THE USE OF THE INTERNET AMONG EFL TEACHERS AT THE COLLEGES OF TECHNOLOGY IN SAUDI ARABIA

DISSEYATION

Presented in Partial Fulfillment of the Requirements for
The Degree Doctor of Philosophy in the Graduate School of
The Ohio State University

By
Ali M. Al-Asmani, B.A., M.A.

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The Ohio State University
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Dissertation Committee:

Professor Alan R. Hirvela, Adviser
Professor Joseph A. Gliem
Professor Christopher J. Zirkle

Approved by

Adviser
College of Education
ABSTRACT

Because of its far reaching impact on many aspects and functions of educational institutions and its potential benefits for educators, the Internet has been the topic of much interest within the educational community. Ways of using the Internet as a medium to deliver instructional materials and to access digital libraries are reshaping how college campuses function, including the creation of virtual campuses.

The purpose of this study was to investigate the use of the Internet by teachers of English as a foreign language (EFL) in Saudi Arabian colleges of technology. A secondary purpose was to explore the relationship of teachers’ use of the Internet with a selected set of variables. These variables included EFL teachers’ personal characteristics, their level of access to the Internet, their perceived computer and Internet expertise, and their perceptions of the Internet as a tool for instruction. This study derived its theoretical framework from Rogers’ (1995) model of diffusion of innovations.

Both quantitative and qualitative methods were employed to collect data on the population. A questionnaire was developed and distributed to all EFL teachers (N=203) in the four main colleges of technology in Saudi Arabia (located in Riyadh, Abha, Jeddah, and Dammam) during the 2004-2005 academic year. Validity and reliability
were established for the survey instrument. The return rate of the survey was 81%. The survey stage was followed by phone interviews with a random sample of 15 teachers.

Results from both the quantitative and qualitative domains of the study indicated that the participants had rarely used the Internet, particularly for instructional purposes. Indeed, they reported more use of the Internet for personal than for instructional purposes. Participants had high levels of Internet use in mainstream Internet services such as e-mail and the World Wide Web. While they had positive perceptions of the use of the Internet as a pedagogical tool, they had relatively limited levels of access to and expertise with computers and the Internet. Positive correlations existed between teachers’ level of use of the Internet and five independent variables, including computer and Internet expertise, place of access to the Internet, perceptions of the Internet, computer experience, and Internet experience. Multiple regression analysis indicated that only expertise, place of access, and Internet experience had a significant predictive value of teachers’ use of the Internet. The results indicated that approximately 39% of the variance in Internet use was explained by the independent variables included in this study.

A major conclusion of the study was that to increase Internet use, EFL teachers need to be given more Internet training. In-service training needs to be a top priority, with a primary focus on using the Internet as a tool for teaching and learning. Also, based on the study’s findings, it was recommended that policy-makers maintain EFL teachers’ positive perceptions of the pedagogical use of the Internet by spending more money on increasing the computer infrastructure in the colleges of technology in Saudi Arabia, on improving Internet access and services, and on educating both teachers and students
with respect to issues concerning the cultural appropriateness of materials available on the web.
Dedicated to

*****

ALLAH

The Lord, Creator, and Sustainer of the Heavens and Earths

*****

Then to

My family

My father and mother, wife, children, and brothers and sisters

**********
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In the Name of Allah, the Most Gracious, the Most Merciful

All praise due to Allah alone, I praise him, seek his aid and seek his forgiveness. I testify that there's no god but Allah, and that Mohammed (peace be upon him) is his slave and messenger.

Allah Almighty says: “O ye who believe! Fear Allah, and (always) say a word directed to the Right: That He may make your conduct whole and sound and forgive you your sins: he that obeys Allah and His Messenger, has already attained the highest Achievement.” [The Holy Quran 33-70, 71]

I thank Allah Almighty for giving me the inspiration, patience, time, and strength to finish this work. With Allah's will and mercy I was able to archive all of this.

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As it is the case in most human productions, this dissertation was the result of the collective efforts of a number of important and valued people who have directly or indirectly assisted and supported me during my doctoral studies and in this present endeavor. To these people, I owe my gratitude and thanks.

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VITA


1993................................. B.A. in English, King Saud University, Abha, Saudi Arabia

1993 - 1997......................... English teacher, Abha College of Technology, Abha, Saudi Arabia

1997 - 2000 ....................... M.A. in Teaching English as a Second Language, Central Missouri State University, Warrensburg, Missouri

2000 - Present ................. Ph.D. student, Department of Foreign/Second Language Education, The Ohio State University, Columbus, Ohio

FIELDS OF STUDY

Major Field: Education

Minor Field: Foreign/Second Language

Minor Field: Technology in TESOL

Minor Field: DACUM Job and Occupational Analysis

Minor Field: Teacher’s Technology Training and Needs Assessment

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Study Variables
CHAPTER 1

INTRODUCTION

Since the early 1990s, the Internet, an international collection of computer networks that is one of the most powerful inventions in human history, has undergone exponential growth in many fields—business, science, entertainment, etc.—and has transformed these fields in the process. It has changed both the way in which people communicate with one another and how they access and use information. In the realm of education, it provides valuable access to communication services and information resources for millions of users, teachers and students, around the world and thus has created new and intriguing instructional possibilities (Warschauer & Whittaker, 1997).

Because of its far reaching impact on many aspects and functions of educational institutions and its potential benefits for educators, the Internet has been the topic of much interest within the educational community (Owen & Liles, 1998). Universities and colleges, where academic dialogue and access to information resources such as digital databases are increasingly essential for professional success, are especially likely to enjoy the benefits of the Internet (Maurer & Olson, 1998). That is, through the Internet educators have much wider access to curricular materials, content area
information, and news of professional interest. In addition, they are better able to maintain and establish contact with other educators across the globe through the computer on their desktops (Owen & Liles, 1998). In addition, ways of using the Internet as a medium to deliver instructional materials and to access digital libraries are reshaping how college campuses function, including the creation of virtual campuses. Indeed, web-based instruction, online courses, and the use of the Internet to deliver distance education are emerging and important fields of study (Almogbel, 2002).

Digital libraries, too, have attracted considerable interest, with many universities being inspired by the capabilities of the Internet to reorient the traditional library infrastructure so as to take advantage of the Internet’s many resources (Al-Fulih, 2002).

The Internet originated as a network of U.S. government and military computer facilities back in the 1960s (Zakon, 1996), but it wasn’t until the early 1990s that it emerged in the eyes of the wider public (LaQuey & Ryer, 1993). This perceived ‘newness’ of the Internet, together with its ever-widening reach around the world, has earned it the status of an innovation (Porter, 1997). According to Rogers (1995), an innovation is an idea, practice, or object that is perceived as new by an individual or some other unit of adoption. Innovations can reach what is called a “critical point,” that is, a level of use at which further adoption is considered “self-sustaining” (Katona, 1999; Rogers, 1995). In light of its many users and many uses around the world, the Internet as an innovation appears to have reached this critical point of adoption and diffusion.
Statement of the Problem

In light of the Internet’s vast potential, expectations are high that it will serve as an innovation that will replace conventional forms of education (e.g., blackboards, chalk, and overhead projectors) with new and possibly better means of instructional delivery and thus improve teaching and learning. Gifford (1995) summarizes this expectation as follows:

The new teaching and learning architectures enabled by the coming generation of powerful networking and communication technologies will propel institutions to shed many constraints that are deeply embedded in the current dominant model for transferring content information to students—the batch-oriented, whole-class, lock-step, lecture-presentation (p. 3).

