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The Effectiveness of Using Computer Assisted Instruction in Teaching English as a Foreign Language in a Japanese Secondary School (Fukuoka, Japan)

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THE EFFECTIVENESS OF USING COMPUTER ASSISTED INSTRUCTION

IN TEACHING ENGLISH AS A FOREIGN LANGUAGE IN A

JAPANESE SECONDARY SCHOOL (FUKUOKA, JAPAN)

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Date: _____

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ACKNOWLEDGEMENTS

To my family

ABSTRACT

This paper examines the history and the current state of computer-assisted language teaching and learning to provide a context for the present study. A discussion of teaching English using computer-mediated communication in Japan is also described along with an explanation of the courseware used. The study involved one hundred eighty-six high school students learning Oral Communication 1 in a traditional classroom environment and in a computer classroom environment using Dynamic English 1 courseware. The participants were assessed quantitatively and qualitatively before and after five lessons to determine their progress and attitudes towards CALL. The students' results were analyzed and compared.

The major conclusion of the study is that CALL was most effective for those students who had a lower ability and the CALL lessons were interesting. Those students who had a higher ability found the courseware too easy for them and were likely to have lost interest, contributing to the unexpected results. A clear majority of the students would have liked to continue the CALL lessons for longer.

Descriptors:
English (Second Language), Computers, Programmed Instructional Materials, Computer Assisted Instruction, Language Tests

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CHAPTER 1

INTRODUCTION

My interest in Computer Assisted Language Learning (CALL) began when my

children were young and I was looking for educational software that would help them

acquire English language skills such as reading and listening. This was in the late 1980s

when personal computers were very expensive and there was a limited amount of

educational software on the market. The first computer I used was a Macintosh Plus by

Apple Computer, with a monochrome nine-inch screen, a twenty-megabyte hard disk

drive and four megabytes of random access memory (RAM). Although archaic by

today's standards, this computer system was sufficient to provide visual graphics

combined with sound to generate interest and stimulate curiosity in my five-year-old son

as he began to explore the English language.

What I found most interesting while observing my son learning how to read with

the aid of a computer, is that he was learning by himself. The computer software would

generate a word, display it on the screen, associate a picture with the word and then

pronounce it so that my son could hear it and he would say it out loud. Eventually, he

was able to make a certain amount of progress with his reading ability so that I could see

the benefits of learning a language with the computer and this led me to believe that the

computer was a useful tool in learning a language. Over the next few years, I was able to experiment with different software programs and deepen my understanding of computer-aided language learning. I could see the value of the software that provides the content as well as the computer hardware that makes it feasible. Furthermore, I could see the value for the learner.

In this paper, I will explore the relationship between CALL, the language teacher and the language learner. More specifically, I will try to determine the effectiveness of teaching English as a foreign language as related to my teaching context. I will attempt to do this by conducting a research project and analyzing the results. Moreover, I will discuss briefly the history of CALL and make a connection to using computers in today's classroom. I will then discuss the effectiveness of CALL and how a language teacher can make the most of classroom time to enhance the language learning of the students.

Teaching Context

I am currently employed as a full-time English language teacher at a private boys' secondary school, Nakamura Gakuen Sanyo Junior and Senior High School, in Fukuoka, Japan. Fukuoka, a city of 1.3 million people, is located on the island of Kyushu, in southwestern Japan. This city is an important center of trade and culture and has historically been a principal point of contact with Korea and China. The school curriculum is designed to prepare students to enter a Japanese university and there is a strong concentration on English subjects. The first year high school students are required to take a one-unit course called "Oral Communication I" (OC I) which is designed to give

the students exposure to modern English. When I first began teaching this course nine years ago, there were forty-eight students in each class and they were uninterested in the required textbook. It was very difficult to get the students to practice the example conversations and they were unresponsive to the listening tasks. I wanted the students to have some meaningful and appealing material that would stimulate their curiosity and motivate them to study English. It was then that I thought of using the computer room in my school, and after looking into the available commercial computer software, I decided to use *Dynamic English* (DynEd International, Inc.) courseware for some of the OC I lessons. I will discuss issues related to using CALL at a later point in the paper.

Research project

The research project took place from November 2003 to January 2004, at Nakamura Gakuen Sanyo High School, in Fukuoka, Japan. One hundred eighty-six students took part in this study. Of these, ninety-five students studied in the computer classroom and the other ninety-one students took traditional lessons from a teacher in a regular classroom. Moreover, of the ninety-five students who studied in the computer classroom, twenty-eight students were given computer classes without any guidance from a teacher other than simple instructions on how to use the computer and the courseware. The other sixty-seven students were offered computer classes with teacher instructions on how to use the computers and the courseware, and they were also given English lessons directly related to the subject matter prior to the students using the computers. In all cases the classroom size was limited to a minimum of ten students and a maximum of

twenty students. Four different native English teachers were involved in teaching the

students. The teachers were instructed on how to use the courseware and gave the same

type of lessons to the students. The students were assessed prior to beginning the lessons

and the same assessment was offered again after completing five lessons to quantitatively

measure their progress over a five-week period. Alternatively, a qualitative assessment

was also performed before and after the lessons to measure the students' attitudes about

learning English with the aid of a computer.

There were three main goals of the research. The first goal was to determine if

the students learning English at this school benefited from the CALL lessons and if so, to

ascertain this gain quantitatively. The second goal of this research was to determine if

pre-teaching in the computer classroom helped the students learn better and if they

enjoyed the lessons more if they had pre-teaching. The third goal was to determine if the

students liked using computers and if they preferred using computers to traditional

classroom teaching. The results of the research and a discussion will follow later in this

paper.

CHAPTER 2

A HISTORICAL PERSPECTIVE OF CALL

The emergence of computers for learning languages can be divided into four

episodes. An early time period that set the stage for the development of computers, a

second period when large mainframe computers were used, a third period after the advent

of personal computers (PCs) and the fourth period that is the present day era with the

implementation of multimedia and the Internet. As will be seen, each time period lasts

about twenty years.

First Episode – The Beginning of Computers

The first episode began in 1939 when the earliest electronic computer was

produced at Iowa State University. The father of the computer, John Vincent Atanasoff,

is credited with the first ideas of the binary system of arithmetic, parallel processing,

regenerative memory and a separation of memory and computing functions (Iowa State

University 2000). These ideas still apply to present day computers. Atanasoff succeeded

in building a machine, with the help of graduate student Clifford Berry, that solved partial

differential equations. A second electronic computer was designed and built by Alan

Turing for the British military in 1943, which was called Colossus, and played a role in

breaking German codes used during World War II.

The initial general-purpose programmable electronic computer was built at the University of Pennsylvania in 1945. It was funded by the Army, which needed a way to compute ballistics during World War II, and was used extensively for calculations during the design of the hydrogen bomb. It was also used for research on the design of wind tunnels, random number generators, and weather prediction (Computational Science Education Project 1991). Early computers were thus used by a select group of scientists and few people had access to them. Accordingly, the beginning days of computing were mainly a time for the development of computer science itself.

Computer-assisted instruction (CAI) and the technology for learning languages on computers began taking roots in the late 1950s (Chapelle 2001: 3). The principles behind technology-enhanced language learning were strongly influenced from the work of the behaviorist, B. F. Skinner. In 1954, Skinner advocated the use of teaching machines for individualized instruction which would be responsive to the preferred pace of the learner. According to the behaviorist, language learning occurs by the formation of habits based on the notions of stimulus, response and reinforcement. Especially, complex learning requires a series of small steps and reinforcements to succeed at each step (Skinner 1954: 86-97). Skinner also accounts for the acquisition of syntax. He claims that the structure of a sentence consists of a chain of associations between the words in the sentence (Skinner 1957). Skinner was an influential academic who inspired language educators to pursue technological means for learning languages.

Second Episode – Behavioristic CALL

The second episode of CALL can be referred to as "Behavioristic CALL" (Warschauer 1996: 3-20). It began with the PLATO (Programmed Logic for Automatic Teaching Operations) Project, which was initiated at the University of Illinois in 1960. At that time, computers involved large-scale systems that required well-funded team efforts. This project was used to teach foreign languages as well other subjects. PLATO was designed specifically to provide interactive, self-paced instruction for large classes. This system had a number of innovative features such as "notes files," which allowed users to communicate among themselves (Levy 1997: 16). This was a kind of restricted e-mail system, and it formed the basis for the future development of the e-mails that we use today on the Internet. The PLATO system included vocabulary drills, brief grammar explanations and drills, and translation tests at various intervals. Based on the behaviorist influence of the time, repeated exposure to the same material was deemed beneficial or even essential to learning. A computer was thought of being ideal for carrying out repeated drills since the machine did not get bored with presenting the material over and over again and could also provide immediate and non-judgmental feedback. The material could be presented on an individualized basis, allowing students to proceed at their own pace (Warschauer 1996: 3-20).

PLATO was a sophisticated tutoring system with its own special hardware running on mainframe computers and terminals. Another notable mainframe computer CALL system was originated at Brigham Young University in 1971. This project was called Time-Shared, Interactive, Computer-Controlled Information Television (TICCIT).

This system was different from the PLATO system in that it used a television as a monitor and allowed a combination of text, audio and video as a multimedia tool. TICCIT was designed around a specific theory of learning or teaching, and remains one of the few computer systems devised for this purpose (Levy 1997:18). These early projects enabled a creative base for professional expertise in CALL and the ensuing courseware to develop for those systems that eventually supported audio output, graphics and a flexible response analysis. Design limitations of the hardware and courseware, however, made further development on this platform difficult to continue beyond 1981 and a new CALL system was now desired (Chapelle 2001: 7).

