THE EFFECT OF COMPUTER-ASSISTED LANGUAGE LEARNING ON LEARNERS' ACHIEVEMENT ON THE TOEFL EXAM

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Approval of the Graduate School of Social Sciences

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ABSTRACT

THE EFFECT OF COMPUTER-ASSISTED LANGUAGE LEARNING ON
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This study aimed to explore the effect of computer-assisted language learning (CALL) on the sophomore undergraduate students' success on the TOEFL exam. The study was designed as quasi-experimental research and two variables were focused on: Computer-assisted language learning and traditional instruction. Participants were 34 sophomore students in EFL department in Middle East Technical University.

The participants were randomly assigned to the experimental and control groups using a table of random numbers. Experimental (three males and fourteen females) and control groups (two males and fifteen females) consisted of 17 participants

each since the language laboratory for experimental group could accommodate that number.

Experimental group was taught using computer-assisted instruction in a language laboratory while the control group was taught using a traditional method of instruction in a traditional classroom setting. The sample consisted of 17 participants in each group. The training lasted for 8 weeks and the same instructor met the groups three hours each week. During the first week a pre-test was given to both groups and a post-test was given at the end of the study. The experimental group participants were also interviewed with regard to CALL. Pre and post-test gain scores were statistically analyzed and the interviews were subjected to content analysis.

The results showed that there was no statistically significant difference between the control and experimental groups in overall scores and on the structure section. However, statistically significant differences were found in the scores on the reading and listening sections. The interviews showed that the participants in the experimental group valued computer-assisted language learning. However, it was suggested by the participants that computer-assisted language learning should be incorporated into the regular classes, where especially listening skill is focused on.

Keywords: TOEFL, traditional instruction, computer-assisted language learning

ÖZ

BİLGİSAYAR DESTEKLİ DİL ÖĞRENİMİNİN, TOEFL SINAVINDA ÖĞRENCİ BAŞARISI ÜZERİNDEKİ ETKİSİ

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Bu çalışma, bilgisayar destekli dil öğretiminin lisans öğrencilerinin TOEFL sınavında başarısı üzerindeki etkisini araştırmaktadır. Çalışma, yarı-deneysel araştırma olarak tasarlanmış ve iki değişken üzerinde durulmuştur: bilgisayar destekli dil öğretimi ve geleneksel öğretim yöntemleri. Araştırmanın katılımcıları, Ortadoğu Teknik Üniversitesi (ODTÜ) Yabancı Diller Eğitimi Bölümü ikinci sınıf öğrencilerinden oluşan 34 kişilik gruptur.

Katılımcılar, deney ve kontrol gruplarına, yansız olarak atanmışlardır. Deney (üç erkek ve 14 bayan öğrenci) ve kontrol grubları (iki erkek ve 15 bayan öğrenci), dil laboratuvarının sunduğu imkan ölçüsünde on yedi katılımcıdan oluşturulmuştur.

Deney grubundaki katılımcılar, bölümün dil laboratuarında bilgisayar destekli dil öğretimi yöntemiyle çalışmışlardır. Kontrol grubundaki katılımcılar ise geleneksel öğretim yöntemiyle eğitim görmüşlerdir. Örneklem her bir grupta 17 kişi olmak üzere toplam 34 katılımcıdan oluşmuştur. Eğitim, her bir grup için 8 hafta ve her hafta 3 saat olarak planlanmıştır. Eğitimin ilk haftasında, her iki gruba da öntest uygulanmış ve çalışma, sontest ile sonlandırılmıştır. Ayrıca, deney grubundaki kalımcılarla bilgisayar destekli dil öğretimi konusunda görüşme yapılmıştır. Öntest ve sontest sonuçları, istatistiksel olarak incelenmiştir. Deney grubuyla yapılan görüşmeler, içerik analizine tabii tutulmuştur.

Bu çalışma şunu göstermiştir: Deney ve kontrol gruplarının dilbilgisi bölümünde ve ayrıca genel puanlarında istatistikî yönden manidar farka rastlanılmamıştır. Ancak, okuma ve dinleme bölümlerinde istatistiki olarak manidar fark bulunmuştur. Deney grubundaki katılımcılar, bilgisayar destekli dil öğretimini kayda değer bulmuşlardır. Ancak, bu katılımcılar, bilgisayar destekli dil öğretiminin tek başına kullanılması yerine, özellikle dinleme yeteneğinin geliştirildiği sınıflara dahil edilmesini yönünde fikir beyan etmişlerdir.

Anahtar Kelimeler: TOEFL, geleneksel öğretim, bilgisayar destekli dil öğretimi

To my parents, whose loving support make all things possible

ACKNOWLEDGEMENTS

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INTRODUCTION

1.1. Presentation

The study is conducted to find out how computer-assisted language learning in the Department of Foreign Language Education in Middle East Technical University (METU) affects the learners' achievement on the TOEFL exam. This chapter will briefly review the use of technology in language learning, the problems which have led to the proposed study, the aims and the significance of the investigation.

1.2. Background to the study

Language teaching is rather a difficult and complicated process that requires careful and diligent work. Educators in the field of language teaching always try hard to find ways to make language learning enjoyable and attractive for the learners. Different activities, games, and interesting stories helped language teachers to achieve this aim through many years and they still do. However, at the beginning of 1980s, technology came into use in the language classrooms with films, television, and language labs having video tapes and audio cassettes. Also, some computer-assisted language (CALL) software were introduced in the form of drill-and-practice (Cunningham, 1998). As technology developed, new programs came into use to create a more interactive and interesting environment for

language learners and teachers than what is available in the traditional language classrooms.

Today, we have access to many CALL programs that are currently used and tested in language classrooms for teaching grammar, speaking and other skills. Although technology provides us with many opportunities for a better life and education, its usefulness should be tested in real situations. For this aim, many researchers, in search of the best way to acquire a foreign/second language, use CALL in language classrooms to find out its effects on language learning and naturally on learners.

The enrichment of language teaching and learning process through CALL can be achieved through empirical research including learners' attitudes and opinions. Therefore, one of the aims of this study is to give language learners an opportunity to reflect on whether CALL has a helpful role in learners' success on the TOEFL exam. These reflections may provide insights for both language teachers and learners studying English.

1.3. Research problems

This study intends to answer the following questions as regards the effect of computer-assisted language learning on the learners' TOEFL scores. The main problems of this study are stated as follows:

1. Is there a statistically significant difference in regard to the total gain scores on the structure, reading, and the listening sections of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

    1.1. Is there a statistically significant difference in regard to the gain scores on the structure section of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

    1.2. Is there a statistically significant difference in regard to the gain scores on the reading section of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

    1.3. Is there a statistically significant difference in regard to the gain scores on the listening section of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

2. What are the learners' perceptions as regards the use of CALL for TOEFL preparation?

1.4. Hypotheses

1. There is no statistically significant difference in regard to the total gain scores on the structure, reading, and the listening sections of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

    1.1 There is no statistically significant difference in the scores obtained by the learners instructed by CALL and the learners instructed by traditional instruction on the structure section of TOEFL

1.2   There is no statistically significant difference in the scores obtained by the learners instructed by CALL and the learners instructed by traditional instruction on the reading section of TOEFL.

1.3   There is no statistically significant difference in the scores obtained by the learners instructed by CALL and the learners instructed by traditional instruction on the listening Section of TOEFL.

1.5. Significance of the study

To make language learning more enjoyable, productive and effective, it is necessary to benefit from the opportunities that technology provides us with. For this reason, it will be beneficial to compare computer-assisted language learning with the traditional instruction by taking learners' feelings towards this type of instruction. Since computer-assisted learning is a new field that begins to get the attention of educators, there are not many studies regarding this area in our country and there is a lack of studies with experimental designs (Uşun, 2000). This study is hoped to provide insights for both educators, and learners interested in CALL. According to the results revealed by the study, the implications for language teaching and learning will be mentioned taking into consideration the learners, teachers and skills practised.

1.6. Definition of the important terms

Computer-assisted instruction (CAI): CAI is a type of instruction in which "the student directly interacts with instructional materials, such as drills and tutorials, presented on the computer. The student responds to these materials. The computer

evaluates the responses and directs the student to further study materials" (Mandell & Mandell, 1989, p. 46). CAI is sometimes called after computer-aided instruction (CAI) or computer-based instruction (CBI).

Computer-assisted language learning (CALL): "The use of tutorials to present concepts, describe examples, measure performance, and present feedback to the learner, and simulations that require the learner to apply constructs to a language learning process in order to solve problems and make decisions" (Bax, 2003, p. 17). Also, CALL consists of one language laboratory where learners will work alone on a computer and learn at their own pace. The teacher will not participate in the teaching/learning process, but s/he will make sure that learners are working alone on their computers.

Traditional instruction: "It is the process in which the teacher presents the materials to the learners" (Brown, 1994, p.45). The teacher describes examples, measures performance, and presents feedback to the learners.

The TOEFL (Test of English as a Foreign Language): "The TOEFL is a standardized test designed to measure a person's proficiency in English, and consists of five subtests: listening comprehension, English structure, vocabulary, reading comprehension, and writing ability. The listening comprehension test has three parts: direct questions, conversation followed by questions, and a lecture followed by questions on its content. The English structure test requires the testee to select the correct response, from four options, which appropriately completes a

segment of a dialogue. This subtest deals with tense, sequences of nouns and adjectives, etc., but no rationale is given for the selection of structure included. Vocabulary involves "fill in the blank" questions such as in English structure, and definitions or synonyms. Four options are provided. Forty items comprise this subtest, with no rationale given for the vocabulary selected in the test. The reading comprehension subtest is made up of short texts with several questions about the content presented on the same page. The writing ability subtest contains two parts. Part A consists of sentences with four words or phrases underlined and labeled A, B, C, and D. The testee is to pick the underlined word or phrase that is incorrect. Part B contains incomplete sentences to be completed with the appropriate choice of four options. (Hosley & Meredith, 1979, pp. 210-211).

CHAPTER II

LITERATURE REVIEW

2.0. Presentation

This chapter begins with a brief history of computers in education. Following this, related aspects of behaviorism and instructional technology are discussed. Later, the chapter continues with empirical and qualitative studies related to using CALL in foreign language classrooms, and the advantages and limitations of CALL. Finally, the chapter ends with the studies conducted in Turkey.

2.1. A brief history of computers in education

The first use of computers by institutions related to teaching and learning coincided with the introduction of second-generation computers towards the 1950s. Large universities started to use computers for administrative processes and student record keeping. At the same time computers were used for instructional teaching and research. PLATO (Programmed Logic for Automatic Teaching Operations), the very first project related to use of computers in educational research, began in 1960 at the University of Illinois to design a large computer-based system for instruction. The PLATO system included a mainframe machine supporting hundreds of terminals which have high capacity comparing to that age. Many courses in many disciplines were developed, designed and delivered on PLATO systems (Alessi & Trollip, 1985; Warschauer, 1996; Levy, 1997; Culley,

1992). Later, new versions of PLATO came into use with new changes to provide interactive and self-paced instruction.

During the 1960s and 1970s, the use of computer-assisted instruction expanded in public schools with the introduction of the next generation of computers and microchips which were cheaper (Bullough & Beatty, 1991). In 1971, another important project, TICCIT (Time-shared, Interactive, Computer Controlled Information Television) was initiated at Brigham Young University (Levy, 1977). The system combined television technology with the computer to deliver instruction to the learners.

During the 1980s, microcomputers started to be adopted by the schools and new developments such as CD-ROM, speech-based software, and interactive videos appeared. Also experiments were done in the integration of the computers into the curriculum.

In the 1990s and 2000s, with the introduction of fast, affordable processors, new software, wide-scale and fast access to the Internet made computers available in almost all public and private schools as well as homes for personal and educational use. Table 1 lists the chronological development of computers in education (based on Bullough & Beatty 1991, p. 8).

Table 1

A brief chronological history of computers in education

1946	First generation computers, based on vacuum tubes, introduced
1959	Second generation all-transistorized computer introduced by IBM
1960	The PLATO project begins at Illinois
1963	The Stanford Project begins
1964	Third generation computers, based on integrated circuits, appear; BASIC developed at Dartmouth
1965	Digital Equipment Corporation markets the inexpensive PDP-8 minicomputer; teaching of classes at the University of Illinois using PLATO
1967	The New York plan; expanded use of computer-assisted instruction in the public schools
1968	Logo introduced
1969	The first microprocessor chip developed by Intel
1972	Fourth generation begins with the introduction of expanded microchip by Intel
1975	First wide scale marketing of a microcomputer (Altair 8800)
1977	Commodore Pet, Apple II, and TRS 80 microcomputers introduced
Early 1980s	Wide-scale adoption of microcomputers by the schools; computer literacy movement Advances in technology such as CD-ROM, speech-based software, interactive videodiscs
Late 1980s	Experiments in the integration of computers into the established curriculum; research in intelligent computer-assisted instruction (ICAI)

To this table, the following developments can be added:

1990s   The introduction of the Internet, fast and affordable processors

2000s   Wide use of fast Internet, satellite system, developments of DVDs

          (very high capacity), video conferencing, new applications for

          language teachers, and learners; computers available in almost all

          public and private schools, Universities, at homes for personal and

          educational use

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2.2. A brief history of the use of computers in Turkey

The use of computers in Turkey started during the 1960s firstly in governmental institutions in Turkey and later in private sectors. During the 1970s and 1980s, computers were widely used in these institutions. However, it was not until 1984 that the use of computers by institutions related to teaching and learning were taken into consideration by *Milli Eğitim Bakanlığı* (MEB) (Ministry of Education). Committees related to CAI in Ministry of Education were formed and studies with the framework of 'New Information and Communication Technology' were commenced (MEB, 1991).

In 1985, computers were introduced to secondary schools (Anatolian High Schools and one high school in each city in Turkey) and computer laboratories were established in more than fifty schools by Ministry of Education with the help of World Bank. Software related to Mathematics, Physics, language and many other subjects were distributed to these schools.

Starting from 1985 and through 1990s, computers were introduced to other schools and new laboratories were established. As a result of the widely introduction of computers in schools, there was a high demand for trained teachers. In 1998, in more than twelve universities, departments of Computer Education and Instructional Technology were established to train teachers in the field of computers and computer education. Table 2 outlines a brief history of the use of computers in education in Turkey.

Table 2

A brief chronological history of computers in education in Turkey

1960	Introduction of computers in state institutions and private sectors
1960s and 1970s	Wide-scale adoption of computers in state institutions and private sectors
1984	Preliminary studies regarding the use of computers in education by Ministry of Education
1985	Introduction of computers to secondary schools and establishment of computer laboratories
1985-1990s	Wide-scale adoption of computers in schools
1998	departments of computer education and instructional technology
1990s and 2000s	Experiments in the integration of computers into education Research in computer-assisted instruction

2.3. The future of computers in education

Technology improves day by day and each development broadens our view of what computers will be doing in education. Text-to-speech technology and distant learning projects together with video-conferencing are of the current developments that researchers find promising.

'Text to Speech' (Speech Synthesis) technology is the ability of a computer to produce 'spoken words. Computer speech can be produced either by "splicing" prerecorded words together or, with much more difficulty, by having the computer produce the sounds that make up spoken words (Microsoft Encarta Encyclopedia Deluxe, 2004). This technology was first introduced as Texas Instruments Speak and Spell handheld electronic learning aid in 1978.

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Ehsani and Knodt (1998) and Sobkowiak (2003) stated that text-to-speech technology (natural speech input capacity) will be a common feature of any CALL application and human language technologies will improve the current software of foreign language teaching.

Davies (2003) stressed the importance of distance-learning CALL, a face-to-face communication which is enabled through synchronous and asynchronous oral communication. With the video-conferencing feature and the developments in web design and the applications in the hypertext system, learners are provided with the curriculum or the real class in their houses, or dormitories. In other words, teaching and learning will be without time barriers and as many distance learning projects are named, 'any time and anywhere' education will be put into effect.

2.4. The basis for instructional technology: Behaviorism

Instructional technology has had a long partnership with Behaviorism, which stressed that the only possible way to learn is by repetition and habit formation. Although technology has allowed for a more sophisticated presentation, the basis of the instruction is primarily behaviorist in nature and based on Skinner's programmed instruction, which became popular in the 1960s (Skinner, 1954). Programmed instruction was based on behaviorist theories of learning which aimed to shape behavior by stimulus-response bonds. Skinner developed his machines primarily to test and develop his conditioning principles. However, he was also one of the first to apply his theories of behaviorism to instruction with the teaching machine and created programmed instruction, which is still a part of many of

today's computer assisted learning, particularly in the field of language learning. The main characteristics of the programmed instruction were logical presentation of content, requirement of overt responses, and presentation of immediate knowledge of correctness.

Program instruction is believed to improve classroom learning; present difficult subjects in gradual and small steps for students to succeed at their own page (Atkinson & Wilson, 1969). There are two types of programmed instruction: linear and branching programmed instruction.