At present, the reality of the information age as represented by the Internet is no longer a novel development, and computer-based technology is not the mysterious entity it once was. Instead, it has become a tool that many English as a second language (ESL) teachers use, particularly in the Western and English-dominant countries of the world.

The rapid growth of the Internet has not escaped the attention of English language teachers in the Arab World. More and more teachers of English as a foreign language (EFL) in the Arab World are becoming Internet users, and universities in that region are showing increasing interest in adopting computer-based forms of instruction.

While growing numbers of English teachers in the Arab World and elsewhere are turning to the Internet, this does not necessarily mean that they are comfortable with it or use it well, or that student learning has been enhanced significantly by such technology. For all the promise of the Internet as a pedagogical tool, the jury is still out
with respect to its effectiveness as an instructional device. There is also an as yet unclear picture as to the most popular uses of the Internet in English language teaching as well as teachers’ attitudes toward the Internet as an instructional tool. At present, only a limited number of studies have been conducted on the use of the Internet for instructional purposes by ESL teachers, and there has been even less focus on EFL teachers. The scarcity of such studies does not permit the creation of any firm conclusions or generalizations about the Internet and English language instruction, especially in EFL contexts (Mubireek, 2001) and particularly in the Arab World. Without this knowledge, it is difficult to know whether or how to proceed in the implementation of Internet-based English language teaching in the Arab countries, where interest in the Internet is, as already noted, on the rise. It is especially important to understand teachers’ attitudes toward the Internet and their willingness or unwillingness to use it in their classrooms, since teachers play such an important role as agents of change and innovation in the world of education.

In particular, it is important to determine which instructors among the EFL teachers in this dynamic area of the world are adopting the Internet for instructional and professional development purposes and why some may avoid using the Internet for such purposes. This type of information can play an important role in helping EFL educators diagnose and address teacher-related reservations and limitations concerning the Internet and thus contribute to the creation of new possibilities for students' English language learning and English teachers’ professional development.

Information regarding innovations that have the potential to improve teaching and learning outcomes is necessary for successful education development and/or reform.
This is especially true with respect to the Internet, an innovation that has undergone different levels of diffusion in the field of English language teaching (Pennington, 2004) and is now emerging as a potentially significant tool for EFL teachers in the Arab World. As noted earlier, because teachers play a key role in the diffusion of educational innovations and will be of critical importance in determining the extent to which the Internet impacts on English language teaching in the Arab World, it is essential to know where they stand with respect to the value and implementation of the Internet in EFL instruction. However, few studies to date have investigated their beliefs and practices concerning the Internet or the extent to which the Internet can be considered an innovation in the Arab context.

Therefore, the problem addressed in this study was the lack of information regarding the level of Internet use for instructional purposes among Arabic EFL teachers at colleges of technology in Saudi Arabia and the factors that may affect their attitudes toward the Internet. Colleges of technology in Saudi Arabia were selected as the research sites for the study because they are primary locations for efforts to utilize the Internet for pedagogical purposes.

**Purpose and research questions**

The primary purpose of this study was to investigate the extent to which EFL teachers in the colleges of technology in Saudi Arabia use the Internet, particularly for instructional purposes, so as to construct a meaningful profile of the status of the Internet as an innovation in the realm of Saudi Arabian EFL instruction. More specifically, the study examined the relationships among factors identified as potentially related to Internet use. Selected factors used in this study were based on
Rogers’ (1995) diffusion theory and previous research and included: (1) teachers’ perceived access to the Internet; (2) teachers’ perceived expertise in Internet use; (3) teachers’ perceptions toward the Internet as a tool for instructional purposes; and (4) selected characteristics of EFL teachers in the colleges of technology in Saudi Arabia. To accomplish its main purpose, the study addressed the following research questions:

1. What is the level of the Internet use among EFL teachers in the colleges of technology in Saudi Arabia?

2. What are selected personal characteristics of EFL teachers in the Colleges of Technology in Saudi Arabia related to Internet use?

3. What is the level of EFL teachers’ perceived access to the Internet as well as limitations of that access?

4. What is the level of teachers’ perceived expertise in computer and Internet use?

5. What are EFL teachers’ perceptions toward the Internet as a tool for instruction?

6. What is the relationship between teachers' level of the Internet use on one hand and, on the other, their access to the Internet, expertise in the Internet use, perceptions of the Internet, as well as their personal characteristics?

7. Which independent variables explain the greatest amount of variance in the level of the Internet use by EFL teachers in colleges of technology in Saudi Arabia?
A “dominant-less-dominant” research design (Creswell, 1994) was utilized in which the quantitative component of the research was enhanced by qualitative data. The dominant, quantitative research design employed a descriptive survey to gather cross-sectional data about EFL teachers’ use of the Internet. For the less-dominant research design, qualitative data was gathered by interviewing a subset of EFL teachers at the colleges of technology in Saudi Arabia about their use of the Internet in instruction and the limitations that might hinder such use. The study employed both quantitative and qualitative measures so as to create a fuller and richer portrayal of Saudi Arabian EFL teachers’ experiences with and beliefs toward the Internet than the use of one measure would provide.

**Variables of the study**

The study’s dependent variable was the perceived level of Internet use for instructional purposes among EFL teachers in colleges of technology in Saudi Arabia (See Figure 1.1). Its independent variables were:

1. Teachers’ perceived access to the Internet
2. Teachers’ perceived expertise in Internet use
3. Teachers’ perceptions toward the Internet as a tool for instructional purposes
4. Selected characteristics of EFL teachers

Figure 1.1 portrays the relationships between these variables:
Figure 1.1: Factors associated with the individual adoption decisions of the Internet. Adopted from Rogers (1995) Diffusion of Innovations.
Setting of the study

Saudi Arabia was selected as the overall research site for the study in part because the use of technology in its educational system is developing so rapidly. Many schools at all instructional levels (from kindergarten to college) have computers and are in the process of acquiring more technology for use by both teachers and students. For example, in a serious effort to reform education, in May 2001 the Saudi Ministry of Education selected Microsoft Arabia, the Saudi affiliate of the U.S. software company, to help set up 1,300 computer laboratories at Saudi secondary schools at a total cost of 100 million Saudi riyals, approximately 26.66 million U.S. dollars (Saudi Embassy, 2003). This project was one of many aiming to enhance computer-aided education in schools across Saudi Arabia. In addition, a five-year project has been seeking to link, through the Internet, more than 24,000 schools (including more than 300,000 teachers and four million students) and educational centers in the country so as to facilitate online learning and sharing of school resources (Almogbel, 2002).

Colleges of technology in Saudi Arabia come under the authority of the General Organization for Technical Education and Vocational Training (GOTEVOT) and are intended to provide technical and vocational training to students at the postsecondary level. The first two-year college of technology was established in Riyadh (Saudi Arabia’s capital) in 1983-84 (Oliver, 1987). The college was expanded after two years of operation and now offers four-year programs and baccalaureate degrees in many specialties. The GOTEVOT’s budget for the year 2002 included the establishment of four new colleges of technology in new locations to meet the growing need for technical education at the postsecondary level.