<center>Third Episode – Communicative CALL</center>

The third episode of CALL began in the early 1980s with the development of the microcomputer or PC. This period of CALL can be referred to as "Communicative CALL" (Warschauer 1996: 3). A number of companies such as Apple, Commodore and Radio Shack began making PCs in the late 1970s and this enabled software programmers to develop completely new CALL programs and a new wave of educational software began to appear in the marketplace. Language teachers could also now become CALL programmers as the feasibility of writing such programs was made available to them by such tools as BASIC, *Storyboard* and *HyperCard*.

Because a PC did not have to be connected to a mainframe computer, language teachers and learners did not have to be present at a university, company or classroom and users could install the software by floppy disks to explore the potentials for language

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learning at their own place and time. This newfound freedom was complemented with

new language learning methodology becoming popular at the time with Stephen

Krashen's views of second language acquisition (1982). According to Krashen, language

acquisition and language learning are separate processes. Language acquisition refers to

the subconscious process that children use in acquiring their first language. Language

learning refers to the conscious process that results in knowing about language. It can

also be said that acquisition is the result of natural interaction with the language via

meaningful communication and learning is the result of formal study in which the learner

is made to focus on linguistic forms and rules (Mitchell 1998:35). This methodology was

markedly different from behaviorist thinking because it replaced repetitive drilling

exercises with interactive learning. One of the main advocates of using this new

approach was John Underwood who proposed a series of "Premises for 'Communicative'

CALL." According to Underwood, Communicative CALL:

> Focuses more on using forms rather than on the forms themselves.
> Teaches grammar implicitly rather than explicitly. Allows and
> encourages students to generate original utterances rather than just
> manipulate prefabricated language. Does not judge and evaluate
> everything the students nor reward them with congratulatory
> messages, lights, or bells. Avoids telling students they are wrong and
> is flexible to a variety of student responses. Uses the target language
> exclusively and creates an environment in which using the target
> language feels natural, both on and off the screen; and will never try to
> do anything that a book can do just as well (Underwood 1984: 52).

The growth of the PC in the 1980s and 1990s was very significant. In the

developed world, a growing number of people got access to a computer either at school

or at home with access to the Internet and e-mail. The use of computers for CALL,

however, had been somewhat disconnected. Communicative CALL had made significant advances over Behavioristic CALL, but because second language learning is enhanced when the four skills–listening, speaking, reading and writing–are used, some critics had pointed out that contributions to the learning process had been marginal rather than substantial.

<center>Fourth Episode – Integrative CALL</center>

The fourth episode of CALL takes us to the present moment. This period can be referred to as "Integrative CALL." Recent developments in computer technology have added greater speed to the processing power of PCs and this has allowed enhanced use of digital video, sound, graphics and animation in CALL courseware. As computer hardware improves, there is the potential for the software to improve also. Due to these advancements, language-learning software can now make use of speech recognition technology, which digitizes the oral input of the learner and is interpreted by the courseware for analysis. Moreover, as the connection rate to the Internet gets faster, it now becomes possible to integrate language learning with video conferencing, that allows learners to communicate with interested parties in other countries. This trend combined with more efficient use of multimedia, including the use of DVD media, leads to a more authentic learning environment.

Combining the resources available to courseware developers will enable a more transparent integration of using an activity on the computer to let the learners listen to native language speech, read a text, write a response and express an oral statement.

There could be a greater emphasis on content without sacrificing focus on language forms and meaning. Students can have greater control over their learning by accessing the pace of instruction, by choosing their appropriate language level, by selecting specific tasks that they might want to practice such as pronunciation or grammar exercises and by making use of artificial intelligence, the courseware can be programmed to encourage the learner to adopt an appropriate learning strategy. It will be interesting to see what can be done to complement the needs of the learner twenty years from now.

CHAPTER 3

USING CALL IN JAPAN

The Japanese Ministry of Education, Culture, Sports, Science and Technology has outlined that every secondary school in Japan must have at least one computer classroom for students to use, in order to implement its curriculum for the future of Japanese society. According to ministry statistics (2003), there is an average of ninety-five computers per high school, or two computer classrooms for educational purposes. Moreover, the government is encouraging schools to place computers in every classroom by 2006 according to its Millennium Project (Irie 2004: 11). Although there is adequate computer hardware available in Japanese schools, the students do not get enough practical use on the computers because of the traditional teaching focus on how to pass entrance exams, contributing to the neglect in the use of computers for learning (Pattimore 1999: 9).

English Education and Computers

The Japanese education system is made up of six years of elementary school, three years of junior high school and three years of senior high school. English as a foreign language is taught in Japanese public schools for six years beginning in the first

grade of junior high school. About six English lessons per week are taught in public high

schools and each lasts for fifty minutes. The English courses offered to high school

students include: Oral Communication I (OC I), Oral Communication II (OC II), English

I, English II, Reading and Writing.

The objectives of OC I, as stated by the ministry (2003), are as follows:

> To develop students' basic abilities to understand and convey
> information, ideas, etc. by listening to or speaking English, and to
> foster a positive attitude toward communication through dealing with
> everyday topics.

Also, according to the ministry, English courses should follow these guidelines:

> In the instruction of each subject, teachers should innovate in terms of
> teaching methods and styles, incorporating team-teaching, pair work,
> group work, etc. as appropriate and utilizing audio visual teaching
> materials, LL, computers, communication networks, etc. Moreover,
> classes conducted in corporation (sic) with native speakers etc. should
> be positively adopted to develop students' communication abilities and
> to deepen their international understanding.

As can be seen in the ministry's guidelines, using computers for teaching English

is encouraged. In a recent review of OC I textbooks approved by the Ministry, even

though 61% of the textbooks had entries concerning computers, only a small number of

them involved the use of computers. None of the textbooks surveyed, for example, had

tasks supporting the use of e-mail, using the Internet or making a homepage. The

textbooks did, however, have stories written about e-mail (42%), the Internet (26%) and

computers in general (26%) (Irie 2004: 12). This illustrates that OC I textbooks do not

encourage learners to use computers for improving their English language skills. It is up

to the teacher to take the initiative and introduce CALL to the curriculum.

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Oral Communication I is taught at Nakamura Gakuen Sanyo High School one lesson a week by a native English teacher. In 1996, there were forty-eight students in a class but they were not motivated to study English and unresponsive to the lesson tasks. After consulting with the English Department on a possible alternative of lesson styles, and taking into account the fact that the school had just built a new computer classroom, it was decided that a CALL approach would be appropriate.

Starting a CALL Program

The most challenging part of the process of starting a CALL program at our school was to convince the school administration to purchase the computer software to be used. Although the school had just spent a large amount of money in building a modern computer classroom, there was little money allotted for buying software. It is common for schools in Japan to spend vast sums of money for computer hardware but very little for software (DeLaet 1997: 139).

To support our initiative, a proposal was written with the estimated cost of the software and a proposed syllabus. After numerous discussions and strong arguments made for the proposal, a budget of one million yen (about US$10,000) was approved and it was decided to incorporate CALL into the curriculum in April 1997. The school then purchased 24 copies each of *Dynamic English 1-A* and *Dynamic English 1-B* (DynEd International, Inc.).   The CALL program was thus started at our school and has been in use for eight years. A detailed discussion of the courseware will follow in the next chapter.

It is said that young Japanese students in general are often reticent and unresponsive language learners, but when given a chance they can also be independent learners (Poole 2003: 9). Elementary school students in Japan are quite creative and they are very familiar with collaborative projects. This is achieved by a delegation of responsibilities and group formation along with a low profile of the teacher (Edwards 2004: 22). A big change occurs when they enter junior high school, however. The freedom of expression and learner-centered methods that are used in elementary school education are replaced with passive lectures and conformity in secondary education. The students in junior high school begin to wear school uniforms, their hairstyles are regulated and learning becomes submissive to teaching. Students are rarely encouraged to ask questions and are not involved in their own learning. Group projects and creative work are replaced with exam taking and preparations for entering university. As a result, it is to the advantage of the students to have a computer-assisted language learning environment to encourage them to take more responsibility for their own language learning, to increase their confidence level by having them do tasks that are not overwhelmingly difficult and to intrinsically motivate the students by providing them with interesting material.

Although it appears that having a CALL program in a Japanese secondary school would be beneficial to the students, there are some problems related to implementing such a program. One of the difficulties remains that CALL is not an accepted educational solution among all teachers. Some educators in Japanese secondary schools believe that their prime function is to help the students enter a Japanese university and they believe

that CALL does not assist them achieve that goal. Moreover, the virtual reality of learning a language with a computer signifies to some that it is not the same as authentic communication between human beings (Kizuka 1998: 29). There is a perceived threat that language learners who use computers will not be able to convert their learning to real life situations. This threat could emanate from the fact that there is a belief that children who spend long hours playing video games may develop inferior social skills (Sheff 1994). Correspondingly, it could be argued that the individualized study of CALL learners does not foster cooperation among classmates. Another problem that must be addressed is that the role of the teacher in the CALL classroom is not clear. Especially in the case of using a native English speaker in a Japanese high school, there are some feelings that this is a superfluous use of teacher resources. Some would say that a teacher is not needed in a CALL environment.

Furthermore, the selection of the software material is another point of contention. What is the best material to choose? How effective is it? How much does it cost? From the point of view of the administration, it is not clear that a disbursement of funds for software will lead to a corresponding benefit for the students. There is a tendency of using the Internet and e-mail as a way to evade paying for language learning software. All of these issues are relevant when planning to start a CALL program in a school and will be addressed in the last chapter of this paper.

Nevertheless, it is important to understand that creative learning activities are satisfying to learners and CALL is a useful tool used for enhancing the learning

experience. For CALL to become a valuable experience, it must be tailored to suit the

needs of the learner, and the potential of what CALL can offer must be understood.