2.4.1. Linear programmed instruction

Linear programmed instruction reinforces learner responses that are correct. All learners work through the same sequence and repetition is important. Figure 1 shows the basic characteristics of linear programmed instruction (Alessi & Trollip, 1985, p. 120):

```
┌─────────────────────────────┐
│        TITLE PAGE           │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│        DIRECTIONS           │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│     WHAT GLACIERS ARE       │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│       FIRST QUESTION        │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│      SECOND QUESTION        │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│       THIRD QUESTION        │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│      HOW GLACIERS           │
│      ARE FORMED             │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│         QUESTION            │
└─────────────────────────────┘
              ▼
          AND SO ON
```
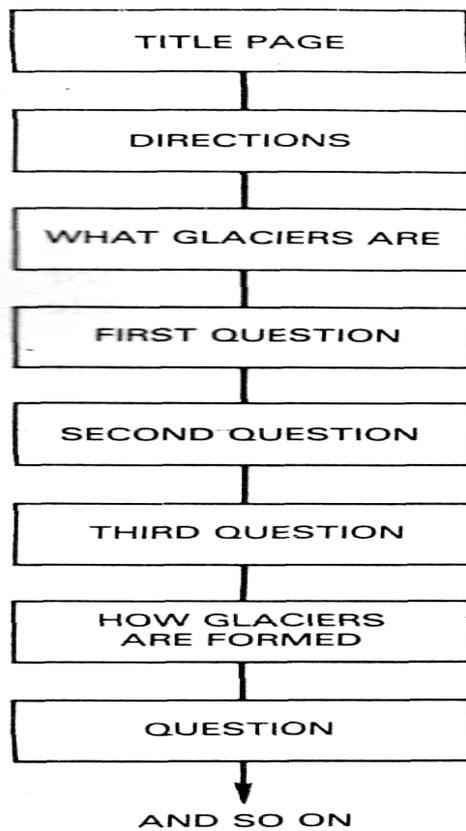
Figure 1

Basic characteristics of linear programmed instruction

2.4.2. Branching programmed instruction

Branching programmed instruction was developed to overcome the monotony and repetition of the linear programmed instruction. In branching programmed instruction, learner responses determine the route followed. The learner who responds incorrectly is either returned to the original frame, or routed to remedy the deficiency. This process is repeated at each step, thereby exposing the learner to different amounts of material depending on the errors made. Figure 2 shows the basic characteristics of branching programmed instruction (Alessi & Trollip, 1985, p. 121):
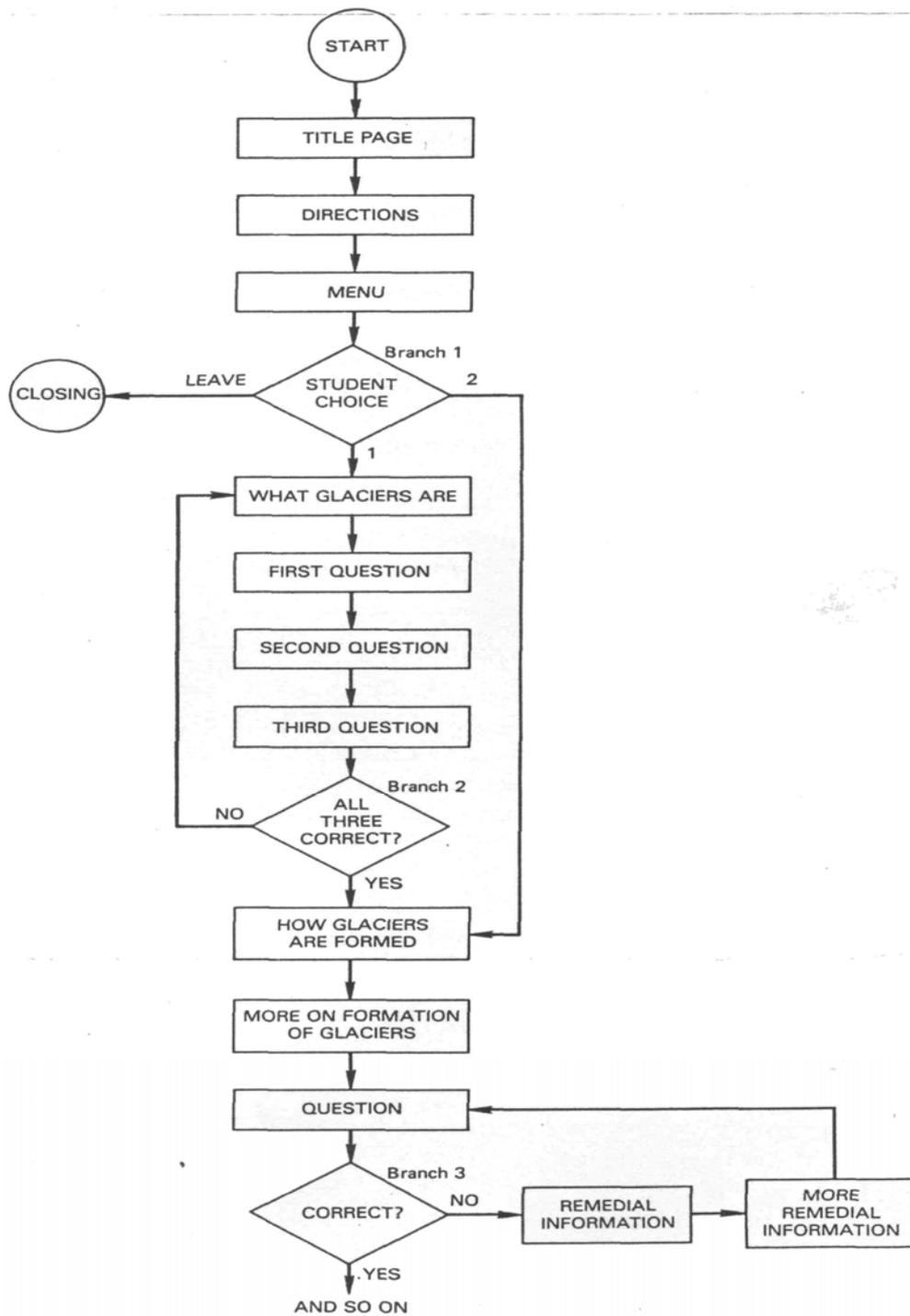
Figure 2

The basic characteristics of branching programmed instruction

2.5. The roles of computers in education

Computers are widely used in industry, military missions and in education and have different roles in different areas. In education, three roles have been attributed to computers: computer as learner (tutee), computer as tool, and computer as tutor (Lockard, Abrams, & Many, 1994; Sharp, 1996; Geisert & Futrell, 1995).

2.5.1. Computer as learner (tutee)

In this role, computers are learners themselves. Computers are taught to perform their tasks that the user wants. Computers understand special languages which are called machine language (such as Pascal, C and Delphi) and programmers write special codes for the computers to understand. These codes are turned into programs which we use today (such as Microsoft Word and PowerPoint). With these codes, computers can understand when, what and how to do the thing instructed.

2.5.2. Computer as tool

As the title indicates, computers have another role as tool in education. The main use of computers in education as tool is the word-processing and desktop publishing. Writing a term paper or a thesis requires a word-processing program and a computer and worrying about the typing mistakes is a history now. Many language teachers and students make use of computers as tool while writing their papers or worksheet for their classes.

2.5.3. Computers as tutor

Computers may have a similar role as tutor comparing to a teacher has. In this role, computers present lectures, give feedback and remedial explanation to the learners as they go thorough the programs offered.

Computers as tutor provide the learners with different activities which are appropriate to the subject aimed by the learners: drill and practice, tutorials, simulations, and games (Lockard, Abrams, & Many, 1994; Higgins & Jones, 1984; Mandell & Mandell, 1989; Lillie, Hannum & Stuck, 1989; Bullough & Beatty, 1991).

2.5.3.1. Drill and practice activities

Drill and practice activities aim to provide the learners with practice and also revision for the items newly learned. In a typical drill and practice activity, the learner is led through a series of practice exercises to teach the learner by repetition and examples. It aims to provide a way to practise a skill that has already been learned. Figure 3 shows the basic characteristics of a drill and practice activity (Mandell and Mandell, 1989, p. 47).
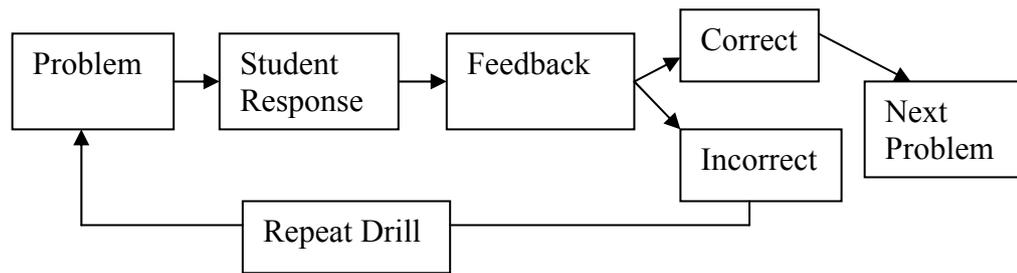
Figure 3

The basic characteristics of a drill and practice activity

2.5.3.2. Tutorials

Tutorials are designed to teach the learners a subject matter and often consist of several screens of textual material followed by exercises and questions. A typical tutorial presents the material (a new concept, task or an idea), tests the understanding of the learner, provide feedback on the responses given by the learner, and finally lead the learner to a different step based on his/her performance (Lockard, Abrams, & Many, 1994; Higgins & Jones, 1984; Mandell & Mandell, 1989; Alessi, and Trollip, 1985). Figure 4 shows the general structure and flow of a typical tutorial (Alessi and Trollip, 1985, p. 66):
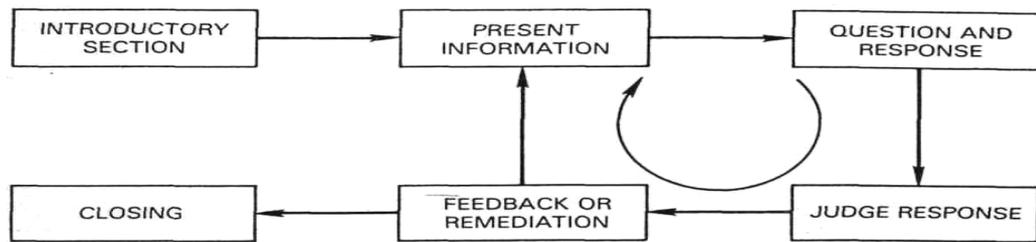
Figure 4

The general structure and flow of a tutorial

2.5.3.3. Simulations

Simulations attempt to simulate a scaled-down version of a real-life and provide the learners with opportunities to learn specific skills or improve decision-making processes. The computer acts as the controller, schedules the events, and provides the outcomes based on the options or events that the learner chooses.

These activities are mostly used in laboratory experiments in physical sciences (Mandell & Mandell, 1989; Alessi, and Trollip, 1985). Figure 5 shows the basic characteristics of a simulation (Alessi and Trollip, 1985, p. 17).

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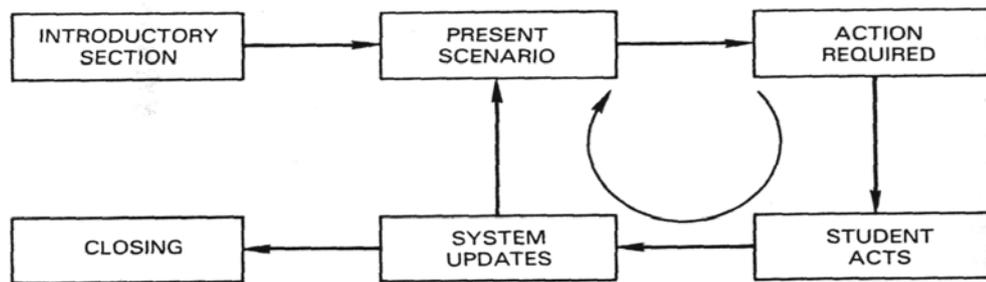
Figure 5

The basic characteristics of a simulation

2.5.3.4. Games

Games which can be integrated in many instructional activities provide an entertaining environment for the learners. It is a highly motivating tool for teenagers and adults as well as the young learners. Many types of interesting games are available on the market.

2.6. Language teaching and CALL

As Warschauer and Meskill (2000) suggest, every type of language teaching uses its own techniques to help learners. With the introduction of Grammar-translation method, the blackboard came into use in language classrooms. Later, it was replaced by overhead projector. Following them, computer software was used to provide learners with drill-and-practice exercises.

In 1970s and 80s, university language classes used the audio-lingual method with audio cassettes that would make learners perform the repetitious drills (Bax, 2003).

Throughout the 1970s and much of the 1980s, the most prominent form of CALL was drill-and-practice programs (Jonassen, 1996).

In 1980s and 1990s, a new type of language teaching method emphasizing communicative language teaching came into use. In this method, interaction and meaningful activities were the key aims for learners to gain (Richards and Rodgers, 2002). With this method, new computer software was designed and used to provide learners with meaningful communication activities with might be used outside the classroom. Later, how technology should be integrated into curriculum became the concern for the researchers paying attention to advantages and disadvantages of this new system (Warschauer & Meskill, 2000).

In the 2000s, computer software, the Internet and multimedia applications appropriate to a language lesson were integrated, thereby exposing the students to "a common lab experience" (Stroud, 1998).

Warschauer (1996) categorized the development of computer assisted language learning into three distinct phases as *Behavioristic CALL*, *Communicative CALL* and *Integrative CALL*. In *Behavioristic CALL*, learners are exposed to the same material and computers were found to be ideal for performing repeated drills, which allows students to study at their own page. *Communicative CALL* focuses more on using forms and teaching grammar implicitly, thereby allowing students to generate original utterances. In *Integrative CALL* computers and the Internet are integrated to expose learners to language use in authentic environments. Table 3

outlines the development of CALL as regards the three phases suggested by Warschauer, 1996; Kern and Warschauer, 2000 and Warschauer, 2000.

Table 3

The development of CALL

Stage	1970s-1980s: Structural CALL	1980s-1990s: Communicative CALL	21st Century: Integrative CALL
Technology	Mainframe	PCs	Multimedia and Internet
English-Teaching Paradigm	Grammar-Translation & Audio-Lingual	Communicate Language Teaching	Content-Based, ESP/EAP
View of Language	Structural (a formal structural system)	Cognitive (a mentally-constructed system)	Socio-cognitive (developed in social interaction)
Principal Use of Computers	Drill and Practice	Communicative Exercises	Authentic Discourse
Principal Objective	Accuracy	And Fluency	And Agency

Bax (2003) outlined three phases of CALL development which are very similar to Warschauer's (1996) three phases. Bax categorized CALL into *Restricted*, *Open* and *Integrated CALL* (p. 21) (see Table 4).

Table 4

Restricted, open and integrated CALL: An outline

Content	Type of task	Type of student activity	Type of feedback
Language System			
Restricted CALL	closed drills Quizzes	text reconstruction answering closed Questions Minimal interaction With other learners	correct/incorrect
Open CALL System and skills	Simulation Games CMC	Interacting with the computer occasional interaction with other learners	focus of linguistic skills open, flexible
Integrated CALL Integrated language Skills work Mixed Skills e-mail	CMC WP e-mail	Frequent interaction with other learners Some interaction with Computer through the lesson	Interpreting, Evaluating, Commenting Stimulating Thought

Kern and Warschauer (2000) summarized the respective instructional foci commonly associated with structural, cognitive, and sociocognitive approaches to language teaching together with the principle roles of computers in each of the views (see Table 5 & 6).

Table 5

Pedagogical foci in structural, cognitive, and sociocognitive frameworks

	Structural	*Cognitive*	*Sociocognitive*
How is language viewed?	As autonomous structural system.	As a mentally constructed system.	As a social and cognitive phenomenon.
How is language understood to develop?	Through transmission from competent users. Internalization of structures and habits through repetition and corrective feedback.	Through the operation of innate cognitive heuristics on language input.	Through social interaction and assimilation of others' speech.
What should be fostered in learners?	Mastery of a prescriptive norm, imitation of modeled discourse, with minimal errors.	Ongoing development of their interlanguage. Ability to realize their individual communicative purposes.	Attention to form (including genre, register, and style variation) in contexts of real language use.
How is instruction oriented?	Toward well-formed language products (spoken or written). Focus on mastery of discrete skills.	Toward cognitive processes involved in the learning and use of language. Focus on development of strategies for communication and learning.	Toward negotiation of meaning through collaborative interaction with others. Creating a discourse community with authentic communicative tasks.
Where is meaning located?	In utterances and texts (to be extracted by listener or reader).	In the mind of the learner (through activation of existing knowledge).	In the interaction between interlocutors, writers and readers; constrained by interpretive rules of the relevant discourse community.

Table 6

The role of CALL in structural, cognitive, and sociocognitive frameworks

	Structural	*Cognitive*	*Sociocognitive*
What is the principal role of computers?	To provide unlimited drill, practice, tutorial explanation, and corrective feedback.	To provide language input and analytical and inferential tasks.	To provide alternative contexts for social interaction; to facilitate access to existing discourse communities and the creation of new ones.

2.7. Empirical and qualitative studies on CALL in the world

Research efforts which are relative to CALL have focused on five broad areas, including efficacy, students' and teachers' attitudes, computer familiarity, advantages and limitations of CALL in the classroom. In literature, there are quite a few studies regarding the use of CALL and its implications for the language researchers and teachers.

2.7.1. Studies on efficacy of CALL

Most of the studies based their findings on case, qualitative and research-based studies while discussing the efficacy of CALL (Pawling, 1999; Gillespie & McKee 1999; Lambacher 1999; Kulik & Kulik, 1991; Dunkel, 1987; Pederson, 1987; Chapelle & Jamieson, 1989; Dunkel, 1991b (as cited in Son, 1998); Nagata, 1991; Nutta, 1998; Hauck, Mclain, & Yougns, 1999; Murray, 1999; Dewhurst, Macleod,

& Norris, 2000; Garica, & Arias, 2000; Yang, 2001; Heppner, Anderson, Farstrup, & Wederman, 1985 (as cited in Sawaki, 2001); Fish & Feldman, 1987; McGoldrick, Martin, Bergering, & Symons, 1992; Richardson & Dillon, 1990; Zulk, 1986 (as cited in Sawaki, 2001); Ying, 2002; Clark, 1985c (as cited in Allum, 2002); Muir-Herzig, 2004.)