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Due to the need for expansion in the field of higher technical education, currently there are thirty three colleges of technology distributed in all major cities and regions over the country (Appendix J). These colleges offer training in various technical and commercial specialties. Technical specialties are offered in the fields of industrial production, auto electricity and mechanics, electrical equipment, electrical installation and planning, industrial electronics, chemical labs, auto control, computerized accountancy, office administration, air conditioning and refrigeration, computer technology, pneumatic and hydraulic control, and construction technology (GOTEVOT, 2004).

At the colleges of technology, students enroll in specialized programs which are normally two academic years in length (but may run as long as four years), during which they take approximately 90 credit hours of course work. Admission to any of these colleges requires the General Secondary Education Certificate (scientific branch), the Secondary Vocational School Diploma, or the Secondary Commercial School. The programs lead to the awarding of baccalaureate degrees, certificates, and diplomas.

As for teaching English as a foreign language at colleges of technology in Saudi Arabia, English is not a specialization. Colleges of technology have three mandatory general English courses under the Department of General Studies. All students are required to pass these three English language courses in addition to all other courses they have to take from their specialized department in order to graduate. These three English language courses are organized according to various proficiency levels. English-One is a low or beginner’s level of English language proficiency course.
English-Two caters to students at lower intermediate or intermediate levels, and
English-Three is designed for the advanced or high-intermediate levels of proficiency.

Curriculum development for English courses has been a matter of debate since the
establishment of the colleges of technology. There has been disagreement among
authorities from many colleges on what and how should English teaching be performed
(Alfallaj, 1998). However, recently, and after a long periods of experimentation, the
content of these English courses has been set and all colleges of technology employ the
same curriculum and use similar teaching materials. However, methods of English
language instruction vary. Some teachers use traditional ways of delivering instruction,
such as the grammar translation and audiolingual approaches; some use other methods
that focus more on the communicative and social aspects of the language; and some use
a mixture of both approaches (Alfallaj, 1998). As for the use of technology in teaching,
this was not clear as of the beginning of this study.

Colleges of technology in Saudi Arabia have distinctive features that would facilitate
research on Internet use among EFL teachers. The colleges employ a large number of
EFL teachers (approximately 315) with different experiences and education levels. In
addition, the colleges are equipped with the latest technology, including computer
hardware and software and computer labs that both teachers and students can use. EFL
teachers at colleges of technology in Saudi Arabia thus should have easy access to the
Internet and would be expected to have a certain degree of technological literacy.
Hence, these schools provided an ideal setting for investigation of the study’s research
questions.
Four major colleges of technology located in the cities of Riyadh, Jeddah, Dammam, and Abha, collectively, were used as a representative sample of the total of thirty three Saudi colleges of technology. These four major colleges possess the institutional variables necessary for this study, such as the size of the available research population and the geographical distribution of EFL teachers. According to statistics for the last academic year, i.e., 2004-2005, the total number of EFL teachers in the four technical colleges was 203 (GOTEVOT, 2004).

**Significance of the Study**

This study was significant for several reasons. First, it provided valuable information concerning EFL teachers’ use of the Internet in a very dynamic part of the world. As noted earlier, most of the relevant research to date has focused on ESL teachers, and very little was known about the use of the Internet among EFL teachers, particularly in the Arab World. Thus, the study provided a much-needed window into an area of the world that is important in the realm of EFL instruction but relatively little understood outside the Arab World.

Second, the study’s data about the attitudes and other barriers that prevent EFL teachers, especially in the Saudi Arabian context, from accepting the Internet and thus integrating it into the curriculum, would be valuable to policymakers and teacher education coordinators seeking to decrease the gap between those EFL teachers who use the Internet in instruction and those who do not. Particularly, information and insights provided by the study might assist EFL educators and policy makers in the GOTEVOT in deciding whether skills and knowledge related to the Internet should be introduced within their curriculum and, if so, how this might be accomplished.
Third, the study shed light on new and perhaps better approaches to language instruction using the Internet as a pedagogical tool. Related to this, the study’s findings might assist curriculum and software developers in designing appropriate tools to make EFL teaching and learning in the Arab World context more effective.

Fourth, one of the responsibilities of EFL teacher trainers in Saudi Arabia is to equip their pre-service teacher interns with appropriate knowledge of cutting-edge technology like the Internet so as to enrich both their future teaching and their continued professional development. The results of this study would better prepare them to meet this responsibility by drawing their attention to the concerns and limitations experienced by teachers already in the field.

Finally, this study would provide insight into previous research on EFL/ESL teachers’ use of the Internet by either supporting or challenging earlier findings. While doing so, it may also shed light on other areas of related research in need of investigation.

**Basic Assumptions**

There were several assumptions underlying this study. They included:

1. EFL teachers at colleges of technology in Saudi Arabia had enough expertise with computer hardware and software and had used the Internet enough to be able to respond meaningfully to items in the questionnaire and the follow-up interview questions.

2. Participants in this study would provide truthful information about their level of use of the Internet and their attitudes toward it.
Limitations of the Study

One of the study’s limitations was that its research population was restricted to the in-service (full-time and part-time) EFL teachers at colleges of technology in Saudi Arabia. Therefore, the findings of this study might not be generalized to a wider population within the country unless similar characteristics exist. Research on other EFL teacher populations might reveal different findings within the Saudi Arabian context. Likewise, the findings pertained only to the Saudi Arabian context and cannot be generalized to other settings in the Arab World or other EFL countries outside the Arab World. Another limitation was that the results were not applicable to ESL settings and thus cannot be generalized to the creation of an overall portrait of Internet use in the field of teaching English as a second language.

Definition of Terms

The purpose of defining terms was to provide the technical details necessary for reproducing the study. This study used two types of definitions: constitutive and operational. According to Kerlinger and Lee (2000), “a constitutive definition defines a construct using other constructs” (a concept that has been designed for a specific purpose) (p. 42). Kerlinger and Lee also described an operational definition as a definition that “assigns meaning to a construct or variable by specifying the activities or ‘operations’ necessary to measure it and evaluate the measurement.” (p. 42). The following terms as used in the study were defined as follows:
The Internet

Constitutive definition – The Internet is defined by the Merriam-Webster Online Dictionary (2004) as “an electronic communications network that connects computer networks and organizational computer facilities around the world”.

Operational definition – For the purpose of this study, the Internet was defined as an interactive network allowing users to have access to different functions within the system. On the Internet, information could be exchanged through several media such as electronic mail or the World Wide Web (see chapter two for more definitions).

Level of Internet Use for Instructional Purposes

Constitutive definition – Level is defined by the Merriam-Webster Online Dictionary (2004) as a “position in a scale or rank”; Internet is defined by the same source as “an electronic communications network that connects computer networks and organizational computer facilities around the world”; use is defined as a “method or manner of employing or applying something”; and instruction is defined as “the action, practice, or profession of teaching”. Level of Internet use for instructional purposes is constitutively defined as a position in a scale or rank of the application of electronic communications network in the practice of teaching (Isleem, 2003, p. 11).

Operational definition – For the purposes of this study, level of Internet use for instructional purposes was operationally defined as the use of Internet for lesson preparation, lesson delivery, evaluation, communication and administrative record keeping (i.e., grades, attendance) as was measured by the instrument developed for this study (Isleem, 2003, p. 12).
Access to the Internet

Constitutive definition – Access is defined by the Merriam-Webster Online Dictionary (2004) as “permission, liberty, or ability to enter approach, communicate with, or pass to and from”; it also may mean “freedom or ability to obtain or make use of something”. Accessible is defined by the same source as having the capability of being reached (e.g., information can be accessible). The Internet is defined by the same source as “an electronic communications network that connects computer networks and organizational computer facilities around the world”.