CHAPTER 4

COURSEWARE DESCRIPTION

Introduction

Courseware can be defined as instructional software, which was published for the

purpose of studying a specified subject. This chapter will describe the courseware that

has been used at Nakamura Gakuen Sanyo High School with first year high school

students to complement the curriculum for Oral Communication I.

This courseware is titled *Dynamic English* (DynEd International 1994) Version

2.0 (Localized for the Japanese market). Released in 1997. Level 1 Disk 1. The

courseware is stored on a CD-ROM and is accessed directly through the optical drive of a

personal computer or stored on the hard disk drive. The courseware is compatible with

computers using the Windows operating system (3.1 to XP) or the Macintosh operating

system (8.6 to 10.3). The courseware has four levels with two CD-ROM disks for each

level, for a total of eight CD-ROM disks (Level 1, Disks 1 and 2; Level 2, Disks 1 and 2;

Level 3, Disks 1 and 2; Level 4, Disks 1 and 2).

The following is a brief description of what the courseware has to offer. This is

not a complete report and does not include all of the vocabulary and language patterns

that the courseware introduces to the user. There will be some detailed information from

Level 1 Disk 1 of the courseware, with greater emphasis on Lesson 1. A partial transcript of the audio portion of the courseware is written with some comments about the use and functions of the courseware. There will also be a basic description from Lesson 2 to Lesson 6 without a transcript, but with some information of what those lessons offer the language learner. Throughout this chapter there will be some images (screen captures) that have been taken from the courseware to illustrate the visual potential of the courseware. Permission has been granted by the publisher of the courseware, DynEd International, to reproduce these images in this manuscript.

Description of Lesson 1

To start using the program, the students must have a CD-ROM containing the courseware and insert it in the optical drive of a personal computer. The students then insert a floppy disk that will store the student's record of use (there is an option of saving this record to the hard disk drive of the computer or on a network server). When starting the courseware for the first time, the user types his or her name with a keyboard and then starts the courseware by clicking on the "start" button with a mouse. The startup screen then appears on the computer monitor (Figure 1). On the first disk of Level 1, there is a list of six lessons to choose from: Names and Places; Question Practice; Jobs and Family; Numbers and Times; Dictations; and Fill-Ins. The students are encouraged to study the lessons in the order of appearance. The student uses the mouse to click on the title of the target lesson.

Figure 1. Dynamic English 1 Startup Screen

After selecting the first lesson–Names and Places– the learner sees a screen with a man and a woman (Figure 2). These images are computer generated and there is a slight movement of the mouth and eyes when a character is speaking. The audio is very clear and the listener hears distinctive male and female voices.
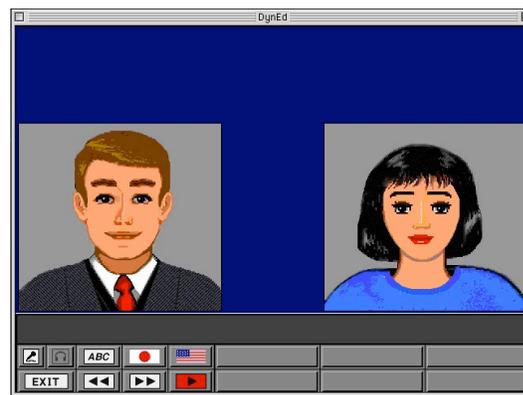
Figure 2. Lesson 1 Initial Screen

The first step in this lesson is a passive listening segment. The student listens to a

man's voice, which is output from the audio speakers or headphones from the computer and the courseware changes the images automatically, with no input from the learner. The learner can stop each screen by clicking on the "pause" button, by clicking on the "translation" button to hear the same phrase in Japanese, or by clicking on the "repeat" button to hear the same phrase again in English (figure 3).   There is also the ability to see the written text by clicking on the "ABC" button. To continue, the learner clicks on the "continue" button which changes to a "pause" button.
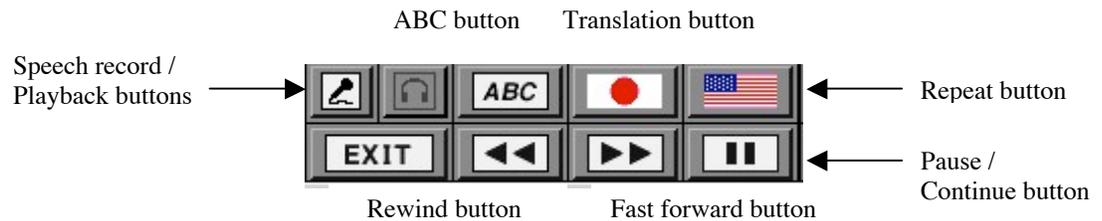
Figure 3. The Control Bar

The following is a transcript of the dialogue that is heard by a learner from the Dynamic English 1 Courseware Level 1 Disk 1:

```
Man 1:   Welcome.  Look at the pictures.  Listen carefully.
         This is Max.
Man 2:   My name is Max.  Hello, my name is Max.
Man 1:   This is Kathy.
Woman:   Hello, my name is Kathy.
Man 2:   What is your name?
Woman:   My name is Kathy.  What is your name?
Man 2:   My name is Max.
Woman:   Where do you come from, Max?
Man 2:   I come from San Francisco.
Woman:   San Francisco?
Man 2:   Yes, San Francisco in California.
Man 1:   Where does Max come from?
```

(At this point, the courseware pauses until the student answers the question by clicking on one of two possible answers. (See Figure 4). After clicking on the image of San Francisco, a man's voice says; "Yes, that's right." Then the next screen appears).

```
Woman:   I come from New York.
Man 2:   New York?
Woman:   Yes, that's right.
Man 1:   Yes or no.  Does Kathy come from New York?
```

(The learner clicks on the "Yes" answer)

```
Man 1:   This is Pierre.  He comes from Paris, France.
         He doesn't come from the United States.
Man 3:   Hello, my name is Pierre.  I come from Paris, France.
         I don't come from the U.S.
Man 2:   Who is that?
Woman:   His name is Pierre.
Man 2:   Does he come from the United States?
Woman:   No, he doesn't.  He comes from France.
Man 1:   Who comes from France?  Max, Kathy or Pierre?
```

(The learner clicks of the picture of Pierre).

```
Man:   Yes, that's right.
```

(The learner clicks on another picture).

```
Man:   No, that's not correct.
```

(If the wrong answer is chosen, the courseware re-introduces Pierre again).
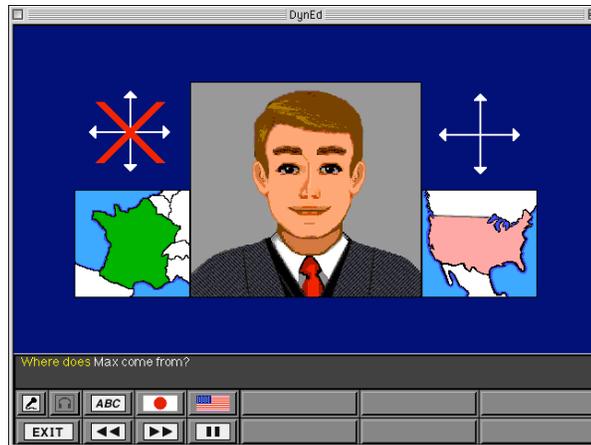
Figure 4. Lesson 1 Question: Where does Max come from?

```
Woman:   Pierre is the one who comes from France.
Man 1:   This is our world.
Man 2:   Where is France, Kathy?
Woman:   France is in Europe.
Man 1:   Look, this is a map of the world, and here is Europe.
         Here is a map of France.
         Paris is in France.
         The U.S. is here.  (See Figure 5).
         The Atlantic ocean is here, between the U.S. and
         Europe.
Man 3:   Oh, I see.  This is the U.S.
Woman:   Yes, that's right.
Man 3:   Where is New York?
Woman:   It's here.  New York is in the U.S.
         Comprehension check.
Man 3:   Where is Japan?
```

(Learner clicks on the map of Japan).

```
Man 1:   Yes, that's right.  Japan is here.
         Look at the pictures.  Listen carefully.
         This is Max.  Max comes from the United States.
         He doesn't come from France.
Man 2:   Hello, my name is Max, and I come from the United
         States.
Man 1:   This is Kathy.  Kathy comes from New York.
         She doesn't come from Paris.
Woman:   Hello, my name is Kathy.
         I come from New York.
         I don't come from Paris.
Man 1:   Yes or no.  Does Kathy come from New York?
```


Figure 5. Lesson 1. The U.S. is here.

(Learner clicks on "Yes" button, and the computer says, "Yes, that's right." If the learner clicks on the "No" button, the computer says, "Please try again.")

```
Man 1:   This is Pierre.  He comes from France.  He doesn't
         come from the Unites States.
Man 3:   My name is Pierre.  I come from France.  I don't come
         from the U.S.
Man 1:   Max and Kathy are from the U.S.
         Max comes from San Francisco and Kathy comes from New
         York.  They don't come from France.
Man 2:   That's right.  Kathy and I don't come from France.
Man 1:   Comprehension check.  Lisen to the question and point
         to the correct answer.
         Where does Max come from?
```

(Student clicks on the map of the United States. Computer says, "Yes, that's

right.")

```
Man 2:   I am from the U.S.  I don't come from France.
Man 1:   Where does Pierre come from?
```

(Student clicks on the map of the France. Computer says, "Yes, that's right.")

```
Man 1:   Does Max come from France or does he come from the
         United States?
```

(Student clicks on the map of the United States. Computer says, "Yes, that's right.")

```
Man 2:   That's right.  I come from the United States.  I
         don't come from France.
Man 1:   Thank you for your effort.  Do you want to try again?
```

(Student clicks on the "No" button. End of session. The screen goes back to the startup screen and computer waits for the user to make a selection. If no selection is made after a few minutes of inactivity, the courseware asks, "Are you there?" The user can quit the application by clicking on the "Exit" button. If no further action is made, the courseware quits the application automatically. End of lesson 1).

