách sử dụng computers nếu quí vị cho phép.

Trong thời gian nghiên cứu, tôi có thể hỏi những người quí vị về học Anh Văn bằng computers không? (Xin vui lòng đánh dấu dưới đây)

- Cho phép
- Không cho phép

Một trong những cách khác mà tôi có thể học để biết làm sao computers có thể được sử dụng cách tôi nhận trong chương trình Anh Văn là bằng cách xem học sinh và giáo viên dùng computers và ghi chú bất.

Tôi có thể quan sát quá trình quí vị với computers và ghi chú những gì tôi quan sát không? (Xin vui lòng đánh dấu ở dưới đây)

- Cho phép
- Không cho phép

Có khi tôi sẽ rất biết giúp những người khác cách sử dụng computers. Khi bạn quí vị không quan sát kỹ được. Trong những lúc đó, tôi muốn tham gia quí vị cho tôi thụ hình trong buổi học computers.

Tôi có thể thụ hình khi quí vị đang dùng computers không?
Cho phép ____________________________________________________________________

Không cho phép ____________________________________________________________________

Qui vị có thể dùng computers để sáng tạo và in những văn học, tài liệu, luận văn, v.v... Tôi muốn xin phép qui vị cho tôi thiết kế những bản sao lại ([đặt ra] qui vị để giữ và học.

Tôi có thể giữ những tài liệu qui vị làm ra bằng computers không? (Xin vui lòng đánh dấu dưới đây)

Cho phép ____________________________________________________________________

Không cho phép ____________________________________________________________________

Tôi dự đoán là việc nghiên cứu này sẽ là không sử dụng tốt sau đây. Tôi sẽ vô thường học trực tiếp là hai tôi một tuần để giúp học sinh và giáo viên học cách dùng computers, và quan sát và hỏi một số câu hỏi.

Tôi hy vọng sự tham gia của qui vị trong sự nghiên cứu này sẽ làm cho sự hiểu biết của qui vị về Anh Văn và cách computers làm việc tiến bộ hơn. Đồng thời tôi tin rằng những sự hiểu biết chúng ta sáng tạo được trong sự nghiên cứu này sẽ là một sự động góp rất quan trọng để biết cách tôi hỏi khi dùng computers để dạy Anh Văn, và để giúp người viết nên sản sáng biết dùng computers khi đi làm việc.

Nếu qui vị không tham gia vào sự nghiên cứu này, qui vị vẫn có thể học Anh Văn và dùng computers như thường.

Tôi cam đoan là qui vị đã được giải thích đầy đủ và chính xác về các mục đích của sự nghiên cứu và cách tôi dùng để nghiên cứu. Bất cứ lúc nào tôi cũng sẵn sàng trả lời bất cứ câu hỏi nào qui vị muốn hỏi về sự nghiên cứu này.

Qui vị có thể rút lui ra khỏi việc nghiên cứu này bất cứ lúc nào. Nếu qui vị rút lui, hành động đó sẽ không ảnh hưởng tới sự tham gia của qui vị trong chương trình Anh Văn, và qui vị vẫn được dùng computers như thường.

Chỉ có mới mình tôi biết những chỉ tiêu lấy được của qui vị cho việc nghiên cứu này. Ngoài tôi ra, có khi sẽ có một người thông dịch khi mày cuốn phần thâu được cần phải được thông dịch. Tôi cần những hành động và lời nói của qui vị sẽ luôn luôn được giữ kín và tôn trọng.

Bất cứ lúc nào qui vị cảm thấy sự nghiên cứu của tôi mang đến hưởng xâu hoặc không tốt tôi cho chương trình (Anh Văn), xin vui lòng báo cho tôi hoạc người cặp trên của tôi biết (Ms. 3755, ext. 3213).

Tôi đã giải thích đầy đủ cho học sinh biết về cái nguyên nhân của những cách tôi làm ở trên. Tôi đã trả lời và sẽ cố gắng trả lời tất cả những câu hỏi theo khả năng của tôi. Tôi sẽ bảo cho học sinh biết bất cứ những gì thuyết đối, may mắn, hoặc quyền lợi nếu nó xảy ra trong khi học sau việc nghiên cứu này.
Tên và số điện thoại của người điều tra

Ngày


Tôi tức nguyên tham gia vào những việc mà tôi đã đánh dấu ở trên.

Chữ ký của học sinh Ngày

Chữ ký của người điều tra Ngày

Chữ ký của người làm chứng Ngày

Tôi không muốn tham gia.