Operational definition of access – For the purpose of this study, access was defined as being physically able to use electronic communications network at home and in the office/at school (Isleem, 2003). In this study, access was measured on a five-point Likert-type scale by two variables place and limitations of access. One gathered data about participants’ ability to gain access to use the Internet in various locations, and the other examined factors that may limit such access.

Expertise in Internet Use

Constitutive definition – Expertise is defined by the Merriam-Webster Online Dictionary (2004) as the “skill of an expert (having, involving, or displaying special skill or knowledge derived from training or experience)”.

Operational definition – For the purposes of this study, expertise was operationally defined as EFL teachers’ beliefs about their personal efficiency and effectiveness when using the Internet for instructional and professional purposes as was measured by the instrument developed for this study (Isleem, 2003, p.12).
Teachers’ Characteristics

Constitutive definition – Characteristic is defined by the Merriam-Webster Online Dictionary (2004) as “a distinguishing trait, quality, or property”.

Operational definition – For the purposes of this study, characteristic was operationally defined as demographic information about EFL teachers in colleges of technology in Saudi Arabia as was measured by the instrument developed for this study.

Perceptions toward the Internet

Constitutive definition – Perception is defined by the Merriam-Webster Online Dictionary (2004) as a “result of perceiving” or a “mental image of a concept”.

Operational definition – For the purposes of this study, perception was operationally defined as EFL teacher’s beliefs regarding the use and integration of the Internet as a tool for instructional and professional purposes as was measured by the instrument developed for this study (Isleem, 2003, p. 13).

EFL Teacher

Constitutive definition – The Longman Dictionary of Language Teaching and Applied Linguistics defines EFL as the role of English in countries where it is taught as a subject in schools but not used as a medium of instruction in education nor as a language of communication within the country (e.g., it is not used in government, business, or industry). In other words, EFL comes from the sense that English is practiced by students only inside classrooms and rarely or not used or practiced in public by members of the society. Teaching of English in the United States, England, and Australia is not considered an EFL setting because English is used and practiced in public (not only in classroom) for social and life needs. A teacher is defined by the
Merriam-Webster Online Dictionary (2004) as one who teaches, i.e., one whose occupation is to instruct. EFL teachers may therefore be defined as those who teach English in a setting (e.g., China) in which the English language is not the first language and is not used often in daily communications.

Operational definition – For the purpose of this study, EFL teachers are those employed at least 16 hours per week by the General Organization for Technical Education and Vocational Training (GOTEVOT) and whose primary responsibility was to teach English as a foreign language to Saudi students at colleges of technology in Saudi Arabia.
CHAPTER 2

REVIEW OF LITERATURE

The purpose of this study was to explore the use of the Internet by EFL teachers at the Colleges of Technology in Saudi Arabia. This chapter provides an overview of the literature related to the current study. The literature review addresses the concept of the Internet, use of the Internet in education, Internet in the Arab World, educational system in Saudi Arabia, Internet in Saudi Arabia, computer-assisted language learning (CALL), Diffusion of Innovation theory, and contextually related studies.

What were the most influential factors that were related to Internet use by EFL teachers? Understanding and defining Internet use was the first and most important necessity of this study. Also, understanding and defining the factors related to Internet use, as found in the literature, was the next task. An examination of the literature about Internet use suggested the following major factors: access, expertise, perceptions, and selected characteristics of teachers.

The concept of the Internet

The Internet is a worldwide network of computers, which is often explained as the world's largest computer network as well as the fastest growing worldwide system.
Computer network means the connection of many computers together for communication (Ciampa, 2000). Also, the Internet can be called the network of networks based on the Transmission Control Protocol/Internet Protocol (TCP/IP).

The Federal Networking Council (1995) agreed that the following statement reflects its definition of the term “Internet”:

Internet refers to the global information system that: (a) Is logically linked together a globally unique address space based on the Internet Protocol (IP) or its subsequent extensions and follow-ons; (b) is able to support communications using the Transmission Control Protocol/Internet Protocol (TCP/IP) suite or its subsequent extensions/follow-ons, and/or other IP-compatible protocols; and (c) provides, uses or makes accessible, either publicly or privately, high level services layered on the communications and related infrastructure described herein (Cited in Al-Fulih, 2002, p.19).

Mueller (1996) has defined the Internet as “an information distribution system giving anyone connected to it instant access to an immense amount of information” (p. 77). Krol and Ferguson (1995) describe the Internet as nothing more than a worldwide local area network, or a worldwide extension of a computer hard disk, although the technology used to connect all local area networks into one whole is complicated. According to Krol and Ferguson, the idea that the Internet is a connection of networks means little to the end user who wants to do something useful, such as, run a program or access some unique information. They further state that the basic concept of the Internet is a vast collection of libraries of information, all available online for retrieval and use.
The Internet might be considered as a collection of people who act as resources themselves, and who are willing to share their knowledge with the world.

**Internet applications**

According to the Internet World Stats, the estimated number of Internet users all over the world was approximately 800 million by September, 2004 (Table 2.1).

<table>
<thead>
<tr>
<th>World Regions</th>
<th>Population 2004 Est.</th>
<th>Internet Usage, Year 2000</th>
<th>Internet Usage, Latest Data</th>
<th>User Growth 2000-2004</th>
<th>% of World</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>893,197,200</td>
<td>4,514,400</td>
<td>12,786,100</td>
<td>183.2 %</td>
<td>1.5 %</td>
</tr>
<tr>
<td>Asia</td>
<td>3,607,499,800</td>
<td>114,303,000</td>
<td>256,454,536</td>
<td>124.4 %</td>
<td>32.1 %</td>
</tr>
<tr>
<td>Europe</td>
<td>730,894,078</td>
<td>103,096,093</td>
<td>224,462,968</td>
<td>117.7 %</td>
<td>28.1 %</td>
</tr>
<tr>
<td>Middle East</td>
<td>258,993,600</td>
<td>5,284,800</td>
<td>16,843,900</td>
<td>218.7 %</td>
<td>2.1 %</td>
</tr>
<tr>
<td>North America</td>
<td>325,246,100</td>
<td>108,096,800</td>
<td>222,956,690</td>
<td>106.3 %</td>
<td>27.9 %</td>
</tr>
<tr>
<td>Latin America</td>
<td>541,775,800</td>
<td>18,068,919</td>
<td>50,749,374</td>
<td>180.9 %</td>
<td>6.3 %</td>
</tr>
<tr>
<td>Oceania</td>
<td>32,540,909</td>
<td>7,619,500</td>
<td>15,786,930</td>
<td>107.2 %</td>
<td>2.0 %</td>
</tr>
<tr>
<td><strong>World Total</strong></td>
<td><strong>6,390,147,487</strong></td>
<td><strong>360,971,012</strong></td>
<td><strong>800,040,498</strong></td>
<td><strong>121.6 %</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

Table 2.1: world Internet usage and population statistics
(Adapted from InternetWorldStats.com, Sep. 2004)

The Internet offers its users services for searching, retrieving, and exchanging digital files. A number of researchers, including Krol and Ferguson (1995) and Cady and McGregor (1995) have agreed that the major applications offered on the Internet are: electronic mail (Email) applications, remote login (telnet), file transfer (FTP), databases and file search, and the World Wide Web.
E-mail stands for electronic mail. It is the most frequently accessed Internet application used as a communication medium (Engst, 1994; Wang & Cohen, 1998). It was developed during the 1970's and early 1980's, but it was limited to scientific, scholarly, and educational uses (Lasarenko, 1997). According to Engst (1994), email serves four types of telecommunication needs: one-to-one communication, distribution list (one-to-many), listservs (many-to-many), and auto reply (information request).