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The first lesson ends with the courseware making a decision to revert the screen to the initial startup screen (Figure 1), allowing the learner to either do the same lesson again or to go on to the next lesson.

One of the main features of the courseware is the "Shuffler level." This function has been programmed into the courseware to gradually increase the level of difficulty for the learner, encouraging the learner to repeat each lesson a number of times and gradually introducing different and more challenging vocabulary and grammar as the lesson progresses to a higher level. Additional sentences, more difficult comprehension questions and new characters are also introduced. The Shuffler level works seamlessly within the courseware and the learner does not necessarily realize that new language is being introduced when a lesson is attempted for a second or third time. The Shuffler level ranges from 0.0 to 3.0, indicating the interactive level of difficulty. As the Shuffler level rises, the courseware increases the depth or difficulty of the lesson accordingly.

In Lesson 1 for example, the learner will hear the sentence, "Max is from San Francisco." When the student tries the same lesson again, the Shuffler level will increase and the sentence will be changed to, "Max comes from San Francisco." Without being aware of the change, the student is learning implicitly that, "…is from…" and "…comes from…" have the same meaning. This change could be taught explicitly at a later time by a teacher, in order to reinforce the learning process. As the Shuffler level increases, the learner will find out more about Max, Kathy and Pierre, what languages

they speak, and eventually a new character is introduced who is not from this planet. This provides a comic respite to what is a fairly normal English lesson.
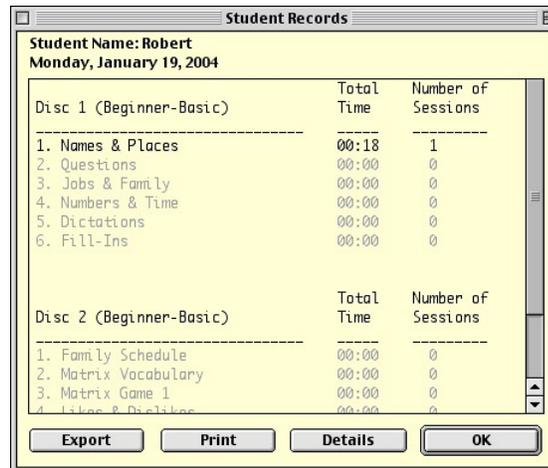

```
                          Student Records
Student Name: Robert
Monday, January 19, 2004
                                  Total     Number of
Disc 1 (Beginner-Basic)           Time      Sessions
---------------------------       -----     ---------
1. Names & Places                 00:18     1
2. Questions                      00:00     0
3. Jobs & Family                  00:00     0
4. Numbers & Time                 00:00     0
5. Dictations                     00:00     0
6. Fill-Ins                       00:00     0


                                  Total     Number of
Disc 2 (Beginner-Basic)           Time      Sessions
---------------------------       -----     ---------
1. Family Schedule                00:00     0
2. Matrix Vocabulary              00:00     0
3. Matrix Game 1                  00:00     0
4. Likes & Dislikes               00:00     0

    Export        Print        Details        OK
```

Figure 6. Student records indicate time and number of sessions.

To facilitate the learning of the student, it is desirable for the teacher to explain about the Shuffler level and to show to the student how to access that information. Therefore, before the student has finished studying Lesson 1, it is appropriate for the teacher to demonstrate this. The student can access this information by clicking on the "Options" menu item at the top of the screen and choosing "Student Records." A new window will appear (Figure 6) with a list of data that is useful to both the teacher and the student. The teacher can observe which lessons the student has studied and can advise the student accordingly and also use this information as a form of assessment. The student can look at this information and decide what lesson to study according to the data. A student can, for example, decide to do Lessons 1 and 3 and skip Lesson 2 for later. By

viewing this data, the student can easily see how much time has been spent on a

particular lesson and how many times that lesson has been accessed. If Lesson 2 has

been skipped, it can be noticed easily and a choice can be made to do it then or later. It is

useful for the student to assess himself or herself as a tool for motivation.
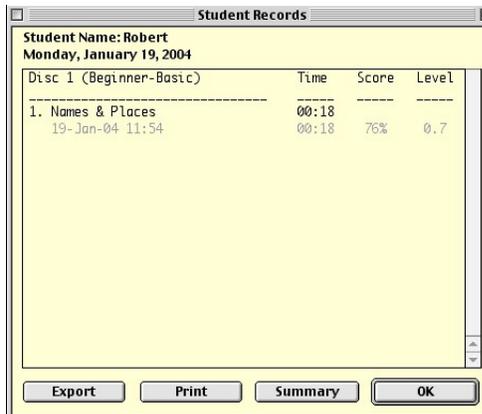
Figure 7. The student records indicate time, score and Shuffler level.

In order to view the Shuffler level, the user moves the mouse to click on the

"Details" button at the bottom of the Student Records window. A new window appears

with information about the Time, Score and Level of each lesson. The Time column

indicates how much total time has been spent on a lesson. In Figure 7, the student has

spent a total of eighteen minutes on Lesson 1. Also, as written below Lesson 1, the date

and time of each access is indicated. The Score column indicates what percentage of

questions the student answered correctly. This result determines how fast the Shuffler

level increases to the next level. In the Level column, the value of the Shuffler level can

be seen. Here, the student has reached Level 0.7. In this school, the students were

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instructed that their work was satisfactory when their score was 80% or higher with a

Level of 2.0 or better. The decision to use these numbers was made after several years of

experience and observing the students' ability in completing the lessons. The

information provided by the Student Records is very valuable and the data can be printed

on paper or exported to a floppy disk for teacher assessment or student self-evaluation.
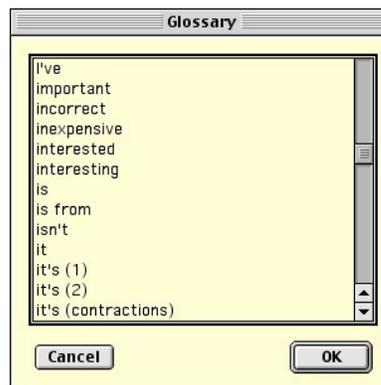
Figure 8. The Glossary List Window

Within the courseware, there is a glossary that is available to the students at all

times. The student has a choice of looking up a word that is difficult to understand and

cannot deduce it from the meaning of a sentence. The glossary list (Figure 8) is

accessible from the Options menu item at the top of the screen, which provides a list of

words that the learner can choose to look up. Alternatively, a learner can click on a word

displayed in yellow above the Control Bar (In Figure 4, "Where does" and Figure 5

"here" are displayed in yellow and are thus linked to the glossary by clicking one time on

the word), and the word will appear in a new window with a Japanese translation and some examples of use (Figure 9).
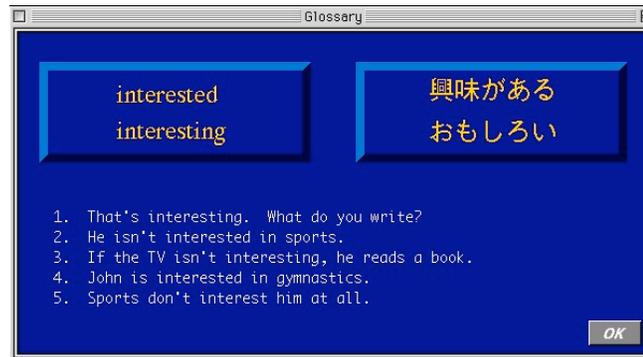
Figure 9. The Glossary Word Window

Lesson 2 – Question Practice

This lesson is used to demonstrate the use of "where" and "who" questions by reviewing the language observed in Lesson 1.   As displayed in Figure 10, the student is shown a screen with the pictures of three characters, two maps and a question mark. Next to the Tool Bar, there is a choice of "Who?", "Where?" and "DynEd Bell" buttons. The learner is instructed by the courseware to click on a "Who?" or "Where?" button, then choose to click on a character or a map and finally to click on the "DynEd Bell" button. This will result in the courseware saying something like this, "Who is this?" and the answer will come, "This is Pierre." Consequently, the learner constructs the question by associating the pictures and listens to the result. An alternative is to click

on the question mark between the two maps. Then, the courseware will make its own

question and the student must answer the question by clicking on the appropriate picture.

The goal is to associate the "Who?" question with a person and a "Where?" question with

a location.
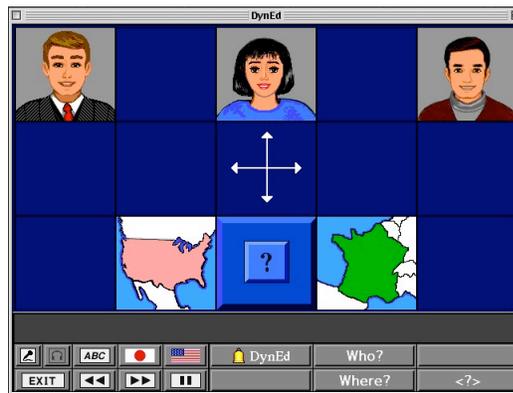
Figure 10. Lesson 2: Question Practice

Lesson 3 – Jobs & Family

This lesson provides the bulk of information to be learned on the CD-ROM. Its

title best describes the content. It deals with four characters who have different

professions and have a different marital status. Here is a brief summary of the story,

which unfolds throughout the lesson. Richard Chin is thirty years old, he is a teacher, he

doesn't have much money, he is married and they have a five-year old son. They live in

a small apartment. Sara Scott is a doctor, she is twenty-eight years old, she works in a

large hospital, she works hard and she has a high salary. She isn't married but she has a

boyfriend who is a pilot. She lives in an expensive apartment with her sister, Chris.