One of the studies discussing the use of CALL is Pawling's study, which was conducted in 1999. In her study, she aimed to evaluate the feasibility and effectiveness of CD-Rom as a tool for research-based language learning and focused on two case studies. She carried out her study with eleven sixth grade children learning English vocabulary through an application called *Directions 2000* which can be described as a multimedia dictionary and found that learners assimilated vocabulary through playing the modal sentences as many times as required. According to Pawling,

> CD-ROM is potentially a liberating instrument for teachers and learners alike in that it has the special facility of incorporating practice in all four language skills mentioned above in a multimedia package using video, text, photograph and sound. There is much evidence; not least teachers' own experience, to suggest that computer-based learning is very motivating for children (p. 164).

In another study conducted by Gillespie and McKee (1999), learners from undergraduate and graduate studies were exposed to their own CALL software. The findings of this study showed that CALL enhanced student performance and skills considerably in their studies with undergraduate and graduate learners.

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Lambacher (1999) used a software designed for pronunciation training in teaching English to forty primary school Japanese learners, which resulted in the improved perception and production of English consonants as they reviewed as many times as they could and they got immediate feedback.

Kulik and Kulik (1991) surveyed more than 500 studies which compared learners who received computer-assisted instruction with the learners who received traditional instruction. They found that learners tend to learn more and in less time with computer-assisted learning.

Dunkel (1987) stated that "Many of the researches conducting literature reviews and meta-analyses in the 1960s and 70s were forced to conclude that there was no discernible cause-an-effect relationship between pupil learning" (p. 252). He also added that the results were questionable in terms of the other fields such as social sciences since these studies were mostly related to mathematics.

Nagata's study in 1996 included participants from two first-semester Japanese classes at the University of San Francisco. Twenty-six students participated in the study. The results show that given the same grammar notes and exercises, ongoing intelligent computer feedback is more effective than simple workbook answer sheets for developing learner's grammatical skill in producing Japanese particles and sentences.

Nutta's study in 1998 consisted of 53 students enrolled in an intensive academic ESL institute at a major university in Florida. It compared the method of grammar instruction, teacher-directed or computer-based. The results showed that computer-based students scored significantly higher on open-ended tests than the teacher-directed students. No significant differences were found between the computer-based and teacher-directed students' scores on multiple choice or fill-in-the-blank tests.

In the study of Hauck, Mclain, & Youngs (1999), thirty-three French II students were the participants. Findings indicated that the students in the CALL group performed equally well as the control group in listening and speaking and better on reading and writing.

Murray (1999) studied the effect of interactive video program. Participants (Twenty-three French second-language learners) were mostly students from the Faculty of Arts of a large Canadian university. The study benefited from personal language learning histories, journals, video observation, interviews, and pre/post language proficiency tests. Murray (1999) stressed the importance of being a member of a community and engaging in activities by saying that

> We learn a language by becoming members of a community of practice. Being a member of a community means getting to know people, engaging in activities, and having a physical space as well as an identity within that community (p. 192).

Russel (1999) compared the paper and the computer versions of reading tests. He found out that paper versus computer administration did not significantly affect the test taker's performance.

Dewhurst, Macleod and Norris (2000) compared the difference between the computer-assisted instruction and traditional instruction. The results revealed that Sixty-two students of undergraduate Physiotherapy studying on Human Physiology did equally well.

Similarly, Garcia and Arias (2000) compared the performance of sixty students of Land Surveying at the Extremadura University in Spain. They found out that students made use of the references provided by the computer more extensively than they did of the printed references. Also, the results showed that students' motivation to access computer-supported information was higher than accessing similar information in print-oriented references.

Yang (2001), in his study of fifty-five participants, second-year students in an applied linguistics program, discussed that students benefited from maximizing the language and learning link in computer-mediated environments, particularly web-based instruction.

Sawaki (2001) listed the studies carried out on computer-based and paper-based reading. The studies done by Heppner, Anderson, Farstrup, and Weiderman (1985) (as cited in Sawaki) showed that students outperform in the paper-based version

of the reading tests, whereas some studies showed that they are equal (Fish & Feldmann, 1987; McGoldrick, Martin, Bergering and Symons, 1992; McKnight, Richardson & Dillon, 1990; Zulk, 1986 (as cited in Sawaki, 2001).

In Ying's study (2002), the participants were thirty-two junior students majoring in Foreign Trade English at the school of Foreign Languages of Suzhou University. The results indicated that network-assisted environments provided learners with autonomous training and learning.

On the other hand, Allum (2002) stated that "…CALL does indeed deliver as effectively as conventional means in a range of language learning tasks"(p. 147). Clark (1985c) (as cited in Allum, 2002) proposed that when methodology is kept consistent, there is no difference in results between computer-based instruction and teacher-led instruction.

Muir-Herzig (2004) studied the technology use of teachers from a Northwest Ohio high school. Results of the study indicated that teachers' technology use, students' technology use, overall technology use had no significant positive effect on the grades and attendance of at-risk students. Also, the results supported that technology use was low among the teachers in the sample.

2.7.2. Students' attitudes towards CALL

Several studies have reported students' attitudes towards CALL. These studies regarding the learners' attitudes towards CALL lead to promising findings for the use of CALL in language classrooms (Finkbeiner, 2001; Ayres, 2002; Allum, 2002; Mitra, 1997; Dewhurst, et all., 2000; Stricker and Rock 2004; Shaw and Marlow, 1999; Holmes, 1998; Debski, 2000).

Finkbeiner (2001) administered a questionnaire to 100 undergraduate EFL learners and collected data from 82 learners to learn about the learners' attitude and interest in CALL and cooperative learning. He showed that ESL (English as a Second Language) undergraduate learners had positive attitudes towards CALL and suggested that a successful implementation of CALL required it to be put into everyday study life.

In a similar study conducted by Ayres (2002), 157 non-native undergraduates from certificate and diploma courses at the school of English and Applied Linguistics were studied in a CALL environment to gather some empirical data to assess how much learners valued the use of CALL in their course. It was found that university learners appreciated and valued learning through CALL, which meant that CALL had high face validity with learners. Also in another study carried by Mitra (1997), learners' attitudes towards computers were discovered to be very important since it would affect the learners' view of CALL.

Allum (2002) argued that students had positive feelings about CALL and suggested that CALL should be mixed with the regular classes, and similarly Dewhurst et all. (2000) discussed that students became more positive after they had experienced using CALL.

Ayres (2002) had participants of 157 non-native speaker undergraduates who were enrolled in various certificate and diploma courses at the School of English and Applied Linguistics. The results indicated that learners favored classroom-based teaching over using a computer. They did not see it as a worthwhile replacement for classroom-based learning but, it had high face validity with learners.

Stricker and Rock (2004) studied the attitudes of the test takers who took the computer-based TOEFL in the spring and summer of 1999; a total of 689 test takers. Results revealed that positive attitudes towards computer-based testing but negative towards admission tests.

Shaw and Marlow (1999) stated that in their study, the participants of 99 sports science and nutrition undergraduates were uncomfortable with computers, were unhappy about the lack of personal contact and preferred to learn in a more traditional way.

Holmes (1998) studied the influence of CALL in 100 Japanese first-year students' language classroom. Agreement as regards the benefits of CALL in language

education was stated, but the students' real reason was to communicate internationally.

Debski (2000) discussed project-oriented CALL innovation at the University of Melbourne, based on the principles of socio-collaborative language learning with computers. Language teachers and students participated in his study. The results indicated that the participants appreciated learning situations which are not available in traditional classes.

2.7.3. Teachers and CALL

Most of the studies focusing on teachers and CALL discussed the training and the attitudes of teachers towards CALL. (Egbert, Paulis, & Nakamichi, 2002; Warschauer, 2002; Ridgway & Passey, 1991; Jones, 2002). Egbert, Paulis, & Nakamichi (2002) had participants of twenty English as a second language and foreign language teachers in their sample. They used surveys and follow-up interviews on technology use in class. They concluded that lack of time, support and resources prohibited the use of CALL by the teachers.

Warschauer (2002) discussed the training of instructors in Egypt about the use and applications of CALL. An interesting anecdote was given in his discussion of CALL. He said that an Egyptian university lecturer expressed his view as: "we have the hardware, we have the software, but we lack the humanware", which is really the same case in Turkey.

Ridgway and Passey (1991) stressed out the importance of training teachers and exploiting the use of computers more than as a word processor in the classroom. Similarly, Jones (2002) argued that teachers need to become informed users of technology and stressed the importance of technology training.

2.7.4. Computer familiarity

The use of computers in education and testing also raised concerns about whether computer familiarity plays a role in teaching and testing. Several studies discussed the effect of computer familiarity on performance and the characterization of the learners in terms of computer familiarity (Kirsch, Jamieson, Taylor, & Eignor, 1998; Taylor, Jamieson, Eignor, & Kirsch, 1998).

Kirsch, Jamieson, Taylor, & Eignor (1998) surveyed 90.000 TOEFL examinees in their first phase of their study in April and May of 1996 regarding their access to, attitude toward, and experience using computers and investigated the relationship among proficiency as measured by paper-and-pencil TOEFL test, background characteristics, and computer familiarity. The study showed that there were differences in regard to computer familiarity defined by native language and region. It was also discussed that a small but significant relationship existed between computer familiarity and TOEFL test scores on the paper-and-pencil test. As regards the results, it was suggested that computer familiarization was necessary for the individuals who would take the computer-based TOEFL and writing classes could include word-processing.

Taylor, Jamieson, Eignor, and Kirsch (1998) in their second phase of their study investigated the relationship between the level of computer familiarity and performance on the computer-based items adjusting for language ability. The results suggested that there was no difference on the computer based TOEFL performance due to lack of prior computer experience. However, it was mentioned that a practically significant interaction was found between computer familiarity and reason for taking the test on the computerized reading items.

2.7.5. Advantages of CALL

Chavez (1990) determined that technology together with meaningful tasks and interactional purposes promoted a positive second language learning environment, stressing the importance of learner autonomy (as cited in Liu, Moore, Graham and Lee, 2003). Similarly, an analysis by Ying (2002) indicated that network-assisted environments provide learners with autonomous training and learning. These studies contributed to learner autonomy, which means that learners can learn according to their own pace and review what they have learned easily. This is the most known benefit of CALL in educational settings.

According to Ikeda (1999), drill-type CAI materials are suitable for repetitive practice, which enables students to learn concepts and key elements in a subject area. Brown (1997) listed the advantages of CALL as giving immediate feedback, allowing students to work at their own pace, and causing less frustration among students.

Winter (2002) stressed the importance of flexible learning, learning anywhere, anytime, anyhow, anything you want, which is very true for the web-based instruction and CALL. Learners are given an opportunity to study and review the materials as many times they want without limited time.

According to Garcia and Arias (2000), using CALL in a classroom has the following advantages: Increased motivation of the students, individualization of learning process, immediate feedback, non-linear access to the information, and the introduction of new exercise types in the classroom.

Stokes (1997) stated that students can get detailed feedback and hints which led the students to think, and added that

> The computer is tireless and non-judgmental. Students can play with the language and deliberately get things wrong and nobody will know. (This is especially important in those places where the concept of 'face' means that students worry unduly about making mistakes) (p. 20).

Considering the suggestions made by the authors discussed, the following list can be outlined to indicate the advantages of CALL in the classroom:

- Learner autonomy

- Repetitive practice

- Immediate and detailed feedback to learners as regards their progress, mistakes etc.)

- Flexible learning (anytime, anywhere, anything learners want)

- Non-linear learning

- Increased motivation

- Less frustration

- New types of exercises

2.7.6. Limitations of CALL

Blyth (1999) and Bradley and Lomicka (2000) examined college learners' perceptions and experiences with technology in a computer-assisted language learning environment. Through learners' written feedback, Blyth concluded that successful implementation on new pedagogical approaches in software design and learning activities requires careful considerations. (as cited in Liu, Moore, Graham and Lee, 2003).

According to Chapelle (1997), a CALL activity should offer the opportunity for comprehensible output. He also added that activities must require the learner to produce linguistic output, not just "mouse clicks".

Ross and Schulz (1999) investigated the differences in learning styles among participants, who received CAI. Seventy University of Calgary undergraduate students participated in the study. Results showed that CAI, as an instructional tool may not be suitable for all learners, differences such as cognitive learning styles. Some learners may have difficulty adapting to certain forms of computer-mediated learning.

Brown (1997) listed the disadvantages of calls as computer equipment (not always available or in working order), screen capacity (reading passages), Students' familiarity and negative attitudes towards computers and computer anxiety.

Alatis (1983) stated that technology can be destructive if it fails to function in response to the humanistic objective of the educational classrooms. According to Jones and Fortescue (1991), computers are seen as quizmasters and CALL implies the substitution of computer for teachers. Kenning and Kenning (1984) found reading from a screen rather than from a printed text tiring and considered it as a limitation of CALL.

Bax (2003) discussed the implementation of CALL in different schools and teachers. He analyzed two case studies involving different university teachers and concluded that teachers should be trained and provided with pedagogical support. This leads to the fact that technology cannot solve a problem alone. Implementation of CALL requires close attention, critically selected software, teachers' and learners' positive attitudes .Using CALL requires a lot of time and money for all the necessary arrangements.

Considering the suggestions made by the researchers discussed, the following list can be designed to indicate the disadvantages of CALL in the classroom:

- High cost of equipment and software
- Low capacity of the equipments
- Lack of CALL software of high quality

- Lack of trained teachers

- Computer anxiety among students and teachers

- Not suitable for all learners (different learning styles)

2.8. Qualitative and empirical studies on CALL in Turkey

In the literature, almost all of the studies conducted with regard to CALL in Turkey are qualitative studies carried out as master theses or dissertations. In these studies, suggestions were made regarding computer-based instruction and some models were proposed for the integration of computers in classrooms (Gökdaş, 1996; Titiz, 1997; Yaşar, 1997; Dursun, 1998; Bayır, 1995).

Gökdaş (1996) discussed the computer education in the faculties of education in Turkey. In his overview of computer education and teacher training, he concluded that the courses in the faculties of education were not rich and various in regard to content as compared to other faculties in European countries and in the USA.

Titiz (1997) (as cited in Uşun) pointed out the importance of access to and evaluation of software. Also, he discussed that the production of software in Turkish was necessary.

Yaşar (1997) proposed a model for the use of CAI in Turkey. He benefited from the review of the results of the studies done in Arizona in the USA and discussed the problems in CAI, teacher training and the use of computers.

Dursun (1998) reviewed the literature in regard to CALL and the qualifiedness of the teachers to work with the help of CAI in classrooms. The participants were teachers of computer education, teachers working in computer laboratories and administrators, 80 participants in total. The results suggested that only 32.4 percent of the participants felt comfortable while benefiting from computer-assisted instruction and using computers.

In Bayır's experimental study (1995) 42 employees from the Central Bank of Turkish Republic (graduates of high school and university) were the participants. The results suggested that computer-assisted multimedia instruction had a significant effect on learning according to one's own pace. The results also indicated that participants preferred computer-assisted multimedia instruction, and the participants explained that they learnt better in this type of instruction.

As can be seen from the review of literature presented above, whereas CALL was found effective by some researchers (Gillespie & McKee, 1999; Kulik and Kulik, 1991), some other studies reported no difference in learners' performance favoring CALL (Nutta, 1998; Dewhurst et all, 2000; Clark as cited in Allum, 2002; Herzig-Mmuir, 2004). Related to learning the structure of English, listening and reading skills, some studies reported that the CALL group was not effective. Heppner, Anderson, Farstrup, and Weiderman (1985, as cited in Sawaki, 2001) favored paper-based reading while some researchers reported that CALL performed equally well (Hauck, Mclain, and Youngs, 1999; Fish and Feldmann, 1987; McGoldrick, Martin, Bergering and Symons, 1992; McKnight, Richardson &

Dillon, 1990; Zulk as cited in Sawaki, 2001). Nagata (1996) favored CALL for teaching and learning of English grammar. Hauck, Mclain, and Youngs (1999) indicated that the students in the CALL group performed equally well as the control group in listening. Regarding the students' attitudes towards CALL, Bayır (1995), Finkbeiner (2001), Ayres (2002), Album (2002), Dewhurst, Macleod, and Norris (2000), and Debski (2000) reported that students had positive attitudes and valued CALL, while negative attitudes were reported by Shaw and Marlow (1999). Teachers' views of CALL were discussed by Gbert, Paulis, and Nakamichi, 2002; Warschauer, 2002; Ridgway & Passey, 1991; Jones, 2002). Advantages of CALL such as learner autonomy, repetitive practice and immediate feedback and disadvantages of CALL such as high cost of equipment, lack of CALL software of high quality and lack of trained teachers were discussed and reported by Chavez (as cited in Liu, Moore, Graham and Lee, 2003); Ying, 2002; Ikeda, 1999; Winter, 2002; Garcia and Arias, 2000; Stokes, 1997; Chapelle, 1997; Ross and Schulz, 1999; Alatis, 1983; Jones and Fortescue, 1991; Kenning and Kenning, 1984; Bax, 2003). Also, computer familiarization was regarded as necessary, but no significant difference on performance was found as regards prior computer experience (Kirsch, Jamieson, Taylor, & Eignor, 1998; Taylor, Jamieson, Eignor, & Kirsch, 1998).

CHAPTER III

METHOD

3.0. Presentation

Information on the procedure and method of this study is provided in this chapter. This study focuses on two teaching methods (computer-assisted language learning and traditional instructional language learning) and their effect on the level of student achievement. The chapter is organized in the following sections: design of the study, participants, research problems and hypotheses, data collection instruments, variables in the study, data collection procedures, data analysis, threats to validity of the study, and limitations of the study.

3.1. Overall design of the study

The study was designed as a quasi-experimental study since it did not include the use of random assignment. It focused on using a computer-assisted language learning and traditional instruction to prepare the participants for the TOEFL exam. One class was taught using computer-assisted instruction (the teacher was in the class just to make sure that participants were working with the computers and to help if anything wrong with the computers occurs) in a language laboratory while the other class was taught using a traditional method of instruction in a traditional classroom setting. The sample consisted of 17 participants in each group. The training lasted for 8 weeks and the same instructor met the groups three

hours every week. The visual representation of the design of the study is provided in Table 7.