Hauptman (1998) states that email is beneficial for education and research use for its cost-effective means of communication among administrators, faculty/teachers and students where a vast quantity of information can easily be exchanged. Lasarenko (1997) contends that email is an important tool for educational purposes, such as electronic peer review, collaborative projects, journal subscription, social construction of knowledge in action learning communities, and research.

A number of studies have shown broad email adoption among faculty members and students in higher education. For example, Voorbij (1999) has reported that electronic mail is the most important and most frequently used Internet application by faculty members and students in his random sample of 1,000 members of the academic community of the Netherlands. He stated further that more than 80% of the Internet users in his study used electronic mail at least weekly. Also, Fusayil (2000) mentioned that 95.2% of Ohio University faculty members used email on a daily basis, 3% used it on a weekly basis, and only 0.6% could be considered non-adopters.

Email is one of the basic components of the Internet that eventually influenced ESL and EFL learning, and it is very widely used by ESL/EFL students and teachers. ESL/EFL teachers have been using email in their classes for more than a decade
(Warschauer, 1995b). Learners of all proficiency levels use e-mail communication for many purposes in ESL/EFL classes. Many teachers in colleges' writing classes have used e-mail discussion groups within their classes to give learners various opportunities for authentic written interactions with other learners or with native speakers of the target language (Gonglewski & et al, 2001). In addition, e-mail group communication such as bulletin boards, newsgroups that allow messages to be threaded, allow more opportunities for students to focus their discussions in more creative and useful ways.

Another Internet application related to electronic mail is the "Listserv", an automated e-mail distribution system. A listserv program facilitates electronic distribution of electronic mail for communicating with other people who have subscribed to the same list. Using e-mail, a person can participate in listserv related to his/her topics of interest. When he/she submits a message to the server, the message is relayed to all those on the listserv. A participant receives messages from other participants via e-mail. Many colleges and departments in higher education and educational organizations have their own Listserv. On a listserv, educators from all over the world can engage themselves in scholarly discussions about specific areas of research problems or particular fields of study.

File Transfer Protocol (FTP) enables the user to upload or download files from a remote computer. Although this application is an old Internet application, it is still used by scholars and educators. Krol and Ferguson (1995) have reported two reasons for its continued use: first, users' familiarity and, second, its compatibility with today's common web browsers. On the other hand, Wang and Cohen (1998) claim that FTP is
rated as the least used Internet application in comparison with other applications like email.

Chatting is a powerful tool for educators to exchange ideas and discuss educational issues, although the majority has not yet totally realized its importance, especially for ESL/EFL learners (Pellettieri, 2000). Unlike asynchronous communication in which participants are not existing in the same time (e.g., e-mail), chatting is a synchronous communication in that participants occur or exist at the same time on the Internet or having the same period or phase (Shetzer & Warschauer, 2000). Synchronous chatting can be carried out in a text-based format for more reliable access. However, nowadays audio and video chatting can be used effectively if there is enough bandwidth (Al-Fulih, 2002). Unlike the Listserv and discussion boards, synchronous chatting requires participants to be online at the same time.

The World Wide Web (WWW), the newest and fastest growing information service, has only been a part of the Internet since 1990 (Zhang, 1999). The WWW is sparking a revolution in the way humans think about the dissemination of ideas in the information age (Robin, Keeler & Miller, 1997). The WWW is already starting to transform academic practices, and its impact on education seems to be revolutionary. It can be used as a library, publishing house, communication device, and interactive media (radio/TV) (Warschauer & Healey, 1998). It has integrated almost all existing technology applications into a Web browser, combining text, graphics, sound, video, and much more to present a variety of ever-changing materials in one set (Krol & Ferguson, 1995). Internet Explorer and Netscape Navigator are examples of web browsers that come in combined information packages.
The Netscape Communicator package includes a browser (navigator), email (messenger), newsgroup (Collabra), Web editor (Composer), favorite channels and offline sites browsing (Net caster), and real time audio and data collaboration (Conference) (Zhang, 1999). According to Netscape (2003), the integration of all these applications in one product allows users to easily and effectively communicate, share, access information on the Internet. Microsoft Internet Explorer has gone further by integrating computer applications like word processing and spreadsheet into a web browser. This new integration is going to be a web-based, in which application are stored on a web server and users have to log on to use them. That will shift user culture from applications buyers to applications subscribers (Al-Fulih, 2002). The WWW is also considered the most recent medium of computer-mediated communication (CMC) used in the second and foreign language learning, as noted by Warschauer and Healey (1998).

**Use of the Internet in Education**

The educational community is increasingly focusing its attention on the potential of the Internet as a communication tool, research tool, and instructional tool (Fusayil, 2000). Nowadays, the Internet is being proposed as the preferred technology to improve instruction, increase access and research, and raise productivity in higher education (Baer, 1998). Gilbert (1996) stated that Internet applications such as the WWW and email are bringing computing into instruction in a way similar to when word processing became commonly used for personal use by students and faculty members in the 1980s in the United States.
Faculty members are increasingly adopting Internet applications for academic purposes. Wang and Cohen (1998) conducted a study on the use of the Internet by university faculty in a public university in the United States and found that they were aware of the role of the Internet in their professional development and mostly used it for teaching and research. Osborn and Fields (1996) pointed out that Internet communication applications such as electronic mail are widely used in educational settings. Gabriner and Mery (1998) in their ninth survey of faculty computer use reported that there has been a strong trend toward the adoption of Internet applications by faculty in comparison to their previous surveys’ results.

Kenneth Green, director of The Campus Computing Project, the largest continuing study of the role of information technology in American higher education, has documented how, for many years, the use of computers for teaching was confined to a tiny minority of faculty. Green (1999) reported that in American higher education 44.4% of classes use email, 33.1% use Internet resources as syllabus components, and 45.1% of undergraduates and 51.6% of faculty members use the Internet at least once a day (p. 5). In the last few years, however, those percentages have been growing sharply (Green, 2004) that half of faculty use all Internet applications and more than 76% use e-mail alone. In their study on the use of the Internet by university faculty, Wang and Cohen (1998) found that 85% of them used email, 55% used the WWW, and 48% used Gopher, which is a widely successful method of making menu of materials available over the Internet. In another study about the adoption of the Internet by Ohio University faculty members, it was found that 98.8% use the Internet (Fusayil, 2000).
The Internet seems to be an effective medium to deliver instructional materials. Web-Based Instruction (WBI) and Web-Based Training (WBT) are emerging fields of study to supplement face-to-face lectures and other classroom activities (Al-Fulih, 2002). Common use of the Internet in college level includes but is not limited to: uploading course syllabus; creating hyper-links to useful course materials and supplementary readings; exchanging electronic documents and engaging in one-to-one student-faculty discussions by email; and using discussion boards and listservs to support collaborative learning environments. Further, the Internet allows whole courses to be delivered via cyberspace using a number of different programs such as WebCT.