Chris is a ballet dancer, she is twenty-four years old, she loves to dance but she has to

practice hard everyday. Henry Thornton is a businessman, he is thirty-five years old, he

doesn't work hard, but he has a lot of money. His parents are rich and they live in a

large, expensive house. Henry isn't married but he is in love with Chris. Unfortunately,

she doesn't like him, and Henry is not very popular with women.

Figure 11. Richard and his Family (Left) and the Characters (Right) from Lesson 3.

The above storyline makes it easy for the courseware to ask questions about the

lives of the characters and there are a lot of questions asked while listening to different

parts of the story. It is beyond the scope of this paper to go into great detail about the

questions, however, some of them are typical questions that are asked in communicative

English classes. For example, "Where does Sara's sister live?", "Who lives with Chris?",

"How old is Richard?", "Does he have children?", "Who is a doctor?", and other

questions about the lives of the characters in the story. The questions are asked after the

material is presented. Usually, the student hears the question and there is a choice of

answers to be selected (Figure 11).

Lesson 4 – Numbers and Time

This lesson introduces the numbers 1 to 100, the clock times, including half an hour and a quarter of an hour, before and after, as well as telephone numbers. Initially, the student is given a choice of learning about numbers or learning about time.
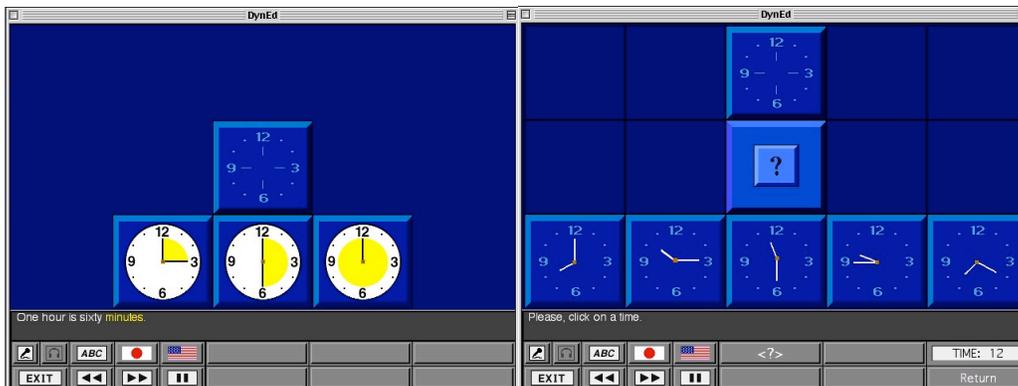
Figure 12. Learning about the Time (Left) Questions (Right) from Lesson 4.

As in previous lessons, the new material is first introduced with audio and visual cues, a few examples are presented and then the learner is asked to answer some questions by selecting the appropriate answer. Throughout the course, the learner has the option of seeing the text written above the Toolbar, or hearing the Japanese translation by clicking on the translation button. The ability to get language help reassures the student that the tasks are not threatening.

Lesson 5 – Dictations

This unit provides a review of the first four lessons by focusing on important language at the word and phrase level. At first, the key sentences are presented with the

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previously known characters and graphics while the learner listens to the audio

introduction. The screen then changes and displays fifteen words at the top of the screen

and numbers one to four at the bottom of the screen, with the middle part of the screen

remaining blank (Figure 13). The learner clicks on one of the numbers and a sentence is

read by the courseware. Part of the sentence is displayed in the middle of the screen, but

some of the words are missing. These words are replaced with dotted lines. It is the

object of the lesson to replace those dotted lines with words from the top of the screen.

Figure 13. Dictations from Lesson 5.

In Figure 13, for example, the courseware reads, "Hello, my name is Kathy." The

screen displays, "Hello, ---- ---- ---- Kathy." The learner must select, "my", "name" and

"is" from the list of words at the top of the screen, one word at a time and click on the

correct space in the sentence and insert the word in the proper location. Once placed in

the sentence, the selected words will turn yellow. The learner can press the "Repeat" button if necessary. A word can be changed at any time by clicking on another word from the selection.

When the learner is ready to check the answers, he or she will click on the "Score" button and the courseware will calculate the answer as a percentage number. If the total is less that 65%, the student will be asked if he or she would like to redo the dictation. If the score is greater than 65%, the learner will hear each sentence again, and the errors will be indicated with words changing to red. There will be an opportunity at this time to correct the errors. Once the words are correct, they will turn white.

Lesson 6 – Fill-Ins

Lesson 6 does not require the learner to listen to the sentence before completing the activity. This lesson also constitutes a review of previously learned material and its main focus is on grammar form and use. A screen appears with some pictures at the top and a choice of five words below the pictures (Figure 14). There is a sentence below those words and there is a gap in the sentence. The leaner is expected to choose one of the words from the list and place it in the sentence. Once the correct word is chosen, the courseware automatically changes the screen to the next question and the student continues to answer questions in this manner until the end of the lesson. Also, throughout the courseware, the students are encouraged to make use of the "Record" and "Playback" buttons in the Tool Bar to record their voices, listen to them and compare

them with the voices of the native speakers of English that were produced with the courseware.

Figure 14. Choosing the Best Answer from Lesson 6.

Conclusion

The six lessons described above are specific to Dynamic English 1 Disk 1. There are seven additional disks in this course, increasing in difficulty and with a variety of learning activities. Our school purchased twenty-four copies each of Dynamic English 1, Disks 1 and 2, to support a maximum of forty-eight students at one time. As a result, when my colleagues and I first started using the courseware, half of the students would start on Disk 1, and the other half would start on Disk 2. This was an efficient way of using our resources, and the students switched disks after six lessons. In our experience, it became apparent that five or six lessons per disk were sufficient for the students to complete most of the tasks. Therefore, after twelve lessons with the courseware, we were

satisfied that most of the students had had an opportunity to complete their training. We offered the students the opportunity to study in the computer lab after school but few of them opted to spend more time with the courseware.

The next chapter will reveal the results of a classroom research done to evaluate the effectiveness of the courseware in learning English in our context.

CHAPTER 5

CLASSROOM RESEARCH

Introduction

This chapter will describe the results of a classroom research conducted at

Nakamura Gakuen Sanyo Junior and Senior High School between November 2003 and

January 2004.

The purpose of this study was to determine the effectiveness of computer-assisted

instruction in teaching English as a foreign language at the school mentioned above.

More specifically, answers to the following questions were being sought: First, "Do the

students learn English better in the computer classroom than in a traditional classroom?"

Second, "Do the students benefit from pre-teaching when learning in a computer

classroom?" And third, "Do the students enjoy learning in a computer classroom?"

The study subjects were first year high school students taking Oral

Communication 1 as part of the English curriculum. The students were divided into three

groups: two experimental groups and one control group. The experimental groups

learned English in a computer classroom by using Dynamic English I courseware,

whereas the control group was taught similar material using a traditional classroom

teaching method. In one of the experimental groups, a teacher clarified the material to be

learned on the computer prior to the computer learning lesson, whereas in the other experimental group, a teacher did not clarify the material to be learned on the computer prior to the computer learning lesson.

Assessments were conducted for each group before the lessons started and once more after five lessons were completed. All the students learned the same target material to determine which group performed better.

Materials

The students in the experimental groups learned English in a computer classroom equipped with forty-eight Fujitsu computers (Pentium 4 CPU at 2.2 GHz), running on the Japanese version of Windows XP. The CALL courseware used was Dynamic English Level 1 Disk 1, version 2.0, released in 1997, as described in Chapter 4 of this paper. Each student had access to one computer and used headphones to listen to the audio portion of the courseware. It was necessary to use headphones because the combined sound output from all student computers would have rendered the audio incomprehensible if they had been used at the same time in the same room. Each headphone was equipped with a microphone to record the student's voice.

Method

The research population was made up of first year high school students who were taught English as part of the Oral Communication I Course, as described earlier in Chapter 3. Four native English teachers were responsible for teaching the classes and the

author of this paper informed the three other native English instructors who took part in the research, about the details of this research before the lessons began. A total of 186 students from eleven classes were included in this study. The classes were divided into three groups–a traditional classroom group and two CALL groups. The control group, Group A, is defined as the group of students who studied in the classroom with traditional teaching methods. The experimental group is defined as the group of students who studied in the computer classroom with the CALL courseware. Furthermore, the experimental group is divided into two sub-groups: Group B is defined as the group of students who studied with the CALL courseware with no pre-teaching. The teacher in a Group B class was available to answer the students' questions and to guide them in their learning, however, the teacher did not pre-teach the vocabulary or grammar structures to be learned by the CALL courseware. Group C is defined as the group of students that studied with the CALL courseware with pre-teaching. The teacher in a Group C class introduced the vocabulary and grammar structures to be learned by the CALL courseware with the aid of paper handouts that were made available in the Dynamic English Instructor's Manual (DynEd International, 1994).

Prior to the beginning of the research, all students were tested using quantitative and qualitative components to assess their English language skills. The quantitative and qualitative assessments are attached for reference in Appendix 1 and Appendix 2, respectively. After the students completed five lessons, they were tested once more with the same assessment questions, however, the questions were placed differently on the assessment paper, so the students would not automatically recognize it as the same

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assessment that they had completed five weeks earlier. The questions on the assessments relate to the language learned with the CALL courseware.

The CALL group was divided into two groups to find out quantitatively if the students performed better on the assessments if they had a CALL class with pre-teaching or not, and to find out qualitatively if the students enjoyed their CALL experience more if they had a traditional teacher intervention in a CALL environment. The answers to these questions will be elaborated upon in the next chapter with a discussion of what a language teacher can do in a CALL classroom.