Table 7

Overall design of the study

Data	Number of participants	Time
Informed Consent	34	Before the beginning of the study
A. Pre-test	34 (17 in the control and 17 in the experimental group)	At the beginning of the study
B. Study	34	During 8 weeks
C. Post-test	34 (17 in the control and 17 in the experimental group)	At the end of the study
D. Individual Interview	17 (experimental group only)	After the post-test

3.2. Participants

The participants in the study were 34 sophomore students in the Department of Foreign Language Education in Middle East Technical University. The students were assigned to the three sections of the school experience course alphabetically at the beginning of the semester by the department. Participants were chosen from the third section, which were available for the study (convenience sampling). They were aged between 18 and 20 and they are mostly graduates of Anatolian

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Teacher Trainees' High School where a one year of English preparation program was required. Of the participants, twenty-nine were females and five were males.

The participants were randomly assigned to the experimental and control groups using a table of random numbers. Experimental (three males and fourteen females) and control groups (two males and fifteen females) consisted of 17 participants each since the language laboratory for experimental group could accommodate that number. They just started to use computers while taking the IS-100 course (This course is offered as a non-credit compulsory course during the first undergraduate year, which aims to provide the students with basic uses of computers in word-processing, sending e-mails etc.) The participants in the experimental group were given training before the study regarding the use of software.

3.3. Research problems and hypotheses

3.3.1. Research problems

1. Is there a statistically significant difference in regard to the total gain scores on the structure, reading, and the listening sections of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

    1.1. Is there a statistically significant difference in regard to the gain scores on the structure section of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

1.2. Is there a statistically significant difference in regard to the gain scores on the reading section of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

1.3. Is there a statistically significant difference in regard to the gain scores on the listening section of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

2. What are the learners' perceptions as regards the use of CALL for TOEFL preparation?

3.3.2. Hypotheses

1. There is no statistically significant difference in regard to the total gain scores on the structure, reading, and the listening sections of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

    1.1. There is no statistically significant difference in the scores obtained by the learners instructed by CALL and the learners instructed by traditional instruction on the structure section of TOEFL

    1.2. There is no statistically significant difference in the scores obtained by the learners instructed by CALL and the learners instructed by traditional instruction on the reading section of TOEFL.

    1.3. There is no statistically significant difference in the scores obtained by the learners instructed by CALL and the learners instructed by traditional instruction on the listening Section of TOEFL.

3.4. Data collection instruments

Pre-test and post-tests were used in the study. The questions were taken from the book, *TOEFL Test Preparation Kit Workbook* (TOEFL test materials selected from TOEFL Test Preparation Kit Workbook, Educational Testing Service, 1995. Reprinted with the permission of Educational Testing Service, the copyright owner.) The same test consisting of 140 items (50 items in the listening section, 40 items in the structure section and 50 items in the reading section) in a multiple choice format was used as the pre-test and post-test (see Appendix G). Scores for both the pre and post test were defined looking at the number of correct items. A correct answer was rated 1 and an incorrect answer 0. A semi-structured interview guide (6 questions) was used to collect data to answer the last research question. Fraenkel and Wallen (2003) stated that "educational research increasingly is, and should be, a mixture of quantitative and qualitative approaches. ..." (p. 430). In this study, in addition to the quantitative measures a semi-structured interview was used to find out what the participants thought and felt about computer-assisted language learning while preparing for the TOEFL exam.

Three experts in English language teaching were asked to comment on interview questions. The questions could not be piloted since the questions in the interview required the participants to give their opinions about the treatment provided.

3.5. Variables in the study

The independent variables for the study are the teaching methods (computer assisted language learning and the traditional instruction). The dependent variables are the pre and the post TOEFL exam test results.

Computer assisted language learning, as defined for this study, was provided in a language laboratory where learners worked alone on a computer using the provided programs and learnt at their own pace. The instructor did not participate in the learning process, but he made sure that learners were working alone on their computers.

Traditional instruction was given in lecture format and as information going from the instructor to the learners. Participants had to follow the instructor's schedule and they could not learn at their own pace. All the materials used in the groups were identical. For classroom practice, *English Grammar in Use* (see Appendix E for a screenshot) and *Cambridge Advanced Learner's Dictionary* (see Appendix D for a screenshot) were used. The CD versions of these materials were by the learners instructed by CALL. In addition*, Powerpreb: Preparation for the TOEFL Test* softwar*e* (see appendix F for a screenshot) *by ETS* was used by the participants. For participants instructed by traditional instruction, practice tests on the CD were converted to paper tests.

3.6. Data collection procedures

With the consent of the participants, the study was conducted after the regular classes in the department are over (after 4 p.m.). On the first day of classes, an informed consent form was presented (see Appendix A), which was adapted from the sample consent forms given in *How to Design and Evaluate Research in Education* by Jack R. Fraenkel and Norman E. Wallen (2003). After participants signed the form, the instructor administered the pre-test (paper version) to the control and experimental groups in the same class. Then, both groups received instruction through different media for eight weeks and three hours each week by the same instructor.

During the eight weeks, the participants in the experimental group studied the materials on the CDs and worked alone on a computer and learned at their own pace. They studied any section as much as they liked. The instructor did not participate in the teaching/learning process, but he made sure that that the participants were working alone on their computers. The participants in the control group met the instructor three hours each week during eight weeks. The same materials (printed and paper versions of the practice tests) were used according to the schedule set by the instructor. Participants studied structure, reading and listening (one hour was devoted to each) during three hours.

On the last day of classes, the instructor administered the same test as post test. The scores obtained by pre-test and post test were statistically analyzed. In addition, after two days following the post-test the participants in the experimental

group were interviewed one by one as regards their opinions about CALL (see Appendix B). The interview took place in the office of the researcher without a time limit, but took approximately, 7-10 minutes. The interviews with the learners were tape recorded and the researcher took notes. The participants were interviewed in English.

3.7. Data analysis

An independent samples t-test appeared to be an appropriate tool for data analysis in this study since there were two groups who were evaluated twice through pre and post tests. To test the relevance of the null hypothesis – There will is no statistically significant difference between the scores of the learners in the experimental and control groups, independent samples t-tests were run comparing the pre-test and post-test gain scores of the two groups. The interview data were subjected to content analysis.

3.8. Threats to validity of the study

The researcher may represent potential threat since he had contact with the participants and personal attributes of the instructor/researcher such as age and sex may affect how learners perceive instruction.

The attitudes and characteristics of the participants can influence the results of this study if they have previous experience related to computer assisted language learning or they have prejudice towards this type of instruction.

A testing threat may be present in this study since the participants responded to the same instrument (pre-test and post-test) twice although the test was given after 8 weeks of study.

The study ended towards the end of the semester when participants had end-of-term responsibilities. This could have affected the participants' performance and responses.

3.9. Limitations of the study

One limitation is that the study was carried out for eight weeks and three hours for each week within the time constraints and the availability of the participants.

As this study was carried out with two groups of undergraduate learners of Department of Foreign Language Education in Middle East Technical University, it is suggested that similar experiments with a large number of participants including writing and speaking skills can be repeated.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.0. Presentation

This chapter presents a description of the procedures used to analyze the data and obtain results. In the first section of this chapter, the sample is described. In the second section, the research questions and the hypotheses of the study are addressed, presenting the statistical analysis.

4.1. Analysis of data

An independent samples t-test was used in order to answer the first research question (see Appendix C for SPSS output). Independent samples t-test is a parametric test and parametric tests require assumptions about the variances between groups or conditions (Field, 2000). The first assumption that is required by parametric tests is that the variance in one experimental condition is roughly the same as the variance in any other experimental condition. This is called the homogeneity of variance. Levene's Test showed that the groups were homogeneous in terms of variance apart from reading section and total scores. The final assumption for parametric tests is that the data have to come from a population that has a normal distribution (Field and Hole, 2003). Kolmogorov-Smirnow test was used to check this. It revealed that the distribution of the sample is not significantly different from a normal distribution. The effect size, which is

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an objective and standardized measure of the magnitude of the observed effect, was measured and reported using the equation suggested by Rosenthal (1991, p. 19) as cited in Field:

$$r = \sqrt{\frac{t^2}{t^2 + df}}$$

The following accepted suggestions by Luckily (1988) and Cohen (1992) (as cited in Field & Hole, p.153) about what constitutes a large or small effect were into consideration:

r= .10 (small effect)

r= .30 (medium effect)

r= .50 (large effect)

4.2. Analysis of pre-test and post test results

4.2.1. Research Question 1

Is there a statistically significant difference in regard to the total gain scores on the structure, reading, and the listening sections of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

All effects were reported at a 0.5 level of significance. The reported difference between the control and experiment groups' gain scores was not statistically significant, t (26, 545) =1.445, p=.160, r=0.25. The mean scores were 5,235

(experimental group), and 8,000 (control group). Results of the t-test analysis indicated that the researcher must fail to reject the null hypothesis (See Table 8).

Table 8

Independent samples t-test analysis of gain score difference in total

	Group	N	M	SD	t	df	Sig.
tot_dif	control	17	8,000	4,123	1,445	32	,160
	exp	17	5,235	6,722			

4.2.2. Research question 1.1.

Is there a statistically significant difference in regard to the gain scores on the structure section of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

All effects were reported at a 0.5 level of significance. The reported difference between the control and experiment groups' gain scores on the structure section of TOEFL was not statistically significant, t (32) = -.755, p= 456, r= 0.13. The mean scores were 3,058 (experimental group), and 2,470 (control group). Results of the t-test analysis indicated that the researcher must fail to reject the null hypothesis (see Table 9).

Table 9

Independent samples t-test analysis of gain score difference in the structure section

	Group	N	M	SD	t	df	Sig.
str_dif	control	17	2,470	2,211	-, 755	32	,456
	exp	17	3,058	2,331			

4.2.3. Research question 1.2.

Is there a statistically significant difference in regard to the gain scores on the reading section of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

All effects were reported at a 0.5 level of significance. The reported difference between the control and experiment groups' gain scores on the reading section of TOEFL was statistically significant, t (20, 228) = 4.002, p= 0.001, r=0.58. The mean scores were -1. 764 (experimental group), and 3,294 (control group). Control group scored higher than the experimental group. Results of the t-test analysis indicated that the researcher must reject the null hypothesis. The effect size indicated that the difference in the scores obtained by the participants in the control and experimental group represents a large and therefore substantive effect (see Table 10).

Table 10

Independent samples t-test analysis of gain score difference in the reading section

	Group	N	M	SD	t	df	Sig.
read_dif	control	17	3,294	1,794	4,002	32	,001*
	exp	17	-1,764	4,892			

*p<0.01

4.2.4. Research question 1.3.

Is there a statistically significant difference in regard to the gain scores on the listening section of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

All effects were reported at a 0.5 level of significance. The reported difference between the control and experiment groups' gain scores on the listening section of TOEFL was statistically significant, *t* (32) = -2.228, *p*= .032, *r*= 0.37. The mean scores were 3,941 (experimental group), and 2,235 (control group). Experimental group scored higher than control group. Results of the t-test analysis indicated that the researcher must reject the null hypothesis. The effect size indicated that the difference in the scores obtained by the participants in the control and experimental group represents a moderate and therefore substantive effect (see Table 11).

Table 11

Independent samples t-test analysis of the gain score difference in the listening section

	Group	N	M	SD	t	df	Sig.
list_dif	control	17	2,235	2,107	-2, 238	32	,032*
	exp	17	3,941	2,331			

*p<0.05

4.3. Analysis of the interviews with the participants

<u>Research Question 2</u>

What are the learners' perceptions as regards the use of CALL for TOEFL preparation?

After two days following the post-test the participants in the experimental group (17 participants) were interviewed one by one as regards their opinions about CALL (see Appendix B). The interview took place in the office of the researcher without a time limit, but took approximately, 7-10 minutes. The interviews with the learners were tape recorded and the researcher took notes. The participants were interviewed in English.

The participants were asked, "*Did you feel comfortable working with CALL? Why? / Why not?*", On the whole, the participants (n= 8, 47%) said that they did not felt

comfortable working with computers. They claimed that they were not used to having computers as an instructional tool in the learning and teaching process. Also, they added that although their high school had computers in the laboratory, the administration just covered it to protect it from dust and being broken. They just started to use computers while taking the IS-100 course (This course is offered as a non-credit compulsory course during the first undergraduate year, which aims to provide the students with basic uses of computers in word-processing, sending e-mails etc.) Oppositely, 9 participants (53%) said that they felt comfortable while working with computers. Also, 2 of the participants mentioned that they were used to having computers in their homes or high schools. Some of them also said that they had some English courses in their high school in which computers were used as instructional tools in the classrooms especially to teach grammar and vocabulary.

In response to the question, "*Was CALL motivating to you? Why? / Why not?*" 82% of the participants (n= 14) claimed that they found CALL motivating. Several reasons were provided by the participants:

- studying anything as much as they could

- spending more time on the sections they are having difficulty in

- getting immediate feedback

- reviewing the material they are studying as much as they could.

However, 3 of the participants (18%) mentioned the necessity of having a teacher in the classroom. They claimed that the interaction that the computer provided was

artificial and they were sometimes bored with the same feedback style (like "this is wrong, please try again" etc.) Another commented on the fact that he could not get answers to specific questions and that was the beyond the capacity of the computers.

Twelve learners (71%) thought that listening skill was the most suitable one to practise having CALL in a classroom as regards the question "*Which language skill would you like to practise using a CALL approach? Why? Why not?*" They explained that computers could be helpful since they enable learners spend more time on whatever they want to study. Also, they added that in traditional classrooms generally listening skill was ignored or given little importance or they just listened to a passage or a dialogue for one or two minutes, but with the help of computers, a learner could practise as much as s/he could. Some participants (n= 5, 29%) claimed that CALL was more appropriate to practise structure of the target language that they were learning. All of the participants also put forward that reading skill and reading activities were not appropriate for CALL. They said that they hated reading on screen and ignored reading activities/questions most of the time. Several reasons were provided for doing like this:

- not possible to take notes, underlie the important points
- not seeing a reading passage as a whole
- bored with scrolling up and down
- not being used to reading passages/texts on screens

To discover the participants' opinions on classes which used CALL they were asked, "*Would you like to have more classes presented using a CALL approach? Why? / Why not?*" Comments given in reply to this question were mainly that the skills were of interest. Majority of the participants (n=13, 77%) said that they would like to have CALL classes provided that they were incorporated into their regular classes, especially where listening skills are practiced. Four learners (23%) put forward that they did not want to have classes using a CALL approach since they were not friendly to use.

In response to the question, "*What were your feelings towards CALL before/after having a class presented using a CALL approach?*", 41 % of the participants (n= 7) said that they had negative feelings while 47% of the participants (n=8) claimed that they had neither negative or positive feelings before having a class using a CALL approach. Oppositely, 12% of the learners (n=2) said that they had positive feelings. Five participants (29%) said that they had still negative feelings towards CALL after being exposed to it. However, twelve participants (71%) explained that they had positive feelings (see Table 12 for the visual representation of the findings of the interviews with the participants).

Table 12

Findings obtained through the interviews with the participants

Reference	Learners (n=17)			
	Frequency		Per cent	
	Yes	No	Yes	No
Feeling comfortable with CALL	8	9	47	53

Reference	Learners (n=17)					
	Frequency			Per cent		
	Yes	No		Yes	No	
CALL more motivation than traditional class	3	14		18	82	
Having more classes (CALL)	4	13		23	77	
	Frequency			Per cent		
	negative	neutral	positive	negative	neutral	positive
Feelings towards CALL (before)	7	8	2	41	47	12
Feelings towards CALL (after)	5	-	12	29	-	71
	listening	structure		listening	structure	
Language skill to practise using CALL	12	5		71	29	

Table 12 (continued)

CHAPTER V

CONCLUSION

5.0. Presentation

In this chapter, initially a summary of the study is provided. Then, the results obtained are reviewed and discussed. Later, the suggestions and teaching implications are presented. Finally, an assessment of the study and the implications for teaching and further research are provided.

5.1. Summary of the study

The study was designed as a quasi-experimental research and two variables were focused on: Computer-assisted language learning and traditional instruction. The participants in the study were 34 sophomore students in the Department of Foreign Language Education in Middle East Technical University. The students were assigned to the three sections of the school experience course alphabetically at the beginning of the semester by the department. Participants were chosen from the third section, who were available for the study (convenience sampling). They were aged between 18 and 20 and they are mostly graduates of Anatolian Teacher Trainees' High School where a one year of English preparation program was required. Of the participants, twenty-nine were females and five were males.

The participants were randomly assigned to the experimental and control groups using a table of random numbers. Experimental (three males and fourteen females) and control groups (two males and fifteen females) consisted of 17 participants each since the language laboratory for experimental group was available for that number.

Experimental group was taught using computer-assisted instruction (the teacher was in the class just to make sure that participants were working with the computers and to help if anything wrong with the computers occurs) in a language laboratory while the other class was taught using a traditional method of instruction in a traditional classroom setting.

The training lasted for 8 weeks and the same instructor met the groups three hours each week. During the first week a pre-test was given to the both groups. Then, a post-test was given at the end of the study. The experimental group participants were also interviewed in regard to CALL. Pre and post-test gain scores were statistically analyzed and the interviews were subjected to content analysis. The results showed that there was no statistically significant difference between the control and experimental group in overall scores and on the structure section. However, statistically significant differences were found on the reading and listening sections. Experimental scored higher than control group on the reading and listening sections. The interviews showed that the participants in the experimental group valued computer-assisted language learning. However, it was

suggested by the participants that computer-assisted language learning should be incorporated into the regular classes, where especially listening skill is focused on.