According to Al-Fulih (2002), the Internet has the potential to improve learning and teaching in a number of different ways. Just as the Internet has increased workers' productivity in business, it could reduce teaching costs as well. Also it could be more time efficient; it increases the speed by which instructional materials are delivered. Owen and Liles (1998) pointed out that the Internet's potential for improving effectiveness and efficiency is not limited to most educational institutions. Its ability to allow for access to information and knowledge across the world, to enhance communication between colleagues, and to provide a new teaching medium for student-centered learning can assist educators in numerous ways.

**Internet in the Arab World**

Although, the Internet is relatively new in the Arab World, it is getting much attention from individuals, businesses, educational institutions, and governments. The total Arabic speaking population is approximately 300 million, but only 10.5 million (3.5%) used the Internet as of March 2004 (Global Internet Statistics, 2004).
The Internet in the Middle East has been undergoing major changes. According to Al-Fulih (2002), in 1999 there were 1.9 million Internet users in all Arab countries. This number was more than two times the 700,000 users in 1998, and four times the number estimated in 1997. Alkamli (2000), director of both Middle East PC Magazine and Internet Al Alam Al Arabi (IAW), predicted that there were more than 12 million Arab Internet users in 2002, but he stated that the annual growth rate would slow down after 2002 because Internet providers in the region would not be able to supply Internet access after 2002 due to infrastructure limitations. Nevertheless, new estimates and statistics revealed the opposite (Global Internet Statistics, 2004). A recent study carried out by Madar Research Group estimated the size of the Internet community in the Arab world to exceed 25 million by end of 2005, based on current Internet user statistics and forecasts for 18 Arab countries (Madar Research Group, 2004).

According to the International Telecommunication Union’s 2003 statistics, the largest number of Internet users in the Arab World was in Saudi Arabia, with a total of 1.6 million connected to cyberspace. Egypt was second with a total of 1.5 million. Industry estimates predict that by 2005, Egypt's users will exceed those of Saudi Arabia to reach a total of 6.5 million. Yet neither Egypt nor Saudi Arabia tops the list of Arab countries in terms of Internet penetration. According to Rostamani (2003), the UAE (United Arab Emirates) has led all Arab countries in terms of its transformation into a networked and connected society. Bahrain comes second, with Qatar in third place.

In education, there have been serious attempts to provide Internet access to most universities and K-12 schools in many countries in the Arab region. In Saudi Arabia, for instance, back in 2000, after only one year of Internet access, five out of eight
universities made Internet access available for all their faculty members (Al-Habis, 2000). Now all Saudi universities have Internet access for faculty, staff, and students. The other Gulf universities (in Kuwait, Qatar, UAE, and Oman) are no exception (Mansuri & Al-Zoman, 1997). The American University in Egypt and King Faisal University in Saudi Arabia have announced that they have been cooperating in offering Web-based courses over the Internet (Al-Fulih, 2002).

Some universities in the region have gone further to provide a complete degree through the Internet. For example, the Regional Information Technology and Software Engineering Center (RITSEC) (2000) in Jordan has established an agreement with Middlesex University in UK to offer a Web-based Master’s degree in Business Information Technology in Arabic (ritsec.com website). Also, in September 2002, The Syrian Virtual University (SVU) was founded by the Syrian Ministry of Higher Education to offer online courses. The aim of SVU was to provide Arab students in the region and all over the world with online higher education of international standards using the latest technological developments. By summer 2004, at SVU there were more than 528 students from the following countries: Syria, Lebanon, Jordan, Saudi Arabia, UAE, Argentina, Kuwait, and USA (SVU online, Aug. 2004).

Furthermore, Egypt is working on a project called “PC for every student” that targets school students at all levels as part of the Smart Village Projects (Alkamli, 2000). United Arab Emirates, Qatar, and Kuwait have announced similar plans. Dubai has a plan to institute an Internet-based university as part of Dubai Internet city. According to high education authorities in Dubai, the Internet University is as important as the Internet City project itself (Alkamli, 2000). Leading initiatives such as those made by
Dubai, Egypt, Syria, Saudi Arabia and other Arab countries indicate that the region is moving toward more digital societies.

Also an Arabic digital library is gaining popularity and is being discussed extensively among Arabic educators and scholars (Al-Fulih, 2002). Although many universities have announced projects to build academic digital libraries, there are only few of them online available for Arab users.

**Educational System in Saudi Arabia**

The Saudi Arabian education system is divided into three main categories: general education, technical and vocational education, and higher education. General education is under the supervision of the Ministry of Education, which was established in 1954. General education consists of six years of elementary school, beginning at age six, three years of intermediate, and three years of general secondary school. After the first year of general secondary school, students can choose to specialize in either science or literature for the remaining two years. General education students do not study any subject related to vocational and technical skills. Higher education is under the supervision of the Ministry of Higher Education. There are eight universities in the Kingdom of Saudi Arabia that grant bachelor, master and doctorate degrees in different fields.

Technical education and vocational training in Saudi Arabia started in the early 1950s and was integrated with general education. Nowadays, technical and vocational education is a totally independent entity and all technical and vocational education is under the umbrella of the General Organization for Technical Education and Vocational Training (GOTEVOT), which was formally established in 1980 (GOTEVOT, 1989).
Technical education and vocational training was separated from the general educational system to give it more autonomy and impetus in order to play a critical role in the development of the Saudi national workforce.

The colleges of technology are the key sector in the GOTEVOT system. In the early 1980s GOTEVOT acknowledged the need for technological education at the college level to generate highly qualified national cadres. Therefore, the GOTEVOT approved the expansion of technical education to this level by GOTEVOT (Alzalabani, 2002). The aims of such a decision were twofold: first, to produce highly skilled technical manpower to take part in the country’s progress and development; and second, to create new opportunities for technical education in the Kingdom (GOTEVOT, 1989). Therefore, colleges were opened in Riyadh, Jeddah, Dammam, Abha, Buraid and Ahsa, in addition to Yanbu Industrial College and Jubail Industrial College, which are under the supervision of the Royal Commission of Jubail and Yanbu. Moreover, the government announced in 2001 that seven new colleges would be opened at different locations. Every year new technology colleges are established. Now, there are thirty three colleges of technology that are distributed all over the country (GOTEVOT, 2004). Moreover, in 1993 in the College of Technology in Riyadh, the period of study was increased to four years in order to grant its graduates the B.Sc. in technical engineering and to give them the same benefits and incentives given to graduates from other engineering colleges in the Kingdom (GOTEVOT, 1994).

Colleges of technology prepare students for careers in technology and engineering, such as Chemical, Construction, Mechanical, Electrical, Electronics, Computer, Commerce, Management and other administrative sciences. They receive diplomas,
and in one of the colleges, a bachelor’s degree to qualify in the job market as an applied engineer. Study at these colleges is based on the credit system. The student should complete 90 credits in two years (four semesters). Colleges of technology have various specialties. Technical specialists are divided into two sections: the first section is open for such as auto/electric technology, electric instrument technology and production technology is open to industrial and secondary schools. The second technical specialty, such as industrial electrics technology, chemical lab and technology and industrial production technology, is open to graduates of general secondary schools (scientific section). Commercial specialties, on the other hand, receive graduates from secondary commercial institutes (Alzalabani, 2002).