Chữ ký của học sinh Ngày

Chữ ký của người điều tra Ngày

Chữ ký của người làm chứng Ngày
INTERVIEW QUESTIONS FOR STUDENTS. (Minh- please encourage the students to talk as much as possible. I am mainly trying to get at what they think about using computers to study English. If they happen to go off on a tangent unrelated to the questions but still they are talking about the computers- please encourage them to continue).

EXPLANATION

Please begin by briefly explaining to the student why you are interviewing her/him:
1) because Ms. Weishar asked me to so that we here at ACC can better understand how the computers are helping our students
2) also part of the research Ms. Weishar is conducting so she can best advise other refugee programs about using computers to teach English

WARM-UP QUESTIONS: JUST ASK THESE (OR OTHER QUESTIONS YOU THINK OF) TO HELP RELAX THE STUDENT

1) How long have you been studying English here at ACC?

2) What is the main reason you want to learn English?

3) Have you had much prior experience with computers or other machines?

RESEARCH QUESTIONS [YOU DO NOT HAVE TO ASK THESE IN ORDER]

4) We have been using computers in our ESL program here at since April. Do you think the computers are helping you to learn English?
5) Learning English with computers is different than learning English with a book or with a tape recorder. How do you think the computers are helping you learn English? (i.e. what is it about the computers or what is it about the way they perform/operate that help you to learn English? Maybe be careful not to lead the student. If they cannot come up with anything, just move on.)

6) If not, why do you think they are not helping you learn English?

7) Do you enjoy studying English with computers? What is it about studying English with computers you like the best?

What is it about studying English with computers you like the least?

8) Classes are offered here at about 9 hours a week. How many of those nine hours would you like to spend working on the computers? 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ?
9) We use the following software programs for teaching English:
   Rosetta Stone (with the 4 pictures)
   English Express (with the space ship landing)
   Triple Play Plus (it has the Bingo Game)
   PLATO (only a few of Ngoc's students have used this— it has grammar exercises and no sound)
   Word Attack Three (where one shoots a gun at the write definition of a word)

9a) Which program do you like the best? Why is this program your favorite program?

9b) Which of the above programs do you like the least? Why is this your least favorite program?

10) In your opinion, would you like more time each week working on the computers or would you prefer less time on the computers? Why?

11) Do you have any suggestions on how we can improve our computer program for the students?
Interview Guide for Teacher Interviews

1. Are you finding your learning how to use the CALL software programs as an easy or difficult thing to do?

2. Do you think your students are finding it easy or difficult to use the various programs?

3. Are you finding that implementing CALL into our program is a simple or complex process?

4. Are you finding that implementing CALL into our ESL program is requiring much additional work from you? A lot? What are you finding this entails?

5. You said the greatest learning needs of your beginning students were _____ and the greatest learning needs of your more advanced students were _________.

   Is CALL helping to meet those needs? If yes, how do you think CALL is helping to meet those needs? If not, why do you think CALL is not meeting those needs?

6. What kind of support do you anticipate needing from me to help facilitate the implementation of CALL?

7. Is it clear or unclear to you how computers should be used in the program at this point?

8. When you think about CALL in our program, what are you concerned about?

9. How do you feel things are going with implementing CALL in the program?

10. Do you think CALL is having a positive impact on students learning English, why or why not?

11. Do you think students are taking to the innovation, i.e., do they like using computers?

12. Are computers doing what you thought they were supposed to do?

13. Do you feel adequately trained to use the software programs? Rate your skill level at this point?

14. Do you feel comfortable/at ease with using the CALL programs at this point?

15. Do you feel confident when using CALL?
Interview Guide for Teacher Interviews (cont'd)

16. How committed do you feel at this point to incorporating CALL into your ESL teaching?

17. Do you feel you have adequate software, other materials?

18. What do you think about the scheduling of computer use at this point?
   Are the students using the computers too much? Not enough?

Classroom Changes

19. What changes (if any) at the classroom level are you seeing as CALL is implemented?
   in how classes are organized and conducted on computer days, non-computer days (e.g. content of lessons, grouping of students)?

20. grouping of students?

21. in the time you spend with individual students?

22. how you relate with students?

23. in your teaching methods and styles?

24. What changes (if any) are you seeing in your students (as a consequence of the implementation of CALL), especially in their perceptions of their role as learners?