5.2. Results and Discussion

Research question 1

Is there a statistically significant difference in regard to the total gain scores on the structure, reading, and the listening sections of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

There were no statistically significant overall differences between the control and experimental groups. Independent samples t-test analysis indicated that the researcher must fail to reject the null hypothesis.

This result is in alignment with the findings of Nutta (1998), Dewhurst et all (2000); Clark (as cited in Allum, 2002), and Herzig-Mmuir (2004). In Nutta's study, no significant differences were found between the computer-based and teacher-directed students' scores on multiple choice or fill-in-the-blank tests. Dewhurst, Macleod and Norris reported their results, which showed that sixty-two undergraduate students studying Human Physiology did equally well. Clark (as cited in Allum) discussed that when methodology is kept consistent, there is no difference in results between computer-based instruction and teacher-led instruction. The results of Herzig-Muir's study indicated that teachers' technology use, students' technology use, overall technology use had no significant positive effect on the grades and attendance of at-risk students.

This result is not in alignment with the findings of Gillespie and McKee (1999) and Kulik and Kulik (1991). Gillespie and McKee's study showed that CALL enhanced student performance and skills considerably in their studies with undergraduate and graduate learners. Kulik and Kulik, in their literature overview of more than 500 studies of computer-based teaching, reported that learners tend to learn more and in less time with computer-assisted learning. For this particular study, most of the participants had only experienced courses instructed in a traditional or lecture method. They had no prior experience with CALL. This might be an explanation for the non-significant differences on the pre-test and post tests results.

Research question 1.1

Is there a statistically significant difference in regard to the gain scores on the structure section of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

There were no statistically significant overall differences between the control and experimental groups. Independent samples t-test analysis indicated that the researcher must fail to reject the null hypothesis.

This result is not in alignment with the findings of the study done by Nagata (1996). Nagata's study showed that given the same grammar notes and exercises, ongoing intelligent computer feedback is more effective than simple workbook

answer sheets for developing learner's grammatical skill in producing Japanese particles and sentences. In the present study, participants were instructed in English and the study was carried out in regard to a test of English. This might be an explanation for the non-significant difference between the two groups. Also, Nagata focused on the importance of feedback whereas the present study focused on the study of structure on a computer terminal.

Research question 1.2

Is there a statistically significant difference in regard to the gain scores on the reading section of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

There were statistically significant differences between the control and experimental groups. Control group instructed by traditional method outperformed the experimental group on the reading section. Independent samples t-test analysis indicated that the researcher must reject the null hypothesis.

This result is in alignment with the findings of the studies done by Heppner, Anderson, Farstrup, and Weiderman (1985) (as cited in Sawaki). These studies showed that students outperform in the paper-based version of the reading tests.

This result is not in alignment with the findings of Hauck, Mclain, and Youngs (1999), Fish & Feldmann, 1987; McGoldrick, Martin, Bergering and Symons, 1992; McKnight, Richardson & Dillon, 1990; Zulk, 1986 (as cited in Sawaki,

2001). The study conducted by Hauck, Mclain, and Youngs indicated that the students in the CALL group performed equally or better on reading. The studies conducted by Fish and Feldmann; McGoldrick, Martin, Bergering and Symons; McKnight, Richardson and Dillon; Zulk as cited in Sawaki showed that there were no differences between the paper-based and computerized version of the reading tests.

In the present study, all of the participants also put forward that reading skill and reading activities were not appropriate for CALL. They also explained that they hated reading on screen and ignored reading activities/questions most of the time. Several reasons were provided by the participants:

- not possible to take notes, underlie the important points

- not seeing a reading passage as a whole

- bored with scrolling up and down

- not being used to reading passages/texts on screens

It is possible that because of the reasons suggested by the participants in the present study, there were statistically significant difference on the reading section. This may also question the reliability of computerized TOEFL reading tests because of the difficulties suggested by the participants. Most of the participants began to use computer during their undergraduate studies and they were not used to reading passages/texts on screens. This suggests that local settings and the computer familiarity of the learners are also important.

Research question 1.3

Is there a statistically significant difference in regard to the gain scores on the listening section of TOEFL between learners instructed by CALL and the learners instructed by traditional instruction?

There was a statistically significant difference between the control and experimental groups. Experimental group instructed by traditional method outperformed the control group on the listening section. Independent samples t-test analysis indicated that the researcher must reject the null hypothesis.

This result is not in alignment with the findings of the study done by Hauck, Mclain, and Youngs (1999). The findings of the study conducted by Hauck, Mclain, and Youngs indicated that the students in the CALL group performed equally well as the control group in listening section. In the present study, the majority of the participants explained that in traditional classrooms generally listening skill is ignored or given little importance or students just listen to a passage or a dialogue for one or two minutes. However, they added that with the help of computers, a learner could practise as much as s/he could. This might be an explanation for the difference between the two groups since it is possible that the participants in the experimental group devoted much more time to the listening section while studying the material.

What are the learners' perceptions as regards the use of CALL for TOEFL preparation?

The majority of the participants found CALL motivating and had positive attitudes towards CALL. Several reasons were provided by the participants:

- studying as much as they could

- spending more time on the sections they are having difficulty in

- getting immediate feedback

- reviewing the material they are studying as much as they could.

This result is in alignment with the findings of the studies done by Bayır (1995), Finkbeiner (2001), Ayres (2002), Album (2002), Dewhurst, Macleod, and Norris (2000), and Debski (2000).

The results of the study done by Bayır indicated that participants preferred computer-assisted multimedia instruction and the participants explained that they learnt better in this type of instruction. Finkbeiner discussed that ESL (English as a Second Language) undergraduate learners had positive attitudes towards CALL and suggested that a successful implementation of CALL required it to be put into everyday study life. In Ayres' study, it was found that university learners appreciated and valued learning through CALL, which meant that CALL had high face validity with learners. Album argued that students had positive feelings about CALL and suggested that CALL should be mixed with the regular classes, and

similarly Dewhurst et all discussed that students became more positive after they had experienced CALL. In Debski's study, the results indicated that the participants appreciated learning situations which are not available in traditional classes.

This result is not partially in alignment with the study done by Shaw and Marlow (1999). In their study, the participants of 99 sports science and nutrition undergraduates were uncomfortable with computers, were unhappy about the lack of personal contact and preferred to learn in a more traditional way. In the present study, participants were trained during one week so that they felt comfortable to some extent using the computer and CALL software. Also, some of the participants complained about the lack of personal contact. However, the majority of the students said that they would like to have CALL classes provided that they were incorporated into their regular classes.

5.3. Suggestions and implications

5.3.1. Suggestions

This study produced results which were shown to be statistically significant and non-significant. However, it must be taken into consideration that these results may be caused by a number of extraneous factors, which were discussed as threats to the validity of the study.

The participants in the study were not selected randomly. A convenience sample was used. Therefore the study should be repeated with a number of similar samples to decrease the likelihood that the results obtained were a one-time occurrence.

The study continued for eight weeks. This duration would be extended to one semester in a year and also be incorporated into one of the courses in the department. This would relieve the pressure of time and the other responsibilities of the participants.

Moreover, speaking and writing skills were ignored and were not taken into consideration in the study because of the lack of software, lack of time and workload of the participants in their department. Indeed, speaking and writing skills could have been included in the study since they are accounted in the TOEFL test.

5.3.2. Implications for teaching

According to the results of the study, the following implications for teaching are presented:

1. Before introducing CALL into the classroom, learners should be provided with the necessary skills required to use the computers properly and comfortably.

This will ensure that learners will be freed from computer anxiety and negative attitudes towards computers.

2. CALL should be integrated into the traditional classrooms where the instructor is also available for further assistance and questions so that students are not deprived of human contact.

3. Learner autonomy can be maximized through computers since 'fast' and 'slow' learners are given the opportunity to study and review the materials according to their own pace.

4. Although reading a text on a computer screen is distracting and tiring and all of the participants put forward that reading skill and reading activities were not appropriate for CALL, teachers should help students practise reading passages or articles on a computer and some activities should be provided in order that students become familiar with reading and accessing to reading materials online.

5. Listening skill can be maximized through computer activities since learners are given chance to repeat as many times as they want and according to their own pace, which is very difficult in a traditional language classroom. In traditional classrooms listening skill is generally ignored or given little importance or learners are let listen to a passage or a dialogue for just one or two minutes. Self-access centers should be set up so that students may enjoy improving their listening skill through computers.

6. CALL can assist the structure (grammar) lessons of the language classroom since it enables learners to get immediate feedback, which is the basic feature of CALL in almost all situations.

7. CALL can be of great help in learning/teaching situations where repetitive practice is required.

5.4. Implications for further research

Further studies involving the use of CALL are recommended since technology brings new applications and methods into language teaching and learning. In this study, instruction provided to both groups was not integrated into regular classes, but offered as an extra activity out of regular class time. Further studies can determine the effect of CALL which is incorporated into regular classes and the students' learning style. Additional recommendation for further study is to focus on speaking and writing skills which were ignored in this study. Furthermore, the relationship between learners' learning style and CALL can be investigated.

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APPENDICES

APPENDIX A

(Informed consent)

Dear student,

This is to request your participation in a research study to explore teaching methods to language learning.

Your participation in this study is voluntary, and you may withdraw at any time. You are requested to sign and return the informed consent form before the study begins. The information you provide will be kept confidential. Only the researcher will see the completed forms. Your name will not be used in any reports of this study. One benefit from participating in the study is that you will contribute to the improvement of future language learning courses. There are no risks, but participating will require some of your time. The tests will be coded with a number that will correspond to numbers on your examination form. Please sign and keep a copy of this form as an explanation of the study. If you have any questions, please contact the researcher at the following address:

Ferit KILIÇKAYA

Middle East Technical University

Department of Foreign Language Education

Office B-3 phone 6490

kilickay@metu.edu.tr

We will be glad to share the results of the study if you write to us at the above

address. Thank you again for your assistance in this project.

Sincerely,

I agree to participate in this study under the conditions outlined above.

Name _____ Signature _____ Date _____

APPENDIX B

(Interview format for the learners)

1. Did you feel comfortable working with CALL? Why? /Why not?

2. Was CALL motivating to you? Why?/Why not?

3. Which language skills would you like to like to practise using a CALL approach? Why?/Why not?

4. Would you like to have more classes presented using a CALL approach? Why?/Why not?

5. What were your feelings towards CALL before/after having CALL?

6. Do you have any additional suggestions or comments?

Group Statistics

	group	N	Mean	Std. Deviation	Std. Error Mean
list_dif	control	17	2,2353	2,10741	,51112
	exp	17	3,9412	2,33106	,56536
str_dif	control	17	2,4706	2,21127	,53631
	exp	17	3,0588	2,33106	,56536
read_dif	control	17	3,2941	1,79460	,43525
	exp	17	-1,7647	4,89297	1,18672
total_dif	control	17	8,0000	4,12311	1,00000
	exp	17	5,2353	6,72244	1,63043

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
list_dif	Equal variances assumed	,734	,398	-2,238	32	,032	1,70588	,76216	,25834	,15342
	Equal variances not assumed			-2,238	31,680	,032	1,70588	,76216	,25896	,15281
str_dif	Equal variances assumed	,026	,873	-,755	32	,456	-,58824	,77927	,17556	,99909
	Equal variances not assumed			-,755	31,911	,456	-,58824	,77927	,17574	,99926
read_dif	Equal variances assumed	16,645	,000	4,002	32	,000	5,05882	1,26402	,48410	,63355
	Equal variances not assumed			4,002	20,228	,001	5,05882	1,26402	,42403	,69362
total_dif	Equal variances assumed	5,732	,023	1,445	32	,158	2,76471	1,91267	,13127	,66069
	Equal variances not assumed			1,445	26,545	,160	2,76471	1,91267	,16291	,69233

APPENDIX D

(Screenshot from Cambridge advanced learner's dictionary)
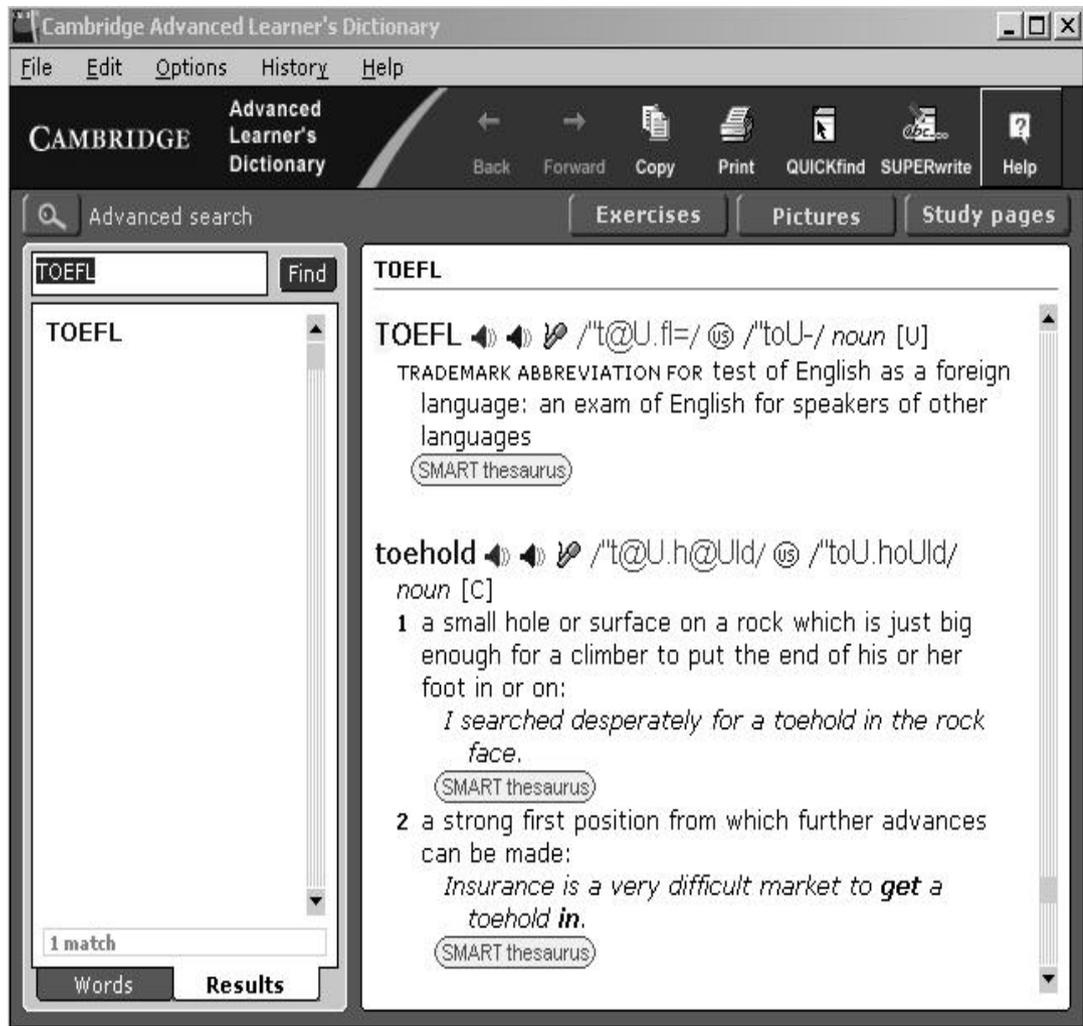
APPENDIX E

(Screenshot from English grammar in use)
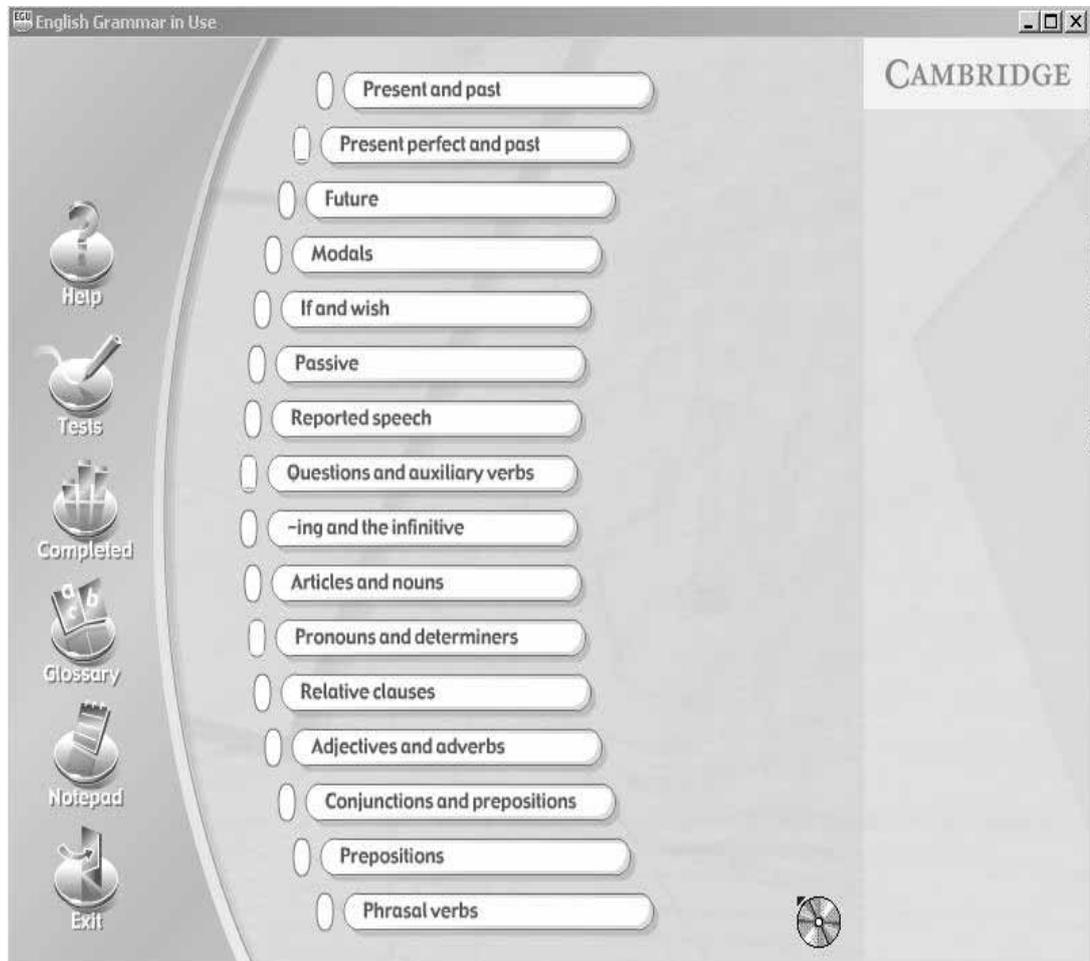
APPENDIX F