Quantitative Results

In order to ascertain if there has been progress in learning, the same assessment was given to the students twice. The initial assessment was given before the computer lessons began and the second assessment was given after five lessons were completed. The grade difference between the two tests shows the progress. The data is divided into three groups, as described in the Method. The results are shown in Table 1. The classes are indicated as A1 to A5, B1 and B2, and C1 to C4, describing five classes in the control group, two classes in the experimental group with no pre-teaching, and four classes in the experimental group with pre-teaching, respectively. The four native English teachers are indicated as Teacher I through Teacher IV. The other elements of the table indicate the type of lesson, if it was a traditional classroom lesson or a CALL lesson, and in the case of a CALL lesson, if there was pre-teaching or not before the lesson.

TABLE 1

ASSESSMENT RESULTS

Class	Teacher	Number of Students	Type of lesson	Pre-teaching or none	Average score 1st Assessment	Average score 2nd Assessment
A1	I	18	Traditional	N/A	67	67
A2	II	18	Traditional	N/A	69	62
A3	II	18	Traditional	N/A	68	77
A4	III	18	Traditional	N/A	68	69
A5	IV	19	Traditional	N/A	94	97
B1	III	10	CALL	No pre-teaching	82	86
B2	II	18	CALL	No pre-teaching	65	69
C1	III	12	CALL	Pre-teaching	66	65
C2	IV	18	CALL	Pre-teaching	58	67
C3	IV	18	CALL	Pre-teaching	67	66
C4	I	19	CALL	Pre-teaching	87	90

Figure 15 shows a line graph of the first and second assessments given to the students who studied in the CALL classroom. There are 63 students who were assessed twice in all classes. The students who took one of the tests, but not the other test, due to absence or some other reason, were eliminated from this data. The x-axis shows the results of the students in the grading order according to the first assessment. Student 1, for example, received a grade of 4/25 for the first assessment, but a grade of 20/25 for the second assessment. This student received the lowest score on the first assessment, and was placed the first student from the left on the x-axis. The student with the highest score on the first assessment, Student 63, received a perfect grade of 25/25 on the first assessment, but a grade of 21/25 on the second assessment.
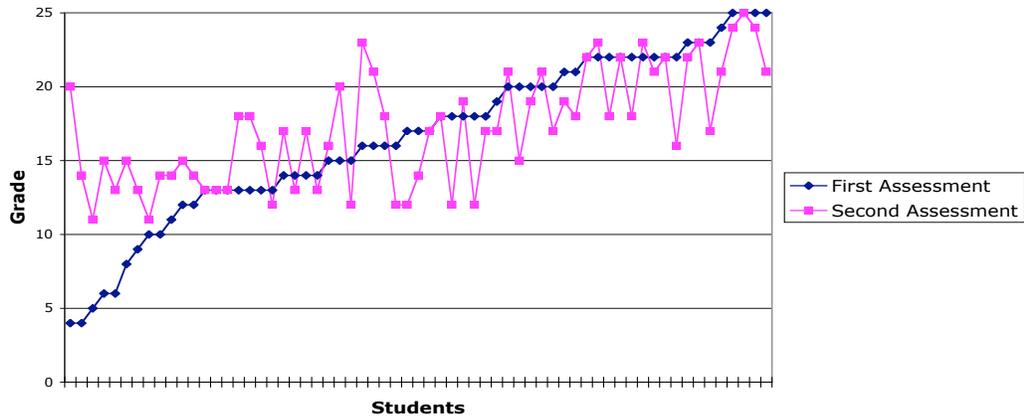
Fig. 15. Results of the experimental group.

Figure 16 shows a line graph of the first and second assessments given to the students who studied in the traditional classroom. There are 63 students who were assessed twice in all classes. The students who took one of the tests, but not the other test, due to absence or some other reason, were eliminated from this data.
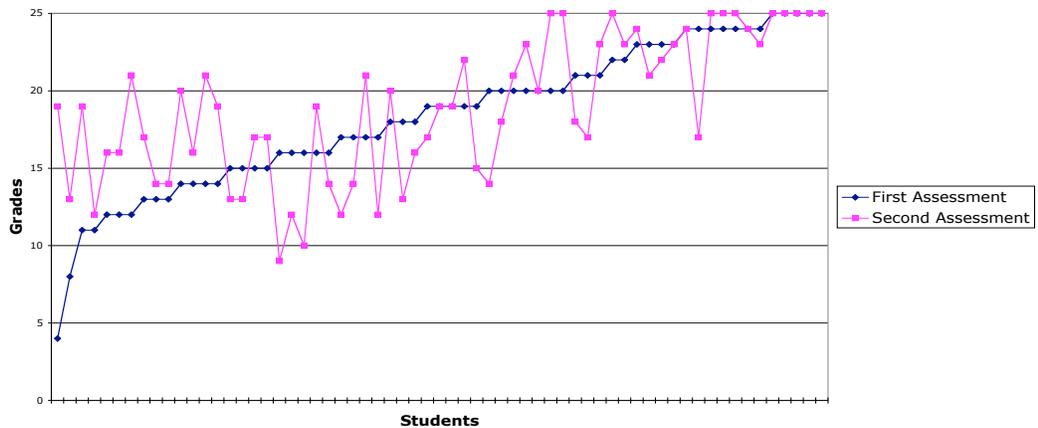
Fig. 16. Results of the control group.

When comparing Figures 15 and 16, it can be seen that among the lower scoring students, there appears to be a bigger improvement in the two assessments with the experimental group. That is, the lower scoring students in the CALL group performed better in the second assessment than the lower scoring students in the control group. Upon further examination, Tables 2 and 3 are tabulated with the scores of the first and second quantitative assessment, respectively. The percentage difference from the first to the second assessment is indicated next to the results of the second assessment. The results of sixty-three students are indicated for the traditional classroom in Table 2 and the CALL students in Table 3. The average difference in the scores was calculated for the lower scoring and the upper scoring students at the halfway mark of thirty-one students. The average difference in scores is indicated at the bottom of each table.

TABLE 2a				TABLE 2b		

Traditional Classroom Lower Scoring Students				Traditional Classroom Higher Scoring Students		

1st	2nd	% Diff		1st	2nd	% Diff
4	19	60		19	19	0
8	13	20		19	19	0
11	19	32		19	22	12
11	12	4		19	15	-16
12	16	16		20	14	-24
12	16	16		20	18	-8
12	21	36		20	21	4
13	17	16		20	23	12
13	14	4		20	20	0
13	14	4		20	25	20
14	20	24		20	25	20
14	16	8		21	18	-12
14	21	28		21	17	-16
14	19	20		21	23	8
15	13	-8		22	25	12
15	13	-8		22	23	4
15	17	8		23	24	4
15	17	8		23	21	-8
16	9	-28		23	22	-4
16	12	-16		23	23	0
16	10	-24		24	24	0
16	19	12		24	17	-28
16	14	-8		24	25	4
17	12	-20		24	25	4
17	14	-12		24	25	4
17	21	16		24	24	0
17	12	-20		24	23	-4
18	20	8		25	25	0
18	13	-20		25	25	0
18	16	-8		25	25	0
19	17	-8		25	25	0
				25	25	0
Average		5.2%		Average		-1.8%

	TABLE 3a		
	CALL Group Lower Scoring Students		

1st	2nd	% Diff
4	20	64
4	14	40
5	11	24
6	15	36
6	13	28
8	15	28
9	13	16
10	11	4
10	14	16
11	14	12
12	15	12
12	14	8
13	13	0
13	13	0
13	13	0
13	18	20
13	18	20
13	16	12
13	12	-4
14	17	12
14	13	-4
14	17	12
14	13	-4
15	16	4
15	20	20
15	12	-12
16	23	28
16	21	20
16	18	8
16	12	-16
17	12	-20
Average		12.4%

	TABLE 3b		
	CALL Group Higher Scoring Students		

1st	2nd	% Diff
17	14	-12
17	17	0
18	18	0
18	12	-24
18	19	4
18	12	-24
18	17	-4
19	17	-8
20	21	4
20	15	-20
20	19	-4
20	21	4
20	17	-12
21	19	-8
21	18	-12
22	22	0
22	23	4
22	18	-16
22	22	0
22	18	-16
22	23	4
22	21	-4
22	22	0
22	16	-24
23	22	-4
23	23	0
23	17	-24
24	21	-12
25	24	-4
25	25	0
25	24	-4
25	21	-16
Average		-6.8%

Qualitative Results

In order to understand the attitudes and feelings of the learners, a qualitative

assessment was given to the students. This assessment was made up of two parts: Part 1

was given to the students before starting their computer lessons and Part 2 was given

after completing five computer lessons (see Appendix 2). The students who did not take

part in the computer lessons did not answer the second part of the qualitative assessment.

The results of the qualitative assessment are tabulated as follows:

Part 1: Assessment handed out before using CALL.

TABLE 4

1. Have you ever learned how to use a computer?

		Yes	No	
Group 1	Control Group	59	0	
Group 2	CALL group 1 – No pre-teaching	24	0	
Group 3	CALL group 2 – With pre-teaching	59	1	
	Total	142	1	143

TABLE 5

2. Would you like to learn English by using a computer?
      a. Yes – please explain your reason.
      b. No – please explain your reason.

		Yes	No	
Group 1	Control Group	58	1	
Group 2	CALL group 1 – No pre-teaching	19	5	
Group 3	CALL group 2 – With pre-teaching	44	10	
	Total	122	15	137

Sample reasons for "Yes" answer for above question:

Because we have the freedom to do what we want.
Because we can have a fun lesson, which is interesting.
We can improve our computer skills.
It is fun to use computers.
It looks easy.
I want to study English a variety of ways.
I have an interest in computers.
If I use computers, I can understand the subject.
It is easy to understand.
It is convenient.
If I use computers to listen to English, it is interesting.
I can type.
I can study at my own pace.
It is easy.
I can concentrate on my study.
If I don't understand, I can easily look for the answer.
Until now I haven't used computers so I want to study with computers in many ways.
It is good for me.
I want to learn more vocabulary.
It is the age of computers, so it is useful.
We can learn by another way other than audiotapes and videos.