Goodness of Fit

25. At this point of the implementation process, how does CALL "fit" your teaching philosophy and style?

26. How do you think CALL is "fitting" the program? i.e. meeting needs, level of disruption?

Organizational Changes

27. Has the coordination between teachers changed much as a consequence of CALL?

28. Has the coordination between teachers and the administrator changed much as a consequence of CALL?
Start List of Codes

Site Dynamics and Transformations- TR*

Event Chronology (TR-CHRON): Event chronology during initial and ongoing implementation.*

Initial User Experience (TR-START-T,S,A): Emotions, problems or concerns, assessments made by teachers (T), students (S), and administrator (A) during first months of implementation.*

How the innovation is used by students (TR-INNUSE-S): How beginning (B) and more advanced (A) students use the computer.

Effects on classroom practice (TR-CLASS): Indications of impact of the innovation on routine classroom practices (e.g. management of class time, incorporation of computer lessons in class discussion, nature of group work, changes in lesson plans, changes teachers may report in their teaching methods, theories).*

Effects on organizational practices (TR-ORG/PRAC): Indications of impact of the innovation on daily operations (e.g. scheduling of computer/class time, communication among staff, teacher in-services).*

Implementation Problems (TR-PROBS-T,S,A): Difficulties or concerns relating to implementation at the personal, classroom, or organizational level as expressed by teachers (T), students (S), or administrator (A).*

Critical events (TR-CRIT): Observed or stated incidents or moments that are judged as critical in determining the direction and outcome of implementation, including crises, conflicts, moments of decision, departures and arrivals, and interventions.*

Explanations for transformations (TR-SIZUP-T,S,A): Explanations by respondents (T,S,A) of the reasons why events occurred or effects observed during the implementation phase.*

Program problem-solving (TR-PLAN): Plans or strategies devised in solving problems in relation to the implementation of the innovation.*

New Configurations and Ultimate Outcomes - NCO*

Stabilization of innovation-classroom (NCO-INNOSTAB/CLASS): Degree to which new practice or program has "settled down" at classroom or operational level, including
Start List of Codes (cont'd.)

characteristics of stabilized practice.*

User outcomes (NCO USEROUT): Observed or perceived outcomes at the classroom level that are a consequence of using the innovation.*

User spin-offs and side effects (NCO-USER SIDE): Observed or perceived outcomes of the innovation that are unintended.*

Classroom institutionalization (NCO-INST/CLASS) Indices of regular of routine use of the innovation.*

Patterns of Assistance

Patterns of Assistance (ASS): How assistance is solicited and the flow of assistance from giver to receiver
ASS-UN: Unsolicited assistance
ASS-RG: Request for assistance is granted
ASS-NG: Request for assistance is not granted
ASS-UN/A-T: Unsolicited assistance from administrator (A) to teacher (T), and other various combinations of assistance to, from students (S)

Selections Regarding Who Uses the Computers

How decisions are made regarding who uses the computers (SEL): Administrator may select (SEL-A), a teacher selects (SEL-T), students self-select (SEL-SS), or other students selects (SEL-OS)

Queries-QU*

Surprises (QU-!): Material from interviews, observations, documents that is striking given other data collected previously.*

Puzzles (QU-Q): Material from interviews, observations, documents, etc., that cannot be accounted for and needs further analysis.*

Final Code List

AdCon: Administrator Concerns/Concerns the administrator has about implementation of the innovation
-see also: InExp-a

AdLead: Leadership the administrator shows, expresses as necessary to implement the innovation

AdSup: Administrator Support: The support teachers and students express as needing to implement or use the innovation

AnticUse: Anticipated Use/How administrator or teachers anticipate how computers will be used

AnticOut: Anticipated Outcome/How administrator or teachers anticipate how computers will effect student learning and behavior.

AnticUseS: Anticipated Use-Students: How students anticipate how computers will be used and/or benefitted from

Chron: Event Chronology: chronology during initial and ongoing implementation*

Classdif: Differences noted between the two classes

Crit: Critical Events/observed or stated incidents or moments that are judged as critical in determining the direction and outcome of implementation, including crises, conflicts, moments of decision, departures and arrivals, and interventions.*

Comtime would (b,as,t) The amount of time students indicate they like to use the computers (or amount of time the teacher would like to assign students to work on the computers)

GenIiss: Gender Issues: Gender issues operant in lab dynamics

AgeIiss: Age Issues: age issues operant in computer use

ImpProb: Implementation Problems/ Difficulties or (concerns) relating to implementation at the personal, classroom, or organizational level -see also TechProb, TeaCon, AdCon
Final Code List (cont'd)

\textbf{InnUse-b,as,t}: Innovation Use/ How beginning (b), more advanced (as) students and teachers use the innovation

\textbf{InExp-b,as,t}: Initial User Experiences/Emotions, problems or (concerns), assessments made by teachers, students, and administrator during first months of the innovation