(Screenshot from PowerPrep: Preparation for the TOEFL test)
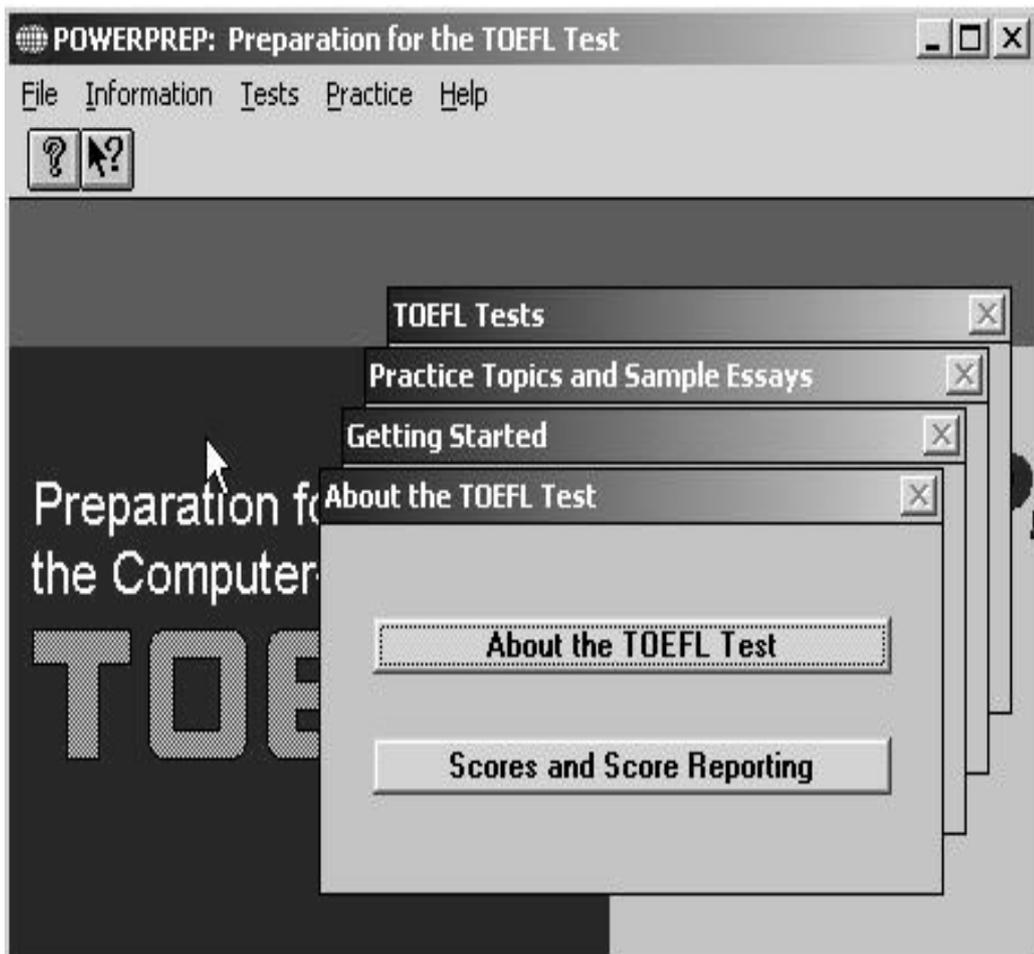
1 • 1 • 1 • 1 • 1 • 1 • 1

Practice Test
Section 1
Listening Comprehension
Time — approximately 35 minutes
(including the reading of the directions for each part)

In the Listening Comprehension section, you will have an opportunity to demonstrate your ability to understand conversations and talks in English. Answer all the questions on the basis of what is <u>stated</u> or <u>implied</u> by the speakers you hear. When you take the actual TOEFL test, you will not be allowed to take notes or write in your test book. Try to work on this practice test in the same way.

Part A

Directions: In Part A you will hear short conversations between two people. After each conversation, you will hear a question about the conversation. The conversations and questions will not be repeated. After you hear a question, read the four possible answers in your workbook and choose the best answer. Then, on your answer sheet, find the number of the question and fill in the space that corresponds to the letter of the answer you have chosen.

Listen to an example.

Sample Answer
● Ⓑ Ⓒ Ⓓ

On the recording, you hear:

(woman)	I don't like this painting very much.
(man)	Neither do I.
(narrator)	What does the man mean?

In your workbook, you read: (A) He doesn't like the painting either.
(B) He doesn't know how to paint.
(C) He doesn't have any paintings.
(D) He doesn't know what to do.

You learn from the conversation that neither the man nor the woman likes the painting. The best answer to the question, "What does the man mean?" is (A), "He doesn't like the painting either." Therefore, the correct choice is (A).

(**Wait**)

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1. (A) No one can do the translating.
   (B) The new secretary can type the document.
   (C) The woman should do the work herself.
   (D) The secretary might be able to help the woman.

2. (A) The weather yesterday.
   (B) A polluted river.
   (C) Hotel accommodations.
   (D) The quality of the air.

3. (A) He should find a new job.
   (B) He should choose his own career.
   (C) He's an engineer.
   (D) He has decided to study math.

4. (A) Read the newspaper while he waits.
   (B) Help the woman with her correspondence.
   (C) Mail the letter from the lobby.
   (D) Get some stationery for the woman.

5. (A) She's ready to exhibit her artwork.
   (B) She's planning to go to the exhibit.
   (C) She wants to see the man's prints.
   (D) She expects to publish an article next month.

6. (A) The man should come back later.
   (B) The man must complete some paperwork.
   (C) The man's application has been misplaced.
   (D) The man is not qualified for the job.

7. (A) Their appointment is not until tomorrow.
   (B) The professor is waiting for their call.
   (C) They should call the professor after the meeting.
   (D) They should wait until the next day.

8. (A) She picked Dan up after his driver's test.
   (B) Dan got the book for her.
   (C) Dan will help her study.
   (D) She thinks Dan passed the driver's test.

9. (A) She doesn't like to exercise.
   (B) She's trying to work out a new exercise schedule.
   (C) She hasn't had a chance to go to the gym lately.
   (D) She goes to the gym as often as possible.

10. (A) She's too busy to help the man today.
    (B) The proposal is already late.
    (C) She'll have time later on in the day.
    (D) She'll finish the proposal by noon.

11. (A) It is having financial trouble.
    (B) Its chemistry program is very popular.
    (C) The fees for the chemistry course have been reduced.
    (D) The number of students has doubled.

12. (A) She has already been to the concert.
    (B) Betty is taking her to the concert.
    (C) The man could probably go with Betty.
    (D) Betty might be leaving earlier than she is.

13. (A) He would prefer to live on campus.
    (B) He has never lived in a dormitory.
    (C) He plans to continue living off campus.
    (D) He's in his final year at the university.

14. (A) She has almost recovered from her cough.
    (B) She hasn't seen the doctor yet.
    (C) She saw the doctor four days ago.
    (D) She'll call the doctor to postpone her appointment.

15. (A) He wants to see a program on television.
    (B) He's supposed to return the documents by eight o'clock.
    (C) He thinks the film has been canceled.
    (D) He has already watched the documentary.

GO ON TO THE NEXT PAGE

16. (A) He's also interested in the Civil War.
    (B) He hasn't decided if he'll take the history class.
    (C) The woman should have written her paper already.
    (D) The woman's topic may not be appropriate.

17. (A) He's feeling better.
    (B) He thought last week's seminar was easy.
    (C) He needs to get more rest.
    (D) He was surprised that the woman missed the seminar.

18. (A) The snack bar isn't usually so empty.
    (B) Some people prefer to study in the snack bar.
    (C) The snack bar is near the library.
    (D) Snacks aren't allowed in the library.

19. (A) He's never been hiking before.
    (B) He won't be joining the woman.
    (C) He and Bill are learning to play tennis.
    (D) He'd rather play tennis than go hiking.

20. (A) He plans to remain in California all summer.
    (B) He shouldn't change his schedule.
    (C) He should travel somewhere he's never been before.
    (D) He would be able to go if he wanted to.

21. (A) They shouldn't make too many requests.
    (B) They should ask for another extension.
    (C) They shouldn't worry about the project.
    (D) They should wish the professor good luck.

22. (A) He's happy that his parents are coming.
    (B) He's thinking about a number of things.
    (C) He's not feeling very well.
    (D) He's looking for a new apartment.

23. (A) His doctor told him not to drink tea.
    (B) He'll bring some tea to the doctor.
    (C) He would really like some tea.
    (D) Tea tastes too much like medicine.

24. (A) The students should return to classes.
    (B) Last night's meeting was badly managed.
    (C) There should be more issues to vote on.
    (D) More students should come to the meetings.

25. (A) Only one person can come.
    (B) There have been few responses.
    (C) Almost everyone can come.
    (D) They're waiting for Tina's response.

26. (A) An apartment building.
    (B) A stadium.
    (C) A theater.
    (D) A racetrack.

27. (A) He would like some assistance.
    (B) He can handle the case himself.
    (C) He needs to borrow a suitcase.
    (D) He doesn't care what the woman does.

28. (A) She has finished only one step.
    (B) She doesn't have any more time for redecorating.
    (C) The work has been completed.
    (D) The redecorating is being done gradually.

29. (A) They were sold out.
    (B) They hadn't been printed.
    (C) They had already been picked up.
    (D) They weren't supposed to be sold yet.

30. (A) He didn't call Lucy.
    (B) He dialed the wrong number.
    (C) Lucy doesn't have a phone.
    (D) Lucy didn't answer the phone.

GO ON TO THE NEXT PAGE

Part B

Directions: In this part of the Practice Test, you will hear longer conversations. After each conversation, you will hear several questions. The conversations and questions will not be repeated.

After you hear a question, read the four possible answers in your workbook and choose the best answer. Then, on your answer sheet, find the number of the question and fill in the space that corresponds to the letter of the answer you have chosen.

Remember, you should <u>not</u> take notes or write in your workbook.

31. (A) He can't find his office key.
    (B) He has misplaced some exams.
    (C) He's unable to talk.
    (D) He doesn't like his classroom.

32. (A) Mark the latest homework assignment.
    (B) Put a cancellation notice on the classroom door.
    (C) Make an appointment with the doctor.
    (D) Return some exams to his students.

33. (A) Teach Don's class while he's absent.
    (B) Give Professor Webster the key to Don's office.
    (C) Leave a message on the board in Don's classroom.
    (D) Bring Don the homework that was due today.

34. (A) Put the homework on Don's desk.
    (B) Leave the master key for Don.
    (C) Give Don's students the next assignment.
    (D) Call Don at the end of the afternoon.

35. (A) To see how certain chemicals produce different flavors.
    (B) To determine if a person can distinguish salty and sweet solutions.
    (C) To map the location of taste buds.
    (D) To count the number of taste buds.

36. (A) Just five minutes.
    (B) Slightly less than an hour.
    (C) Between one and two hours.
    (D) A little more than two hours.

37. (A) That taste buds aren't located only on the tongue.
    (B) That taste buds aren't all the same size.
    (C) That solutions must be measured and mixed carefully.
    (D) That he shouldn't swallow the solutions.

38. (A) With an apology.
    (B) With an example.
    (C) With a compliment.
    (D) With an invitation.

GO ON TO THE NEXT PAGE ➤

Part C

Directions: In this part of the Practice Test, you will hear several talks. After each talk, you will hear some questions. The talks and questions will not be repeated.

After you hear a question, read the four possible answers in your workbook and choose the best answer. Then, on your answer sheet, find the number of the question and fill in the space that corresponds to the letter of the answer you have chosen.

Here is an example.

On the recording, you hear:

(narrator) *Listen to an instructor talk to his class about a television program.*

(man) *I'd like to tell you about an interesting TV program that'll be shown this coming Thursday. It'll be on from 9 to 10 pm on Channel 4. It's part of a series called "Mysteries of Human Biology." The subject of the program is the human brain — how it functions and how it can malfunction. Topics that will be covered are dreams, memory, and depression. These topics are illustrated with outstanding computer animation that makes the explanations easy to follow. Make an effort to see this show. Since we've been studying the nervous system in class, I know you'll find it very helpful.*

Now listen to a sample question.

Sample Answer
Ⓐ Ⓑ ● Ⓓ

(narrator) *What is the main purpose of the program?*

In your workbook, you read:

(A) To demonstrate the latest use of computer graphics.
(B) To discuss the possibility of an economic depression.
(C) To explain the workings of the brain.
(D) To dramatize a famous mystery story.

The best answer to the question, "What is the main purpose of the program?" is (C), "To explain the workings of the brain." Therefore, the correct choice is (C).

Now listen to another sample question.

Sample Answer
Ⓐ Ⓑ Ⓒ ●

(narrator) *Why does the speaker recommend watching the program?*

In your workbook, you read:

(A) It is required of all science majors.
(B) It will never be shown again.
(C) It can help viewers improve their memory skills.
(D) It will help with course work.

The best answer to the question, "Why does the speaker recommend watching the program?" is (D), "It will help with course work." Therefore, the correct choice is (D).

Remember, you should <u>not</u> take notes or write in your workbook.

(**Wait**)

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39. (A) Fire prevention.
    (B) Pest control.
    (C) House construction.
    (D) Toxic chemicals.

40. (A) It's cheaper.
    (B) It's safer.
    (C) It's quicker.
    (D) It's readily available.

41. (A) To keep the heat inside.
    (B) To prevent insects from escaping.
    (C) To reduce the risk of fire.
    (D) To keep the wood dry.

42. (A) To show that the treatment will not cause fire.
    (B) To emphasize the dangers of the old method.
    (C) To explain a step in the new technique.
    (D) To illustrate a compromise between old and new systems.

43. (A) A recent textbook assignment.
    (B) Requirements for the final examination.
    (C) Choosing research topics.
    (D) Preparing an outline for a paper.

44. (A) Immediately.
    (B) The following week.
    (C) In two weeks.
    (D) At the end of the semester.

45. (A) To present final papers.
    (B) To give a model of outline style.
    (C) To discuss the preliminary outline.
    (D) To discuss final grades.

46. (A) With a thesis statement.
    (B) With a list of references.
    (C) With a summary of the conference.
    (D) With the student's name.

47. (A) To compare several artistic styles.
    (B) To analyze American regionalism.
    (C) To discuss the development of an artist's work.
    (D) To evaluate European influences on North American artists.

48. (A) His study of photography.
    (B) His work as a farmer.
    (C) His travel to Europe.
    (D) His background as a writer.

49. (A) A skyscraper.
    (B) A farmhouse.
    (C) A cathedral.
    (D) An airplane.

50. (A) By founding an art school there.
    (B) By donating money to local artists.
    (C) By studying the work of artists there.
    (D) By applying European styles to Midwestern subjects.

**This is the end of Section 1 of the Practice Test.
Stop work on Section 1.**

Turn off your cassette player now.

STOP STOP STOP STOP STOP STOP STOP

**Read the directions for Section 2 and begin work.
Do NOT read or work on any other section
of the test during the next 25 minutes.**

Section 2
Structure and Written Expression
Time — 25 minutes
(including the reading of the directions)
Now set your clock for 25 minutes.

This section is designed to measure your ability to recognize language that is appropriate for standard written English. There are two types of questions in this section, with special directions for each type.

Structure

Directions: Questions 1-15 are incomplete sentences. Beneath each sentence you will see four words or phrases, marked (A), (B), (C), and (D). Choose the <u>one</u> word or phrase that best completes the sentence. Then, on your answer sheet, find the number of the question and fill in the space that corresponds to the letter of the answer you have chosen. Fill in the space so that the letter inside the oval cannot be seen.

Example I

Sample Answer
Ⓐ ● Ⓒ Ⓓ

Geysers have often been compared to volcanoes -------
they both emit hot liquids from below the Earth's surface.

(A) due to
(B) because
(C) in spite of
(D) regardless of

The sentence should read, "Geysers have often been compared to volcanoes because they both emit hot liquids from below the Earth's surface." Therefore, you should choose (B).

Example II

Sample Answer
Ⓐ Ⓑ Ⓒ ●

During the early period of ocean navigation, -------
any need for sophisticated instruments and techniques.

(A) so that hardly
(B) when there hardly was
(C) hardly was
(D) there was hardly

The sentence should read, "During the early period of ocean navigation, there was hardly any need for sophisticated instruments and techniques." Therefore, you should choose (D).

Now begin work on the questions.

GO ON TO THE NEXT PAGE

1. Helium is ------- all gases to liquefy and is impossible to solidify at normal air pressure.

   (A) more than difficult
   (B) the most difficult of
   (C) more difficult of
   (D) most difficult

2. Every year Canadian ------- about 75 percent of their exports to the United States.

   (A) businesses that sell
   (B) selling businesses
   (C) businesses sell
   (D) that sell to businesses

3. An innovator, ballerina Augusta Maywood was ------- a traveling company.

   (A) to form the first
   (B) the first to form
   (C) who formed the first
   (D) forming the first

4. When water freezes in the cracks of rocks, ------- expands, causing the rocks to break apart.

   (A) it
   (B) but
   (C) then
   (D) and

5. With x-ray microscopes scientists can see through live insects ------- even through solid pieces of metal.

   (A) however
   (B) nevertheless
   (C) or
   (D) yet

6. Dennis Chavez of New Mexico ------- to the House of Representatives in 1930 and to the Senate in 1938.

   (A) when elected
   (B) elected
   (C) who was elected
   (D) was elected

7. ------- are not leached out of soil, reclamation procedures are needed to restore the land's productivity.