Sample reasons for "No" answer for above question:

It doesn't look fun.
It looks difficult.
We have to do the same thing many times.
It takes time.
I am not good at computers.
We can learn more during a regular lesson.
I want to speak to the teacher.
It is boring.

TABLE 6

3. What would you like to do during your OC I class?
    a. Work on my listening skills.
    b. Work on my speaking skills.

		Listening	Speaking	
Group 1	Control Group	36	21	
Group 2	CALL group 1 – No pre-teaching	17	6	
Group 3	CALL group 2 – With pre-teaching	35	22	
	Total	88	49	137

Part 2: Assessment handed out after using CALL.

CALL 1 refers to the group of students with no pre-teaching.
CALL 2 refers to the group with pre-teaching.

TABLE 7

4. What did you think of learning English with computers?
        It was a lot of fun. 1 2 3 4 5 It was not fun at all.

	1	2	3	4	5	Total
CALL 1	3 (13%)	8 (33%)	9 (38%)	4 (17%)	0	24
CALL 2	12 (18%)	19 (29%)	29 (44%)	4 (6%)	2 (3%)	66
	15 (17%)	27 (30%)	38 (42%)	8 (9%)	2 (2%)	**90**

TABLE 8

5. What did you enjoy about learning with a computer?
    a. The computer was easy to use.
    b. It is easier to learn English with a computer.
    c. The content of the material was interesting.
    d. Using the computer was fun.

	a	b	c	d	Total
CALL 1	4 (17%)	5 (22%)	2 (9%)	12 (52%)	23
CALL 2	9 (15%)	24 (39%)	12 (20%)	16 (26%)	61
	13 (15%)	29 (35%)	14 (17%)	28 (33%)	**84**

TABLE 9

6. What did you not like about learning with a computer?
    a. The computer was not easy to use.
    b. It is more difficult to learn English with a computer.
    c. The content of the material was not interesting.
    d. I hate computers.

	a	b	c	d	Total
CALL 1	3 (15%)	1 (5%)	16 (80%)	0	20
CALL 2	9 (19%)	5 (11%)	32 (68%)	1 (2%)	47
	12 (18%)	6 (9%)	48 (72%)	1 (1%)	**67**

TABLE 10

1. If you had a chance to use a computer again to learn English,
   would you like to try again?
   I would really like to try again. 1 2 3 4 5 I don't want to try again at all.

	1	2	3	4	5	Total
CALL 1	7 (28%)	3 (12%)	11 (44%)	1 (4%)	3 (12%)	25
CALL 2	19 (30%)	12 (19%)	26 (41%)	2 (3%)	4 (6%)	63
	26 (30%)	15 (17%)	37 (42%)	3 (3%)	7 (8%)	**88**

8. If you would like to add any further comments, please write them here.

The following are the comments that the students wrote on the assessment.

- *I would like to use the Internet.*
- *I would like to have more interesting content.*
- *I would like to have more computer lessons.*
- *I would like to use a computer system that will enable me to speak more easily with native English speakers.*
- *This is too easy.*
- *Make it more fun.*
- *If the conversations to be learned were more useful, it would be more interesting.*
- *I would like more free time please.*
- *I would like to see more familiar cartoon characters, please.*
- *I prefer regular classes.*
- *I would like to use more interesting software.*

Discussion

The purpose of this research was to answer the questions written at the beginning of

this chapter:

1) Do the students learn English better in the computer classroom than in a
   traditional classroom?

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2) Do the students benefit from pre-teaching when learning in a computer classroom?
3) Do the students enjoy learning in a computer classroom?

In order to better understand the results of the data, each question will be addressed individually to support the reasoning with the findings from the results. The first question deals with an important issue, one that is difficult to substantiate. With the purpose of answering the question whether students learn better in a CALL classroom or not, a quantitative assessment was conducted and the results at first glance did not seem to conclusively determine any outcome. Looking at the results from Table 1, some classes did a little better (traditional classes A3, A4, A5 and CALL classes B1, B2, C2 and C4), some classes did a little worse (traditional class A2, and CALL classes C1 and C3) and another showed no change (traditional class A1) from the first to the second assessments. These results were disappointing because I had expected all of the classes to do a little better after studying the target material. One possible reason for these results is the lack of motivation on the part of the students to do well on the assessments. The students were told that these results would not be a part of their school grade and it is conceivable to think that they did not answer the questions to the best of their ability. Another possible reason for the inconclusiveness of the results is the short amount of time between assessments. Due to scheduling and other constraints, the students only had five lessons to improve their ability and they may have needed more time to show more decisive results. Yet another possible reason is the reliability of the test. Most of the questions were multiple-choice questions and the test did not assess all aspects of their

learning. Also, some students did not understand how to answer some parts of the assessment, making the test somewhat unreliable.

Despite the shortcomings of the research, a closer look at the data showed some interesting results. When the line graphs were plotted as shown in Figures 15 and 16, it appeared as if the lower scoring students improved more on their second assessments than the higher scoring students. Looking at the results of the individual students' performance in Tables 2 and 3, one can see the scores of the first and second quantitative tests and the percentage difference between these tests.   A negative percentage difference means that the student scored lower on the second test than on the first test.

There were sixty-three students in the CALL group and the traditional classroom group, respectively. Looking at the results of the lower scoring students–the first thirty-one students–the data shows that the traditional classroom students increased their score by an average difference of 5.2% (Table 2a), whereas the CALL students increased their score by an average difference of 12.4% (Table 3a). Thus, the lower scoring students who studied in a computer classroom had better results than the lower scoring students who studied in a traditional classroom. The higher achieving students, on the other hand, showed different results; they had lower scores on their second assessment by an average of 1.8% in the traditional classroom group (Table 2b), and lower scores by an average of 6.8% in the CALL group (Table 3b). The results were surprising because the lower scoring students tended to improve their assessment results whereas the higher scoring students tended to get lower results. This may be explained by the fact that the level of the courseware may have been too easy for the higher scoring students and were less

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motivated to learn, as can be seen in the qualitative assessment responses to Question 5. The lower achieving students, though, enjoyed the process of learning with a computer since they could learn at their own pace and could retain more of the material because of the repeated practice opportunities and easily accessible explanations. I believe that these results show a tendency for the lower scoring students to be more motivated to learn with the use of a computer. Overall, the traditional classroom and the CALL group students improved their scores by an average of 1.7% and 2.8%, respectively. This shows that the CALL group students had slightly higher results in their assessment and thus, learning with a computer was an efficient way to learn.

The second question deals with pre-teaching in the computer classroom. That is to say, does the role of the teacher in a computer classroom contribute to better results for the students? In the quantitative data, Table 1 shows the "No pre-teaching" group averaged a 4% increase in the results, whereas the "Pre-teaching" group averaged a 2.5% increase in results, which is inconclusive due to the low levels of increase. The qualitative analysis, though, can offer some insights into the attitudes of the learners. From Table 7, for example, it can be seen that 91% of the learners from the "Pre-teaching" group thought that learning with a computer was fun compared with 84% for the "No pre-teaching" group. Also, from Table 8, it can be seen that 39% of the learners from the "Pre-teaching" group thought that it was easier to learn English with a computer compared with 22% for the "No pre-teaching" group. Moreover, 20% of the learners from the "Pre-teaching" group thought that the content of the courseware was interesting, compared with 9% for the "No pre-teaching" group. Therefore, in conclusion, the results

indicate it is unclear from this study if the learners' performance increases with pre-teaching, however, it is probable that the learners' attitudes towards learning with a computer are more favorable if there is some pre-teaching of the target language involved.

The third question to be determined asks if the students enjoy learning in a computer classroom. The answer is in the qualitative results. From Table 7, 89% of the learners who studied with a computer thought it was fun. From Table 8, 68% of the learners responded that English was easier to learn with a computer and that it was fun. When asked if they would like to learn English with a computer again in the future, Table 10 shows an overwhelming 89% of the respondents replied favorably. In conclusion, it is seen from the students' responses that a large majority of the learners enjoyed learning English with a computer.

A discussion of the results of the research with applications to teaching English in a computer classroom will follow in the next chapter.

CHAPTER 6

CONCLUSION

Computers can be applied to learning a language from early childhood to adult education. There are software programs available in the marketplace to help pre-school children develop a curiosity in a language or detailed courseware programs that teach a learner the four skills. The technology of computers and software engineering skills of programmers have evolved more quickly than teachers and school administrators can grasp. Consequently, it has become important for educators to understand the usefulness of CALL and how it can be used most effectively in the classroom.

Multimedia Applications

It makes sense for a language learner to use a computer because the method of delivering instruction is effective. Multimedia applications enable the learner to experience rich linguistic and non-linguistic input through text, video, audio and interactive tasks. CALL has a unique pedagogical value because the media of instruction complements traditional classroom teaching and allows teachers to better deal with students' needs for individualization (Bush 1997: 301). One of the most important benefits of using a computer is the ability of the student to do the same task repeatedly

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without tiring out the "instructor." Learning a language on a computer allows for infinite

practice and becomes an important part of the learning process.

Learning with computers by way of multimedia tools is a valuable replacement

for what can be accomplished in a traditional classroom. The courseware that we have

been using, Dynamic English, attempts to build specific skills (such as telling the time)

by systematic practice. The material sets up situational contexts for language practice by

personalizing the student responses through the use of the Shuffler level. As the student

progresses in the tasks, the level of difficulty increases and new vocabulary is introduced,

therefore helping the student acquire a new language without explicit instruction, offering

an advantage over traditional classroom learning. The task orientation of the courseware

engages the learner in trying to understand specific information that is presented rather

than drilling students with narrow linguistic frames that have no meaning. Students

receive useful feedback in audio and text form and can monitor their progress by

examining their student records.