Students receive some incentives to encourage them to study in colleges of technology. For example, full time students at colleges of technology receive a monthly stipend of about SR 1000. A graduate is granted the College of Technology Certificate and graduates of excellence can continue their study at the College of Technology in Riyadh for the B.Sc. In addition, the student has the opportunity to obtain government vocational loans. The total number of students at colleges of technology was 6,999 in 1996. In the 2002-2003 school year, the number of students reached 33,876. The last figure for the number of faculty members at colleges of technology during 2002-2003 was 2,215 (GOTEVOT, 1996-2004).

**EFL Teaching and Learning in Saudi Arabia**

English is the only foreign language taught in Saudi public schools, starting from middle schools, (it is not taught in primary schools). It is not until seventh grade that students are introduced to English, when they are about the age of 12-13. Middle and
secondary schools correspond to junior high and high schools in the United States. The overall goal of the English language instruction in the Saudi public schools is to enable students to speak, read, listen and comprehend simple correct English, and write correct, simple passages to be able to communicate with other English speakers and to offer them a window on the world (Aldosari, 1992, p. 33).

In reality, however, the students’ English fluency, in the most cases, does not reach this ambitious goal. At the end of the twelfth grade, the great majority of students are able to produce only a few correct English sentences. This weakness could be attributed to some factors. These factors include the heavy use of Arabic in instruction, English is only limited to the English class 2-4 hours a week, no use of simple instructional technology (e.g., projector), and the use of traditional teaching methods such as grammar and vocabulary translation and audio-lingual approaches (Alfállaj, 1998), which do not emphasize communication.

At the postsecondary level, English is taught in all universities and junior colleges in Saudi Arabia, including colleges of technology, as one of the university or college requirements. The type of English taught varies from one department to another in each university or college. In colleges of technology particularly, English teaching units come under the General Studies Department in each college. The General Studies Department and English teaching units are considered service units rather than regular academic departments, since they offer general courses for students from other departments. There are three English courses (total of 6 credits and 9 hours of instruction). Curriculum content is organized according to students’ level of proficiency (high intermediate, intermediate, and beginner) and the grammatical structure of the
English language. There is little focus on writing and communicative English activities. The teaching methods used are grammar teaching, vocabulary translation, and drills and repetition. Again, students have very few opportunities to practice English outside the classroom. EFL teachers at colleges of technology used to prepare their own curriculum and teaching material; however, recently they have to strictly follow an assigned curriculum created by the general curriculum development committee, which include members from all colleges of technology. Surprisingly, nor EFL teachers or student have choice, decision, or voice in the curriculum development process (Alfallaj, 1998).

As for preparation of EFL teachers in Saudi Arabia, they are prepared in universities and teacher education colleges. Colleges of Arts, Education, and Languages and Translation are typical colleges where English departments usually exist. EFL student-teachers have to earn approximately 130 credit hours over 4-5 years in order to graduate with a Bachelors degree in English which would enable them to be employed in schools and colleges to teach English. EFL teachers graduating from colleges other than Education would need to finish teacher training and obtain certificates in English language methods of teaching before teaching in public schools. As mentioned above, teaching methods and materials also vary from one department to another (Alfallaj, 1998).

**Internet in Saudi Arabia**

Public access to the Internet is considered a new phenomenon in Saudi Arabia. In late December, 1998 and early January, 1999 the local Internet service providers (ISPs) were allowed to provide public access (Hameed, 1999). According to Southwell (2004),
the introduction of the Internet to Saudi Arabian society has followed a systematic plan called The National Information Technology Plan (NITP).

The decision makers that introduced the Internet into Saudi Arabia authorized the Saudi Telecommunication Company (STC) to establish all telecommunication links, and decided that King AbdulAziz City for Science and Technology (KACST) and the Internet Services Unit (ISU) would supervise the connection point between Saudi Arabia and the Internet (Al-Furaih, 2002b). Hence, ISU acts as a Saudi Internet exchange point. ISU also works in raising public awareness of the Internet and formulates the rules and regulations that govern the use of the Internet throughout the country. All Internet traffic must go through ISU for filtration. Also, KACST provides the Internet service directly to all Saudi universities and governmental research centers. In April 2003, there were 21 operational Internet Service Providers (ISPs), providing Internet access to 1.6 million users. This constitutes only 6.2% of the total population of about 25.8 million people (CIA - The World Fact Book, 2004). Most Internet users in Saudi Arabia go online at work, campus, or Internet cafés, and the average daily time online per user is 3.5 hours. 78% of the users are males, and most are aged between 24 and 31 years old (Nua.com, 2004).

In terms of Internet penetration, Saudi Arabia now ranks fifth among Gulf Cooperation Council States and sixth among Arab countries. Taking into account an average population growth of 3%, Internet penetration is estimated to reach 17.5 percent by the end of 2005 (Madar Research Group, 2004). For investment, Saudi Arabia is expected to invest $10.6 billion in information technology (ICT) over the next 20 years, according to the Saudi Arabian General Investment Authority (Southwell, 2004).
For Internet use in education, future plans are considering providing K-12 schools with Internet access. The Ministry of Education in Saudi Arabia has been planning to spend 1.5 billion dollars over a five years period. It started back in 2000 to provide 12,000 public schools with Internet access and more than two million computers (Al-Fulih, 2002). The Madar Research Group (2004) predicts the development of e-learning in Saudi Arabia will witness a 33% average growth rate over 2003-2008 due to the amount of financial support from the Saudi government.

On the higher education level, the use of the Internet has become a major event. It has impacted many individuals on many college campuses. All the eight universities and many colleges have Internet access. Faculty members and staff can access the Internet in their offices, and students can access the Internet in computer locations distributed on campuses (Al-Fulih, 2002).

A number of universities have gone further by offering online courses. For example, King AbdulAziz University in Jeddah has established an online branch which is totally virtual, in which students can sign up, study, be assessed and granted certificates and degrees from home using the Internet. Furthermore, King Fisal University, King Saud University, King Fahad University, and King Khakid University have a number of courses which can be finished online using the Internet.

On the other hand, it has been reported that few faculty members and teachers use the Internet for instructional purposes. Al-Fulih (2002) reported that the percentage of faculty members who used the Internet for instruction was only 45%. Allehaibi (2001) indicated that the diffusion of Internet technology among faculty members in Saudi universities is in its early stages. However, up to date, there are no research studies that
tell how or to what extent these faculty members and teachers use the Internet for instructional purposes.

Even though Internet use is growing very rapidly in Saudi Arabia, the rate of Internet use is considered to be one of the lowest in the world (Al-Fulih, 2002). Many researchers have pointed out that the Internet in Saudi Arabia could best be characterized as experimental, in that it is in the early stages of adoption (e.g., Al-Kahtani, 2001; Allehaibi, 2001; Al-Furaih, 2002b). According to Al-Furaih (2002b), there are four major issues that have to be addressed to achieve more diffusion of the Internet innovation. Firstly, Internet awareness should be raised on various levels: the government, private sector, organizations, businesses and individuals. People should be shown the benefits that Internet technology can bring to them, in order to increase Internet use. Secondly, Internet access prices are very high in Saudi Arabia; they are currently the highest in the region. This has discouraged users from staying online for longer periods. Thirdly, Local Regulations should be adopted to promote e-commerce and the use of Internet. Finally, domain names are mainly in Latin characters; there are now some attempts for Arabizing them. No standards are available yet, but once available they could help in breaking some of the language barriers for native Arabic users.