   (A) For concentrations of salt
   (B) Salt concentrations that
   (C) If salt concentrations
   (D) With concentrations of salt

8. ------- social crusade aroused Elizabeth Williams' enthusiasm more than the expansion of educational facilities for immigrants to the United States.

   (A) No
   (B) Nothing
   (C) Not
   (D) None

GO ON TO THE NEXT PAGE

9. ------- as 2500 B.C., the Egyptians used mirrors made of highly polished metal.

   (A) In early
   (B) As early
   (C) Early
   (D) Was as early

10. The quantum theory states ------- , such as light, is given off and absorbed in tiny definite units called quanta or photons.

    (A) energy that
    (B) that it is energy
    (C) it is energy
    (D) that energy

11. Quails typically have short rounded wings that enable ------- spring into full flight instantly when disturbed in their hiding places.

    (A) they
    (B) to their
    (C) its
    (D) them to

12. Geysers are found near rivers and lakes, where water drains through the soil -------.

    (A) surface below the deep
    (B) deep below the surface
    (C) the deep below surface
    (D) the deep surface below

13. Algebra generalizes certain basic laws ------- the addition, subtraction, multiplication, and division of all numbers.

    (A) govern
    (B) that govern
    (C) have governed
    (D) which they govern

14. Even at low levels, -------

    (A) the nervous system has produced detrimental effects by lead
    (B) lead's detrimental effects are producing the nervous system
    (C) lead produces detrimental effects on the nervous system
    (D) the detrimental effects produced by lead on the nervous system

15. ------- a lonely and rugged life, far from home and family.

    (A) However the early gold prospector often lived
    (B) The early gold prospector often lived
    (C) Not only did the early gold prospector often live
    (D) The early gold prospector often living

GO ON TO THE NEXT PAGE

Written Expression

Directions: In questions 16-40 each sentence has four underlined words or phrases. The four underlined parts of the sentence are marked (A), (B), (C), and (D). Identify the <u>one</u> underlined word or phrase that must be changed in order for the sentence to be correct. Then, on your answer sheet, find the number of the question and fill in the space that corresponds to the letter of the answer you have chosen.

Example I   **Sample Answer**

Guppies are sometimes <u>call rainbow fish</u> <u>because of</u>   ● Ⓑ Ⓒ Ⓓ
                A   B   C

the males' <u>bright</u> colors.
          D

The sentence should read, "Guppies are sometimes called rainbow fish because of the males' bright colors." Therefore, you should choose (A).

Example II   **Sample Answer**

Serving <u>several term</u> in Congress, Shirley Chisholm   Ⓐ ● Ⓒ Ⓓ
    A   B

became an <u>important</u> United States <u>politician</u>.
          C   D

The sentence should read, "Serving several terms in Congress, Shirley Chisholm became an important United States politician." Therefore, you should choose (B).

Now begin work on the questions.

GO ON TO THE NEXT PAGE ➔

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16. The culinary expert Fannie Farmer taught dietetics, kitchen
   <u>A</u>   <u>B</u>
   management, and to cook at her famous Boston school.
   <u>C</u>   <u>D</u>

17. The elephant relies more on its sense of smell than for any other sense.
      <u>A</u>   <u>B</u>   <u>C</u>   <u>D</u>

18. A few of the naturally elements exist in such small amounts that they are
   <u>A</u>   <u>B</u>
   known mainly from laboratory-made samples.
   <u>C</u>   <u>D</u>

19. Some insects hear ultrasonic sounds more than two octaves than higher
   <u>A</u>   <u>B</u>   <u>C</u>   <u>D</u>
   humans can.

20. Because of its larger size, the United States House of Representatives
   <u>A</u>   <u>B</u>
   is more impersonal, hierarchical, and specialization than the Senate.
   <u>C</u>   <u>D</u>

21. To stay warm in cold weather, cold-blooded animals must expose
   <u>A</u>
   itself to a source of warmth such as direct sunlight.
   <u>B</u>   <u>C</u>   <u>D</u>

22. A severe illness where she was just nineteen months old deprived the
   <u>A</u>   <u>B</u>   <u>C</u>
   well-known writer and lecturer Helen Keller of both her sight and her hearing.
   <u>D</u>

23. Like all ecological systems, a forest is made up of a living environment and
   <u>A</u>
   a nonliving environment, the latter composed of air, rocks, soiled, and water.
   <u>B</u>   <u>C</u>   <u>D</u>

24. The purposeful of the elementary school is to introduce children to the skills,
   <u>A</u>   <u>B</u>
   information, and attitudes necessary for a smooth adjustment to society.
   <u>C</u>   <u>D</u>

25. Notorious as a host for wheat rust, the barberry bush has been banned
   <u>A</u>   <u>B</u>   <u>C</u>
   from many area.
   <u>D</u>

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26. Christopher Plummer is a Canadian actor who has starred in stage,
                                              A   B   C
    television, and film productions on both sides the Atlantic Ocean.
                                                   D

27. A microphone enables musical tones to be amplified, thus making it possible
                        A   B   C
    the gentle renditions of soft songs in large halls.
            D

28. The poetry of e. e. cummings illustrates the way in which some
                                                     A
    poets bend grammatical rules as they strive to expression their insights.
        B   C   D

29. In the wild, tea plants become trees of approximately thirty feet in high.
                  A   B   C   D

30. Accounting is described as art of classifying, recording, and reporting
                                A   B
    significant financial events.
        C   D

31. The development of the watch depended upon the invent of the mainspring.
            A   B   C D

32. The ordeal of the Cherokee Indians, who were forcible moved from their
            A   B
    homeland in the 1830's, is remembered as the "Trail of Tears."
                C   D

33. Physical fitness activities can lead to an alarming variety of
                    A
    injuries if participants push themselves greatly hard.
        B   C   D

34. The structure but behavior of many protozoans are amazingly complex for
                  A   B   C
    single-celled animals.
            D

35. Alaska's rough climate and terrain divide the state into
                                        A
    isolated regions, making highway maintenance difficulty.
        B   C   D

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36. For hundreds of years, sailors relied on echoes to warn them of
    _____   _____   ____
      A   B
    another ships, icebergs, or cliffs in foggy weather.
    _____   _____
       C   D

37. Although he is employed in the scientific and technical fields, the
             __   _____
              A   B
    metric system is not generally utilized in the United States.
    _____   _____
       C   D

38. Prototypical oboes did a loud, harsh tone, but the modern oboe is
                     ___   _____   ____
                      A   B   C
    appreciated for its smooth and beautiful tone.
                        _____
                                 D

39. Beneath the deep oceans that cover two-thirds of the Earth, intriguing
    _____   _____
       A   B
    secret of the planet are concealed.
    _____   _____
       C   D

40. The pioneer John Chapman received the nickname "Johnny Appleseed"
                              _____
                                  A
    because he planted apple seedlings during him travels in what are now
            __   _____   ____
             B   C   D
    Ohio, Indiana, and Illinois.

This is the end of Section 2.

**If you finish before 25 minutes has ended,
check your work on Section 2 only.**

**At the end of 25 minutes, go on to Section 3.
Use *exactly 55 minutes* to work on Section 3.**

STOP STOP STOP STOP STOP STOP STOP

Section 3

Reading Comprehension

Time — 55 minutes
(including the reading of the directions)
Now set your clock for 55 minutes.

Directions: In this section you will read several passages. Each one is followed by a number of questions about it. For questions 1-50, you are to choose the <u>one</u> best answer, (A), (B), (C), or (D), to each question. Then, on your answer sheet, find the number of the question and fill in the space that corresponds to the letter of the answer you have chosen.

Answer all questions about the information in a passage on the basis of what is <u>stated</u> or <u>implied</u> in that passage.

Read the following passage:

> The railroad was not the first institution to impose regularity on society, or to draw attention to the importance of precise timekeeping. For as long as merchants have set out their wares at daybreak and communal festivities have
> *Line* been celebrated, people have been in rough agreement with their neighbors as to
> *(5)* the time of day. The value of this tradition is today more apparent than ever. Were it not for public acceptance of a single yardstick of time, social life would be unbearably chaotic: the massive daily transfers of goods, services, and information would proceed in fits and starts; the very fabric of modern society would begin to unravel.

Example I   **Sample Answer**

What is the main idea of the passage?   (A) (B) ● (D)

    (A) In modern society we must make more time for
          our neighbors.
    (B) The traditions of society are timeless.
    (C) An accepted way of measuring time is essential
          for the smooth functioning of society.
    (D) Society judges people by the times at which
          they conduct certain activities.

The main idea of the passage is that societies need to agree about how time is to be measured in order to function smoothly. Therefore, you should choose (C).

Example II   **Sample Answer**

In line 5, the phrase "this tradition" refers to   (A) (B) (C) ●

    (A) the practice of starting the business day at
          dawn
    (B) friendly relations between neighbors
    (C) the railroad's reliance on time schedules
    (D) people's agreement on the measurement of
          time

The phrase "this tradition" refers to the preceding clause, "people have been in rough agreement with their neighbors as to the time of day." Therefore, you should choose (D).

Now begin work on the questions.

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Questions 1-10

The agricultural revolution in the nineteenth century involved two things: the invention of labor-saving machinery and the development of scientific agriculture. Labor-saving machinery naturally appeared first where labor was scarce. "In Europe," said Thomas Jefferson, "the object is to make the most of their land, labor being abundant; here it is to make the most of our labor, land being abundant." It was in the United States, therefore, that the great advances in nineteenth-century agricultural machinery first came.

At the opening of the century, with the exception of a crude plow, farmers could have carried practically all of the existing agricultural implements on their backs; by 1860, most of the machinery in use today had been designed in an early form. The most important of the early inventions was the iron plow. As early as 1790 Charles Newbold of New Jersey had been working on the idea of a cast-iron plow and spent his entire fortune in introducing his invention. The farmers, however, were not interested in it, claiming that the iron poisoned the soil and made the weeds grow. Nevertheless, many people devoted their attention to the plow, until in 1869 James Oliver of South Bend, Indiana, turned out the first chilled-steel plow.

1. What is the main topic of the passage?

    (A) The need for agricultural advances to help feed a growing population

    (B) The development of safer machines demanded by the labor movement

    (C) Machinery that contributed to the agricultural revolution

    (D) New Jersey as a leader in the agricultural revolution

2. The word "naturally" in line 3 is closest in meaning to

    (A) unsurprisingly

    (B) gradually

    (C) apparently

    (D) safely

3. The expression "make the most" of in line 4 is closest in meaning to

    (A) get the best yield from

    (B) raise the price of

    (C) exaggerate the worth of

    (D) earn a living on

4. Which of the following can be inferred from what Thomas Jefferson said (lines 3-5)?

    (A) Europe was changing more quickly than the United States.

    (B) Europe had greater need of farm machinery than the United States did.

    (C) The United States was finally running out of good farmland.

    (D) There was a shortage of workers on United States farms.

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5. The word "here" in line 4 refers to

   (A) Europe
   (B) United States
   (C) New Jersey
   (D) Indiana

6. What point is the author making by stating that farmers could carry nearly all their tools on their backs?

   (A) Farmers had few tools before the agricultural revolution.
   (B) People in the United States were traditionally self-reliant.
   (C) Life on the farm was extremely difficult.
   (D) New tools were designed to be portable.

7. When was the iron plow invented?

   (A) In 1790
   (B) In the early 1800's
   (C) In 1869
   (D) In the early 1900's

8. According to the passage, which of the following statements about Charles Newbold is true?

   (A) He was James Oliver's assistant.
   (B) He was born in Europe.
   (C) He was opposed to scientific agriculture.
   (D) He spent his own money to promote his invention.

9. The word "it" in line 12 refers to

   (A) scientific agriculture
   (B) James Oliver's invention
   (C) the cast-iron plow
   (D) Charles Newbold's fortune

10. Why did farmers reject Newbold's plow?

    (A) Their horses were frightened by it.
    (B) They preferred lighter tools.
    (C) It was too expensive.
    (D) They thought it would ruin the land.

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Questions 11-20

According to some scientists, migratory birds should be able to withstand the winter. A bird's feathery coat is good insulation against the cold. Because a bird is warm-blooded, its body temperature always remains constant, even if the temperature of its surroundings changes.

The factors that trigger migratory behavior in birds are difficult to explain. This behavior seems to be instinctive, not learned. For example, many northern species leave their summer homes while the weather is still warm and the food supply plentiful. Young arctic terns born at the arctic breeding grounds will take off with the flock for distant lands they have never seen.

Bird migrations are probably regulated by the glandular system. Scientists suspect that the changing length of the day is the factor that triggers migratory behavior. In an experiment, migratory birds were kept in artificially lighted rooms. It was found that if periods of darkness were lengthened proportionately, the glands of the birds became active. These glands secrete hormones, which are chemicals that control numerous body functions. Shorter periods of daylight seem to change the hormone balance of birds, so that they retain more fat. This stored fat is the fuel that provides the energy for a long flight. The same experiment revealed that the birds became more excited as the artificial night was lengthened. It is probably no coincidence that most flocks begin their migratory flights during the night.

11. What does the passage mainly discuss?

(A) Common migratory paths for birds
(B) Why birds migrate
(C) Species of birds that do not migrate
(D) Migration in cold climates

12. The word "withstand" in line 1 is closest in meaning to

(A) prefer
(B) tolerate
(C) regulate
(D) understand

13. According to the passage, which of the following protects birds against cold weather?

(A) Glands
(B) Hormones
(C) Feathers
(D) Artificial light

14. The word "constant" in line 3 is closest in meaning to

(A) invariable
(B) persistent
(C) predictable
(D) responsive

15. The word "its" in line 3 refers to

(A) temperature
(B) cold
(C) coat
(D) bird

16. In lines 7-9, the author mentions young arctic terns as an example of birds that

(A) do not migrate
(B) breed during migration
(C) migrate instinctively
(D) adapt to the cold

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17. The word "they" in line 16 refers to

    (A) glands
    (B) birds
    (C) body functions
    (D) hormones

18. According to the passage, birds exposed to longer periods of darkness experience all of the following changes EXCEPT

    (A) activated glands
    (B) excited behavior
    (C) retention of more fat
    (D) increased appetite

19. In the experiment mentioned in the passage, the scientists adjusted the birds'

    (A) food supply
    (B) body temperatures
    (C) exposure to light
    (D) brain chemistry

20. Where in the passage does the author mention the substance that enables birds to fly long distances?

    (A) Lines 2-4
    (B) Lines 5-7
    (C) Lines 10-11
    (D) Lines 16-17

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Questions 21-30

There were two widely divergent influences on the early development of statistical methods. Statistics had a mother who was dedicated to keeping orderly records of governmental units (state and statistics come from the same Latin root, *status*) and a gentlemanly gambling father who relied on mathematics to increase his skill at playing the odds in games of chance. The influence of the mother on the offspring, statistics, is represented by counting, measuring, describing, tabulating, ordering, and the taking of censuses — all of which led to modern descriptive statistics. From the influence of the father came modern inferential statistics, which is based squarely on theories of probability.

Descriptive statistics involves tabulating, depicting, and describing collections of data. These data may be quantitative, such as measures of height, intelligence, or grade level — variables that are characterized by an underlying continuum — or the data may represent qualitative variables, such as sex, college major, or personality type. Large masses of data must generally undergo a process of summarization or reduction before they are comprehensible. Descriptive statistics is a tool for describing or summarizing or reducing to comprehensible form the properties of an otherwise unwieldy mass of data.

Inferential statistics is a formalized body of methods for solving another class of problems that present great difficulties for the unaided human mind. This general class of problems characteristically involves attempts to make predictions using a sample of observations. For example, a school superintendent wishes to determine the proportion of children in a large school system who come to school without breakfast, have been vaccinated for flu, or whatever. Having a little knowledge of statistics, the superintendent would know that it is unnecessary and inefficient to question each child; the proportion for the entire district could be estimated fairly accurately from a sample of as few as 100 children. Thus, the purpose of inferential statistics is to predict or estimate characteristics of a population from a knowledge of the characteristics of only a sample of the population.

21. With what is the passage mainly concerned?

   (A) The drawbacks of descriptive and inferential statistics
   (B) Applications of inferential statistics
   (C) The development and use of statistics
   (D) How to use descriptive statistics

22. The word "divergent" in line 1 is closest in meaning to

   (A) different
   (B) distributed
   (C) recorded
   (D) prominent

23. According to the first paragraph, counting and census-taking are associated with

   (A) inferential statistics
   (B) descriptive statistics
   (C) unknown variables
   (D) qualitative changes

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24. Why does the author mention the "mother" and "father" in the first paragraph?

    (A) To point out that parents can teach their children statistics
    (B) To introduce inferential statistics
    (C) To explain that there are different kinds of variables
    (D) To present the background of statistics in a humorous and understandable way

25. The word "squarely" in line 8 could best be replaced by

    (A) solidly
    (B) geometrically
    (C) rectangularly
    (D) haphazardly

26. Which of the following is NOT given as an example of a qualitative variable?

    (A) Gender
    (B) Height
    (C) College major
    (D) Type of personality

27. The word "they" in line 13 refers to

    (A) variables
    (B) masses
    (C) descriptive statistics
    (D) properties

28. Which of the following statements about descriptive statistics is best supported by the passage?

    (A) It reduces large amounts of data to a more comprehensible form.
    (B) It is based on probability.
    (C) It can be used by people with little knowledge of mathematics.
    (D) It measures only qualitative differences.