\textbf{LaExp-t,b,as}: later user experiences

\textbf{Labdif}: Differences in CALL use between the two classes

\textbf{Labmon}: Issues associated with the role of the lab monitor

\textbf{MultiLev}: Multi-Level/Problems, issues associated with multi-level nature of program

\textbf{Pair}: Pair observations, issues, decisions regarding some aspect of how students are paired

\textbf{PedIss}: Pedagogical issues/concerns/decisions about how best to use the computer to teach English

\textbf{ProProbIss}: Program Issues or Problems/Problems or issues operant in program (not related to computer use)

\textbf{Sched}: Scheduling/ Issues associated with the scheduling of computer use in the program

\textbf{Sel}: Selection of Software for the particular class: Issues regarding the \textit{choice} of software to be used by particular students on particular day

\textbf{Softpref (b,as,t)}: Indications of software preferences and reasons given (beginners, advanced students and teachers.)

\textbf{Softsel}: Software Selection/Issues regarding the choice of software to be \textbf{purchased}

\textbf{SugImp (b,as,t)}: Suggestions for improvement of CALL use (beginners, advanced students, and teachers.)

\textbf{DecSel}: Decision Selection: issues regarding how decisions are made re: who uses the computers

\textbf{SplitLev}: Split Level Classrooms/Problems, issues associated with splitting levels

\textit{Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.}
Final Code List (cont'd)

StuNeeds: Student Needs/Issues having to do with the learning needs of the students

StuNew: issues, observations dealing with new students entering the program

TeaCon: Teacher Concerns: Concerns teachers express about the innovation see also InExpT

TeaPSM: How teachers describe their teaching philosophy style, methods

TeaRef: Instances of teachers "refining" CALL use.

TeaRes: Teacher responses to administrator suggestions

TechProb: Technical problems/associated with the implementation of the innovation

Coor: Coordination: Issues, instances regarding coordination between lab and teachers

TR-Class: Effects on classroom practice/Indications of impact of the innovation on routine classroom practices (e.g. management of class time, incorporation of computer lessons in class discussion, nature of group work, changes in lesson plans, changes teachers may report in their methods, theories*)

TR-Stu: Effects of innovation on students/Indications of the impact of the innovation on student roles as learners

TRExpla: (b,as,t) Explanations for transformations: Explanations by respondents of the reasons for which events occurred or effects observed during the implementation phase.*

ProbSol: Program problem-solving: Plans or strategies devised in solving problems in relation to the implementation of the innovation.*

PaceDif: Pace Differences: Evidence that students proceed at different paces and how innovation use is adjusted for this.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Final Code List (cont'd)

New Configurations and Ultimate Outcomes -NCO*

Stab: Stabilization of innovation. Degree to which new practice or program has "settled down" at the operational level, including characteristics of stabilized practice.*

Userout : User Outcomes/ Observed or perceived outcomes at the classroom level that are a consequence of using the innovation.*

SideEff: Side Effects: User spin-offs and side effects Observed or perceived outcomes of the innovation that are unintended.*

Surprises (QU—!): Material from interviews, observations, documents that is striking or unexpected in light of other materials from the site and require further analysis.*

Specific Research Questions Asked Repeatedly Over Time

QA1, QN1, etc. Research questions asked repeatedly of the two teachers (Alice=A, Quoc Nguyen =N) over time. Question 1=Q1, Question 2=Q2, etc.

HOW TO GET INTO ENGLISH EXPRESS
CÁCH VÀO ENGLISH EXPRESS

1) If different programs are listed, highlight windows for WORKGROUP and press the ENTER key.
   Nếu thấy một số Chương Trình khác nhau thì lựa WORKGROUP rồi bấm `lút ENTER.
2) On the MAIN SCREEN, you will see many little pictures (called icons) that represent various programs.
   Trong cài Màn Hình Chính (MAIN SCREEN), vị sẽ thấy nhiều hình nhỏ (gọi là icons), no tương ứng cho những chương trình khác nhau.
   Double-click the ENGLISH EXPRESS icon.
   Bấm cái hình nhỏ (icon) để là English Express hai lần.
3) After the spaceship lands, click “Esc” (which stands for escape) at the bottom of the white page that appears on the screen.
   Sau khi cất phi thuyền đáp, bấm “Esc” (nghĩa là tràn thoát ra) ở phía dưới của o giấy trên màn ảnh.
4) Next type in your name(s), and click “OK”.
   Kế tiếp, đánh tên của quien vô rồi bấm “OK”.
5) Now it is time to select a category of words to study. The first category that will appear is “Numbers”. Click the arrow pointing to the right until you see the category of words you want to study, eg. “occupation.”
   Bây giờ là lúc lựa chọn chủ đề học. Lớp chủ đầu tiên hiện ra trên màn ảnh là “NUMBERS”. Bấm cái mũi tên chỉ về bên phải phái cho tôi khi nào quien thấy lớp chủ đầu tiên muốn học, vì dụ như “Occupation” chỗ nghĩa nghề nghiệp.
6) Press “PHOTO DICTIONARY”.
   Bấm “PHOTO DICTIONARY”.
7) Now click on either “Explore” or “Answer”.
   Bây giờ bấm “Explore” hoặc là “Answer”.