Using the Computer as a Tool

Learners don't learn from technology; they learn from thinking about what they

are doing (Preiss 2003). The computer is a tool, used to enhance the learning process of a

language learner. In order to effectively use the computer technology in a learning

environment, there are three key issues that need to be addressed (Bush 1997: 264).

1) Establishing a comfort level with the technology.

2) Integrating technology into the curriculum.

3) Developing the critical skills to use technology effectively.

The establishment of a comfort level with the technology refers to students being comfortable with using a computer for learning a foreign language and also refers to educators being comfortable with using computer technology in education. In order for the students to feel comfortable, they need to be reassured that this will be a non-threatening environment for them, in the sense that even if they do not know how to use a computer, they will be taught the essentials in such a way as not to be disadvantaged compared to computer savvy learners. In order for educators to feel comfortable with computer technology, they need enough time to train and practice with the technology and share ideas with others.

Integrating technology into the curriculum was discussed in Chapter 3, Using Call in Japan. In it, I discussed how I began to use computers in the Oral Communication course. It was essential to build CALL lessons into the curriculum to allow more than just a few visits to the computer room.

The wide variety of software titles available for language learning is a demanding task for an educator who wishes to select some materials that are pedagogically sound. Moreover, not all software titles work with all computer hardware configurations. Yet, there are still some educators in Japan who do not trust computer-aided instruction to help students acquire the necessary language skills for passing difficult entrance exams. Thus, teachers need to develop the critical skills to evaluate for themselves the usefulness and effectiveness of different software programs and to reassure their colleagues that CALL is an effective way of learning.

In the qualitative assessment, as written in the previous chapter, some students commented that they would like to use the Internet for English class, or to have different courseware which is more interesting and more fun. This is one of the most difficult choices to make. What is best for the students? Should they follow some courseware material that will guide them in their learning process or should they use the Internet or e-mail to produce more creative output? The answer probably lies in what the students' needs are and what the educator can offer to the students. The cost of the courseware can be high and if that is a problem in the educator's context, then the Internet and e-mail option would provide some useful tools. On the other hand, if the educational institution can afford the courseware, and the students' needs are more in line with a tutorial type of learning, then that might be a better solution.

Teacher's Role

The role of the teacher in a CALL classroom is not evident. On a practical level, the teacher is responsible for choosing the appropriate software for the students, learning how to use the software itself, in order to demonstrate the software to the students and anticipate any problems the students may have in using the software, training the students on how to use the computer, monitoring progress, keeping the students on task and providing guidance throughout the course of study.

In a CALL environment, the computer does not replace the teacher, however, the teacher is "re-placed." That is, the teacher has a newly defined role. Prior to the beginning of the CALL lesson, the teacher can activate the students' prior knowledge,

set-up goals and objectives and give some direction to the students. During the CALL lesson, the teacher can keep the students on task by circulating among them, solving any problems that may come up and listen to the students. After the CALL lesson, the teacher can communicate with the students directly by providing the necessary human contact, provide correction and feedback and finally to reflect on the process of learning with a computer. Discussing what worked and what did not work for them during the lesson time might provide some useful information for future learning (Preiss 2003).

In my own experience, when I started introducing students to the computer classroom, I thought my role was that of a problem solver rather than a facilitator. I was present in the classroom if a student needed me for a specific problem, either with the computer itself, or with one aspect of learning with the courseware. I was there to assist the students with their learning. Gradually, though, I have come to see my role as a facilitator for the learner. I continue to be a problem solver, but I try to maintain an active teaching role in the classroom by introducing some vocabulary forms or monitoring the students' progress by speaking to them individually during the lesson to see how much they understand. I am now much more involved in the students' learning. I will continue to strive to involve myself more in the CALL lesson and maintain an active presence for the learners.

Problems

Using technology for educational purposes opens the possibility of glitches to occur. The mechanical devices and other electronic components that are used in the computer classroom are sensitive to dust and temperature, and occasionally break down. If there is an equal number of computers and students in the classroom, and one of the computers has a mechanical failure, then there is a problem. The solution could be to have two students use one computer, but in CALL tasks, it is not always practical for two students to study simultaneously. Problems can also occur due to software complexity or system crashes. Moreover, with the advent of the Internet and network capable courseware, the installation and maintenance of software and hardware require some capable computer classroom assistants to assist the teachers in their tasks of helping the learners. Risks posed by these problem areas need to be addressed to prevent classroom disruption.

Further Study

In the research that was conducted for this paper, it was shown that the students with a lower ability in English had a higher learning potential in a CALL setting. This signifies that those students who had difficulty in a lesson initiated by a teacher in a traditional classroom environment performed better in a computer classroom environment. The effective parameters for this study, however, are specific to the courseware used and may reflect on the appropriateness of the level of difficulty to the student. In a more practical situation, students would be able to choose more freely the

level and pace of the lesson, thereby allowing more challenging material for the higher

scoring students and this could produce more encouraging results. This research would

have benefited by further study with different courseware material, a greater number of

lessons and additional assessments conducted several months after completing the lessons

to better determine the effective courseware and the long-term value of using CALL in

the classroom.

APPENDIX 1

Quantitative Assessment

Oral Communication 1
Assessment 1

Name: _____Student # _____

Part 1: Write a sentence with these words.
Example: Max name / my / is = My name is Max.

1. is / Kathy / name / my /. _____

2. come / New York / from / I /. _____

3. Max / is / this /.   _____

4. from / comes / San Francisco / he / ._____

5. come / where / does / from / Max / ? _____

Part 2: Change each sentence to begin with "she" or "her".
Example: I come from New York. = She comes from New York.

6. My name is Kathy.

7. I'm from the U.S.   _____

8. I speak two languages. _____

9. My house is small.   _____

10. I'm a young woman. _____

Part 3: Write "isn't" or "doesn't" in the spaces below.
Example: Max comes from the U.S. He (doesn't) come from France.

11. His name (   ) Bob, his name is Max.

12. Pierre is from Paris. He (   ) come from the U.S.

13. Kathy speaks English. She (   ) speak Japanese.

14. Zork comes from far away. He (   ) from our world.

15. Kathy is from New York. She (   ) from Paris.

Part 4: Choose the correct word.
Example: Max (come, comes) from the U.S.

16. Max and Kathy (come, comes) from the U.S.

17. Max and Pierre (is, are) good friends.

18. Kathy and Max (speak, speaks) English.

19. Pierre (come, comes) from France.

20. He doesn't (come, comes) from the U.S.

Part 5: Match each part of a sentence on the left with the other part on the right.
Example: They don't (f) from the U.S.   f. come

21. She ....   (   )   a. you come from?

22. Where do ....   (   )   b. are you from?

23. Where ....   (   )   c. from Japan.

24. My name ....   (   )   d. doesn't speak French.

25. I'm not.......................   (   )   e. is Kathy.

Oral Communication 1
Assessment 2

Name: _____Student # _____

Part 1: Match each part of a sentence on the left with the other part on the right.
Example: They don't (f) from the U.S.   f. come

    1. She ....   (   )   a. you come from?

    2. Where do ....   (   )   b. are you from?

    3. Where ....   (   )   c. from Japan.

    4. My name ....   (   )   d. doesn't speak French.

    5. I'm not.................   (   )   e. is Kathy.

Part 2: Write a sentence with these words.
Example: Max name / my / is = My name is Max.

    6. is / Kathy / name / my /. _____

    7. come / New York / from / I /. _____

    8. Max / is / this /. _____

    9. from / comes / San Francisco / he / ._____

    10. come / where / does / from / Max / ? _____

Part 3: Write "isn't" or "doesn't" in the spaces below.
Example: Max comes from the U.S. He (doesn't) come from France.

11. His name (   ) Bob, his name is Max.

12. Pierre is from Paris. He (   ) come from the U.S.

13. Kathy speaks English. She (   ) speak Japanese.

14. Zork comes from far away. He (   ) from our world.

15. Kathy is from New York. She (   ) from Paris.

Part 4: Change each sentence to begin with "she" or "her".
Example: I come from New York. = She comes from New York.

16. My name is Kathy. _____

17. I'm from the U.S.   _____

18. I speak two languages. _____

19. My house is small. _____

20. I'm a young woman. _____

Part 5: Choose the correct word.
Example: Max (come, ⬚comes⬚) from the U.S.

21. Max and Kathy (come, comes) from the U.S.

22. Max and Pierre (is, are) good friends.

23. Kathy and Max (speak, speaks) English.

24. Pierre (come, comes) from France.

25. He doesn't (come, comes) from the U.S.

APPENDIX 2

Qualitative Assessment

Part 1: Before using CALL.

1. Have you ever learned how to use a computer?
2. Would you like to learn English by using a computer?
   a. Yes – please explain your reason.
   b. No – please explain your reason
3. What would you like to do during your OC I class?
   a. Work on my listening skills.
   b. Work on my speaking skills.

Part 2: After using CALL.

4. What did you think of learning English with computers?
   (Circle the appropriate number).
   It was a lot of fun. 1 2 3 4 5 It was not fun at all.

5. What did you enjoy about learning with a computer?
   a. The computer was easy to use.
   b. It is easier to learn English with a computer.
   c. The content of the material was interesting.
   d. Using the computer was fun.

6. What did you not like about learning with a computer?
   a. The computer was not easy to use.
   b. It is more difficult to learn English with a computer.
   c. The content of the material was not interesting.
   d. I hate computers.

7. If you had a chance to use a computer again to learn English, would you like to try again?
   I would really like to try again. 1 2 3 4 5 I don't want to try again at all.

8. If you would like to add any further comments, please write them here.

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