29. The word "unwieldy" in line 15 is closest in meaning to

    (A) unmanageable
    (B) unpredictable
    (C) understandable
    (D) unreliable

30. According to the passage, what is the purpose of examining a sample of a population?

    (A) To compare different groups
    (B) To predict characteristics of the entire population
    (C) To detect differences not observable in the whole population
    (D) To compile more accurate data

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Questions 31-40

Glacier National Park in Montana shares boundaries with Canada, an American Indian reservation, and a national forest. Along the North Fork of the Flathead River, the park also borders about 17,000 acres of private lands that are currently used for ranching, timber, and agriculture. This land is an important part of the habitat and migratory routes for several endangered species that frequent the park. These private lands are essentially the only ones available for development in the region.

With encouragement from the park, local landowners initiated a land-use planning effort to guide the future of the North Fork. The park is a partner in an interlocal agreement that calls for resource-managing agencies to work together and with the more than 400 private owners in the area. A draft plan has been prepared, with the objective of maintaining traditional economic uses but limiting new development that would damage park resources. Voluntary action by landowners, in cooperation with the park and the county, is helping to restrict small-lot subdivisions, maintain wildlife corridors, and minimize any harmful impact on the environment.

The willingness of local landowners to participate in this protection effort may have been stimulated by concerns that Congress would impose a legislative solution. Nevertheless, many local residents want to retain the existing character of the area. Meetings between park officials and landowners have led to a dramatically improved understanding of all concerns.

31. The passage mainly discusses

(A) the endangered species in Glacier National Park
(B) the protection of lands surrounding Glacier National Park
(C) conservation laws imposed by the state of Montana
(D) conservation laws imposed by Congress

32. Why are the private lands surrounding Glacier National Park so important?

(A) They function as a hunting preserve.
(B) They are restricted to government use.
(C) They are heavily populated.
(D) They contain natural habitats of threatened species.

33. The word "ones" in line 6 refers to

(A) private lands
(B) endangered species
(C) migratory routes
(D) ranching, timber, agriculture

34. The word "initiated" in line 7 is closest in meaning to

(A) started
(B) requested
(C) purchased
(D) considered

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35. The relationship between park officials and neighboring landowners may best be described as

(A) indifferent
(B) intimate
(C) cooperative
(D) disappointing

36. It can be inferred from the passage that a major interest of the officials of Glacier National Park is to

(A) limit land development around the park
(B) establish a new park in Montana
(C) influence national legislation
(D) settle border disputes with Canada

37. In lines 15-16, the author implies that landowners might be responding to environmental concerns for which of the following reasons?

(A) They wish to stimulate economic growth.
(B) They wish to improve their public image.
(C) They have a tradition of cooperating with the government.
(D) They fear federal legislation.

38. The word "stimulated" in line 16 is closest in meaning to

(A) motivated
(B) anticipated
(C) substituted
(D) undermined

39. The word "retain" in line 17 is closest in meaning to

(A) preserve
(B) possess
(C) enjoy
(D) improve

40. Where in the passage does the author mention the purpose of the plan developed by local landowners and park officials?

(A) Lines 1-2
(B) Lines 4-6
(C) Lines 10-14
(D) Lines 15-17

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Questions 41-50

If the salinity of ocean waters is analyzed, it is found to vary only slightly from place to place. Nevertheless, some of these small changes are important. There are three basic processes that cause a change in oceanic salinity. One of these is the subtraction of water from the ocean by means of evaporation — conversion of liquid water to water vapor. In this manner, the salinity is increased, since the salts stay behind. If this is carried to the extreme, of course, white crystals of salt would be left behind.

The opposite of evaporation is precipitation, such as rain, by which water is added to the ocean. Here the ocean is being diluted so that the salinity is decreased. This may occur in areas of high rainfall or in coastal regions where rivers flow into the ocean. Thus salinity may be increased by the subtraction of water by evaporation, or decreased by the addition of fresh water by precipitation or runoff.

Normally, in tropical regions where the sun is very strong, the ocean salinity is somewhat higher than it is in other parts of the world where there is not as much evaporation. Similarly, in coastal regions where rivers dilute the sea, salinity is somewhat lower than in other oceanic areas.

A third process by which salinity may be altered is associated with the formation and melting of sea ice. When seawater is frozen, the dissolved materials are left behind. In this manner, seawater directly beneath freshly formed sea ice has a higher salinity than it did before the ice appeared. Of course, when this ice melts, it will tend to decrease the salinity of the surrounding water.

In the Weddell Sea, off Antarctica, the densest water in the oceans is formed as a result of this freezing process, which increases the salinity of cold water. This heavy water sinks and is found in the deeper portions of the oceans of the world.

41. What does the passage mainly discuss?

  (A) The elements of salt
  (B) The bodies of water of the world
  (C) The many forms of ocean life
  (D) The salinity of ocean water

42. The word "this" in line 5 refers to

  (A) ocean
  (B) evaporation
  (C) salinity
  (D) crystals

43. According to the passage, the ocean generally has more salt in

  (A) coastal areas
  (B) tropical areas
  (C) rainy areas
  (D) turbulent areas

44. All of the following are processes that decrease salinity EXCEPT

  (A) evaporation
  (B) precipitation
  (C) runoff
  (D) melting

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45. Which of the following statements about the salinity of a body of water can best be inferred from the passage?

    (A) The temperature of the water is the most important factor.
    (B) The speed with which water moves is directly related to the amount of salt.
    (C) Ocean salinity has little effect on sea life.
    (D) Various factors combine to cause variations in the salt content of water.

46. The word "altered" in line 16 is closest in meaning to

    (A) determined
    (B) changed
    (C) accumulated
    (D) needed

47. The word "it" in line 18 refers to

    (A) sea ice
    (B) salinity
    (C) seawater
    (D) manner

48. Why does the author mention the Weddell Sea?

    (A) To show that this body of water has salinity variations
    (B) To compare Antarctic waters with Arctic waters
    (C) To give an example of increased salinity due to freezing
    (D) To point out the location of deep waters

49. Which of the following is NOT a result of the formation of ocean ice?

    (A) The salt remains in the water.
    (B) The surrounding water sinks.
    (C) Water salinity decreases.
    (D) The water becomes denser.

50. What can be inferred about the water near the bottom of oceans?

    (A) It is relatively warm.
    (B) Its salinity is relatively high.
    (C) It does not move.
    (D) It evaporates quickly.

Listening Comprehension Script

Part A

1.

(woman)   Do you know anyone who can translate this document?

(man)   What about the new secretary? I heard he's bilingual.

(Narrator)   What does the man mean?

2.

(woman 1)   Did you hear the weather report for today?

(woman 2)   The pollution's going to be so bad they recommend staying indoors.

(narrator)   What are the speakers discussing?

3.

(man)   Don't you think Bob should go into engineering — I mean, he's so

             good in math.

(woman)   He'll have to decide that for himself.

(narrator)   What does the woman say about Bob?

4.

(woman)   I'll be ready in a few minutes. I have to finish up this letter.

(man)   OK, I'll go down to the lobby for a

(narrator)   What will the man probably do?

5.

(man)   Did you see this article on the exhibit of eighteenth-century prints

that opened today?

(woman)   Yes, and I've already bought a ticket to see it next month. (narrator)

What does the woman mean?

6.

(man)   I'd like to apply for the part-time job.

(woman)   Fine. Just fill out this form. Someone will be with you in a moment.

(narrator)   What does the woman mean?

7.

(woman)   It's ten o'clock. Is that too late for us to call Professor Brown about

the student council meeting?

(man)   Let's hold off till tomorrow.

(narrator)   What does the man mean?

8.

(man)   Did you get a study manual for your driver's test?

(woman)   I had Dan pick one up for me.

(narrator)   What does the woman mean?

9.

(man)   Every time I come to the gym, you're here exercising.

(woman)   I try to work out whenever I have a chance.

(narrator)   What does the woman mean?

10.

(man)   Would you have some free time to look at this proposal for me?

(woman)   I'm kind of busy now. How does late this afternoon sound?

(narrator)   What does the woman mean?

11.

(man 1)   I was going to take organic chemistry next semester — but now it's

              been cut.

(man 2)   I heard the university's going to double the tuition, too.

(narrator)   What can be inferred about the university?

12.

(man)   Could I get a ride with you to the concert tonight?

(woman)   I can't go, but you might ask Betty. I think she's leaving around

              7:30.

(narrator)   What does the woman mean?

13.

(woman)   You've been living off campus this year, haven't you?

(man)   Yes, and I'm going to next year too — it's so much nicer than

              living in the dormitory.

(narrator)   What does the man mean?

14.

(man)   You ought to see a doctor about that cough.

(woman)   I guess I should. I've been putting it off for days.

(narrator)   What does the woman mean?

15.

(woman)   What do you want to do tonight?

(man)   There's supposed to be a good documentary on channel eight.

(narrator)   What does the man mean?

16.

(woman)   I've finally decided about my history paper: I'm going to focus

           on the Civil War.

(man)   That's so broad — do you think it'll be approved?

(narrator)   What does the man imply?

17.

(woman)   Sorry you had to miss the seminar; how're you doing now?

(man)   I took it easy last week — it's amazing what a little rest can do.

(narrator)   What does the man mean?

18.

(man)   Is the snack bar always this deserted?

(woman)   It's the end of the semester. Everyone's in the library studying.

(narrator)   What does the woman imply?

19.

(woman)   Are you going to play tennis with us today?

(man)   I promised Bill I'd go hiking with him — and I'm really looking

              forward to it.

(narrator)   What does the man mean?

20.

(man)   Joe's not planning to go to California again this summer.

(woman)   But with his new schedule, he could.

(narrator)   What does the woman say about Joe?

21.

(woman)   If Professor Thomson was willing to give us a three-day

              extension to finish the project, maybe she'll give us a few more

              days.

 (man)   Let's not push our luck, okay?

 (narrator)   What does the man mean?

22.

(man)   Do you know what's wrong with Mark? He's been acting very

              strangely lately.

(woman)   Come on, with his parents coming to visit next week — right after

              he's moved into a new apartment — he's just got a lot on his mind.

(narrator)   What does the woman say about Mark?

23.

(woman)   You look cold and tired. Could I buy you a hot cup of tea?

(man)   Oh, that would be just what the doctor ordered.

(narrator)   What does the man mean?

24.

(man)   There were only twenty learners at last night's meeting, so nothing

could be voted on.

(woman)   That's too bad. They'll have to turn out in greater numbers if they

want a voice in campus issues.

(narrator)   What does the woman mean?

25.

(man)   Have we received responses from everybody we invited?

(woman)   Only Tina can't come.

(narrator)   What does the woman mean?

26.

(man I)   I hope the view from the balcony's good.

(man 2)   No problem — you can see the actors no matter where you're

sitting.

(narrator)   What kind of place are the speakers probably talking about?

27.

(woman)   Could you use a hand with those suitcases?

(man)   If you wouldn't mind.

(narrator)   What does the man mean?

28.

(man)   You're redecorating your apartment, aren't you? How's it coming

along?

(woman)   I'm just taking it one step at a time.

(narrator)   What does the woman mean?

29.

(woman)   We're supposed to pick up the tickets to sell this afternoon. (man)

Oh, so they have been printed.

(narrator)   What does the man assumed about the tickets?

30.

(woman)   Were you able to reach Lucty at home?

(man)   I couldn't get to a phone.

(narrator)   What does the man mean?

Questions 31-34. Listen to a telephone call to a professor.

(man)   Math Department, Dr. Webster speaking.

(woman) Hello, Professor Webster. This is Janet Hill calling. I live two doors

down from your teaching assistant, Don Williams. Don asked me to call you

because he's lost his voice and can't talk to you himself.

(man)   Lost his voice? That's too bad. Is there anything I can do for him?

(woman) Well, he has a class this afternoon from two-thirty to four, and he won't

be able to make it. But he doesn't want to cancel it either.

(man)   Does he want me to try to find somebody else to teach it?

(woman) No, not exactly. What he wants to do is get someone to go in for him —

just to pass back the midterm exams. He's already marked them, and they're on the

desk in his office. The whole thing wouldn't take more than ... oh, ten minutes or

so.

(man) Two-thirty, you say? Well, I'm free then, and I was going to be on campus

anyway, so I could do it for him. Where's his class?

(woman) Carter Hall, room two-fourteen. Will you need his office key to get the

exams? I could bring it to you.

(man)   Well, actually, that won't be necessary. We have a master key in the

Math Department, so I can get into his office.

(woman) Thank you, Professor Webster.

(man)   My pleasure.

(woman) Don doesn't have another class to teach until Thursday, and hopefully

he'll be able to talk by then. He'll call you as soon as he can. Oh, and ... uh ... I

almost forgot....

(man)   Yes?

(woman) Could you put the next assignment on the board too? They should solve

the equations at the end of chapter eight, and that's due at the next class.

(man) Okay. No trouble at all. Thanks for the news about Don, and tell him not to

worry about this.

31.   What is Don's problem?

32.   What favor does Don want someone to do for him?

33.   What does Janet offer to do?

34.   What does Janet almost forget to ask Professor Webster to do?

Questions 35-39. Listen to two learners talk about an experiment in a science class.

(man)   Have you done the lab for physiology yet — the one on taste?

(woman) Yeah, it was kind of fun — mapping the taste buds. Didn't you think so?

(man)   I'm doing it this afternoon. How long will it take?

(woman) It went pretty quickly — under an hour, anyway. See, first you mix up the four solutions.

(man)   You take water and add either sugar, lemon juice, salt, or ... uh ... What was it?

(woman) Bitter quinine.

(man)   That's it... uh ... then what?

(woman) Then all you have to do is taste each sample and describe where each flavor seems most intense.

(man)   Is that hard?

(woman) Not really. One thing to remember though — not all the taste buds are on the tongue.

(man)   Right. I'll keep that in mind. And thanks for going over this with me. Maybe we could talk about this after I've tried it — we could get a pizza or something.

(woman) Great. Give me a call.

35.   What is the main purpose of the lab experiment?

36.   About how long does it take to do the experiment?

37.   What does the woman remind the man about?

38.   How does the man close the conversation?

Questions 39-42. Listen to "Science Watch," a daily radio program.

(woman)

Word comes from California of a new weapon in the war on household pests. Two scientists working for a firm in Anaheim, California, have developed a method to eliminate insects without using dangerous chemicals. The new poison? Hot air.

The basic idea is that insects cannot adjust to temperatures much above normal. In laboratory experiments, cockroaches and termites can't survive much more than a quarter of an hour at 125 degrees Fahrenheit, or about 50 degrees centigrade.

The new method involves covering a house with a huge tent and filling it with air heated to around 65 degrees centigrade. Hot air is forced in with fans, and the tent keeps the heat inside the house. Since termites try to escape by hiding in wooden

beams, the heat treatment must be continued for a full six hours. But when it's all over, and the insects are dead, there are no toxic residues to endanger humans or pets, and no funny smells.

Scientists claim that there is no danger of fire, either, since very few household materials will burn at 65 degrees centigrade. In fact, wood is prepared for construction use by drying it in ovens at 80 degrees centigrade, which is substantially hotter than the air used in this procedure.

39.   What is the talk mainly about?

40.   According to the speaker, what makes the new system better than other treatments?

41.   Why are the houses covered with tents?

42.   Why does the speaker mention that construction wood is dried by heat?

Questions 43-46. Listen to a teacher talk to learners in her freshman English course.

(woman)

I'm sure you realize that your research papers are due in six weeks. I've

looked at your proposed topics and made comments about them. The most frequent problem was proposing too broad a topic — remember, this is only a fifteen-page paper.

As I return your topic papers, I'd like to look over the schedule which sketches out what we'll do during the next two weeks. Today is Monday; by Friday, I want your preliminary outline. Please be sure to incorporate the suggestions I've made on your topics in your outlines. Next week I'll have a conference with each of you. I've posted a schedule on my office door — sign your name to indicate the time you're available for an appointment. In the conference, we'll discuss your preliminary outline. Then you can make the necessary revisions and hand in your final outline, which is due two weeks from today.

Use the outline style in your textbook and remember it should be no more than two pages long. Be sure to begin with a thesis statement — that is, with a precise statement of the point you intend to prove — and include a conclusion.

Have you got all that? Your two-page preliminary outlines are due at the end of this week and the final outlines are due after your conferences. Follow the textbook style and include a thesis statement and a conclusion.

43.   What does the speaker mainly discuss?

44.   When will conferences be held?

45.   What is the purpose of the conference?

46.   According to the speaker, how should the outline begin?

Questions 47-50. Listen to a talk given by a tour guide at a museum.

(man)

Before we begin our tour, I'd like to give you some background information on the painter Grant Wood — we'll be seeing much of his work today.

Wood was born in 1881 in Iowa farm country, and became interested in art very early in life. Although he studied art in both Minneapolis and at the Art Institute of Chicago, the strongest influences on his art were European. He spent time in both Germany and France and his study there helped shape his own stylized form of realism.

When he returned to Iowa, Wood applied the stylistic realism he had learned in Europe to the rural life he saw around him and that he remembered from his childhood around the turn of the century. His portraits of farm families imitate the static formalism of photographs of early settlers posed in front of their homes. His paintings of farmers at work, and of their tools and animals, demonstrate a serious respect for the life of the Midwestern United States. By the 1930's, Wood was a leading figure of the school of art called "American regionalism."

In an effort to sustain a strong Midwestern artistic movement, Wood established an institute of Midwestern art in his home state. Although the institute failed, the paintings you are about to see preserve Wood's vision of pioneer farmers.

47.   What is the main purpose of the talk?

48.   What had an important effect on Wood's early art?

49.   What would be most likely to appear in a painting by Wood?

50.   According to the speaker, how did Wood try to encourage Midwestern art?