TO LEAVE ENGLISH EXPRESS
RA KHOI ENGLISH EXPRESS

1) Open “Activity” and go to “Stop-esc”.
   Mở chủ “Activity ở trên rồi đi tới “Stop-esc”.
2) If you want to print the words - click on “PRINT WORDS”.
   (Nếu quien muốn in những chủ đề học thì bấm “PRINT WORDS”.
   If you want to print the dialogs - then click on “PRINT DIALOGS.”)
   Nếu quien muốn in các cuộc đối thoại thì bấm “PRINT DIALOGS”.
   Now click on “MAIN SCREEN”.
   Bây giờ bấm “MAIN SCREEN”.
3) Now open FILE and go to “QUIT”.
   Bây giờ mở FILE và đi tới “QUIT”.
4) A question will appear - “Do you want to leave the program?”
   Click YES
   Se có câu hỏi hiện ra như trên - “Qui vi có muốn ra khỏi chương trình không?” Bấm YES
APPENDIX K

TIPS FOR STUDYING ENGLISH WITH ENGLISH EXPRESS
TIPS FOR STUDYING ENGLISH WITH THE ENGLISH EXPRESS PROGRAM

1) Advance at your own pace. Do not worry if others are ahead of you. Take your time! Do not hurry!

2) Try to listen and repeat out loud WITHOUT seeing the sentence. Click on the sentence only to check if you understand correctly. Do not get in the habit of reading what you are hearing. Why? Because in real life you cannot read what others are saying to you.

3) Go through the EXPLORE lesson slowly and carefully. After you have finished all the words in the category, print the word list and the dialogs. Then go through the lesson again and review it. When reviewing, see if you can remember the word before you click it on.

4) In EXPLORE record your voice and compare it to the computer voice. Help your partner. If you think your partner is not pronouncing the word correctly, tell your partner.

5) Next study the words again in ANSWER. Be sure and print your sentences.

6) You and your partner should work as a team and help each other. Share the mouse and the keyboard with your partner. Advance at a pace that is good for both of you.
người học với mình. Học theo cái tốc độ của cả hai người.

7) If you do not understand the meaning of a word, then ask another student, the lab teacher, or look it up in the dictionary.

7) Nếu có chữ nào queer không hiểu thì hỏi người học sinh khác, giáo viên trong phòng computer, hoặc là có trong tự điển.

8) Keep the word lists and dialogs together in a folder and review them often.

8) Giữ những chữ và những câu nói thoại với nhau trong một cuốn vở hay là trong cái folder và ở nó thường xuyên.

9) You cannot break the computer, so don’t be afraid to use it!

9)Qui vị không có thể làm hư cái computer được, vì vậy đừng sợ và không giảm đúng nó.
APPENDIX L

COMPUTER LAB SESSION REPORT FORM
VITA

Susan Weishar was born in Fargo, North Dakota, in 1955. She grew up in Rock Island, Illinois. After graduating from college in 1977 she joined the Peace Corps. With the Peace Corps she taught secondary school in Western Samoa for two years. That experience put her on the path towards becoming an educator. It also sparked a deep and abiding interest in understanding other ways of life and cultural viewpoints.

For the past 13 years Susan Weishar has lived in southern Louisiana where she has had many opportunities to explore and experience the unique and ever-changing gumbo of cultures of the Pelican State.
DOCTORAL EXAMINATION AND DISSERTATION REPORT

Candidate: Susan Mary Weishar

Major Field: Educational Leadership and Research

Title of Dissertation: Implementing Computer-Assisted Language Learning in an ESL Program Serving Adult Refugees from Vietnam: Findings from a Qualitative Case Study

Approved:

[Signatures]

Major Professor/Chairperson

Dean of the Graduate School

EXAMINING COMMITTEE

[Signatures]

Date of Examination: March 21, 1997