Despite the availability of the Internet in the Saudi educational system, there are teachers and faculty members who do not feel the need to adopt this technology in instruction. Allehaibi’s (2001) found that 25% of faculty members were reluctant to use the Internet in instruction. Also, Alfantoohk and Alsultan (2004) surveyed teachers in public schools in Saudi Arabia and found that 30% of the teachers stated that they were
against the adoption of the Internet in instruction for four main reasons: the language barrier, the expertise barrier, the need to adopt new methods of teaching, and the addition of more teaching tasks on the part of the teacher. As for the adoption of the Internet by teachers and faculty members in technical education, there were no research studies or reports about such use. Thus, the need exists to continue to explore how teachers and faculty members use the Internet, especially for pedagogical purposes.

**Internet in higher technical education**

Because colleges of technology come under the umbrella of the GOTEVOT, the GOTEVOT has established an independent department, Information technology (IT), to handle all information technology infrastructures in the whole organization. The IT department has created the Professional Learning Management System (LMS) to introduce the e-learning services to more than 20,000 students in computer courses in the first phase of an e-learning Web-Based project. This project was introduced to include centralized testing and registration facilities as well (Al-Obaidy, 2004). The IT department has local offices in every campus of college of technology so as to manage and help spread Internet use among faculty, teachers, staff, and students.

Eighteen out of thirty three colleges of technology have their own web sites. However, only few colleges offer online courses and online technology training workshops (e.g., Abha College of Technology, 2004). The availability of Internet access in colleges of technology raises questions about how and to what extent computer-assisted language learning has been adopted by EFL teachers. To date, there are no studies that report the extent to which EFL teachers at these colleges use the Internet for instructional purposes. In particular, to what extent EFL do teachers use the Internet,
and what are factors that limit that use? These questions need to be addressed and examined by research.

**Computer-Assisted Language Learning (CALL)**

Computer-assisted language learning (CALL) is that branch of computer-assisted instruction (CAI) applying computer technology to language learning and teaching. Warschauer and Healey (1998) described three distinctive stages in CALL’s history: behavioristic CALL, communicative CALL, and integrative CALL.

CALL’s first phase, behavioristic CALL, developed through the 1950s and was implemented in the 1960s and 1970s. Behaviorism was the basis for the pedagogical approach applied in the field during this time period. For example, language drills and practice activities were widely utilized using mainframe computers.

Two decades later, the second phase, communicative CALL, emerged. This period occurred around the time that personal computers permeated the market (in the late 1970s and early 1980s). Here, the focus of instruction was on the communicative activities of language, meaning rather than form, implicit rather than explicit grammar teaching, and the generation of sentences rather than the imitation of ready-to-use language.

The third phase, integrative CALL, emerged in the late 1980s and early 1990s. The pedagogical approach associated with CALL’s third stage is based on the sociocultural theory. It aims to fully integrate technology in the teaching of all language skills, focusing on task-based, project-based, and content-based approaches to create authentic social environments for learners (Warschauer & Healey, 1998). Multimedia computers and the Internet seem to be the most advanced tools used in CALL at its third phase.
Warschauer (1996) notes that multimedia computers help students to access text, graphics, sound, animation, and video, which allows for the integration of all four language skills. Nevertheless, their impact on language teaching is not yet felt, because teachers lack sufficient knowledge to develop their own programs and most commercial programs are poor in quality. The Internet seems to be the new technology that can overcome most of these disadvantages (Warschauer, 1996). This might be a starting point for a new phase of CALL, the rise of a 4th phase.

With regard to the lack of knowledge necessary to make full use of a technology, Norton and Wiburg (1998) define three stages in integrating technology into the curriculum successfully. The first stage involves the adoption of the innovation in a manner that does not threaten a culture. For instance, using computers as a function of "edutainment" (an entertaining computer-aided form of learning) is typical of first stage users. When the innovation is merged with older technologies to make more efficient use of a standard skill, users enter the second stage. Keeping an electronic grade book and using word processors as typewriters are typical examples. The third stage of technological integration involves the use of innovations that grow out of the innovation itself, e.g., holding students responsible for generating reading quizzes, developing discussions via e-mail, and the construction of collaborative web sites (Norton & Wiburg, 1998).

**Factors Limiting Internet Use among ESL/EFL teachers**

Like computers, the Internet is a technology that has recently occupied a distinguished position in the educational arena. However, there are many studies that have identified a number of factors which limit ESL/EFL teachers from using
computers and the Internet in instruction. For example, Debski (2000) found that teachers in his study, offered the chance to join an innovative computer-enhanced project, did so for reasons ranging from pressure to use computers in their courses to the opportunity to learn new technical skills. Other factors seen as facilitating teacher computer use are past experience of technology use, perception of the usefulness of technology for teaching, and overcoming technology-related anxiety (Knezek, Chirstensen, & Rice, 1996). Reed et al (1995) assert that attending a computer course can positively change language teachers' attitudes toward computers and the Internet, giving them more confidence and convincing them of its importance as a valuable teaching tool. Fisher (1999) found that teachers' attitudes were strongly related to their success in using technology, emphasizing the importance of prior experience with technology. Similarly, Lam (2000) notes that teacher confidence is significant and adds that other factors affecting teachers' decisions of whether or not to use computers include the usefulness of technology for job performance and its ease of use. Yildirim (2000) found that the current uses of the technology in schools and having a computer at home may also influence teachers' computer use. Teachers' attitudes toward technology can both support and inhibit the use of technology in the classroom.

ESL/EFL teachers and practitioners are prevented from using technology in a number of ways. These include time limitations both outside and during class (Lam, 2000; Levy, 1997a; Reed et al, 1995; Smerdon et al., 2000; Strudler et al, 1995); lack of materials and resources (Loehr,1996; Smerdon et al, 2000); insufficient guidelines, standards, and curricula (Langone et al., 1998); lack of leadership (Smerdon et al., 2000); lack of support or appreciation for integrating computers (Grau 1996; Strudler,
McKinney & Jones, 1999); a clash between new technologies at universities and older ones in schools; and the need for technical support and training (Abdal-Haqq, 1995; Lam, 2000; Langone et al., 1998; Levy, 1997a; Smerdon et al., 2000).

Among other factors that approved to influence technology use are age, gender, and teaching experience. However, it is not clear to what extent these variables are related to teacher use of technology (Lam, 2000). Levy (1997a) also suggests that rapid changes in technology can constitute a barrier to technology use. This suggestion has also been made by Pennington (2004), who found that outdated hardware and software and the need to use newer technologies also affect teachers' decisions of adoption of computers and the Internet in instruction.

In addition, Lam (2000) found that forcing teachers to implement technology in instruction may cause avoidance and resistance. He also found that the lack of perceived legitimacy of the computer as a useful educational tool has an influence on teacher adoption of the technology. Similarly, Cuban (1986, 1996) noted that technology advocates have ignored realities of the classroom environment. He also stated that "innovations for solving productivity problems defined by non-teachers invariably were mandated into use by district policy makers, not teachers" (1986, p. 54). He added that "views of teaching and organizational compliance ill-fitted to schools and classrooms and married to feckless strategies aimed at coercing teachers to use the innovation explain limited use of the new technologies" (1986, p. 56).

Nevertheless, it is important to mention that some ESL/EFL teachers implement technology in spite of the barriers mentioned above. Reed et al. (1995) found that "those able to overcome some of these hindrances included teachers who had had prior
experience with computing” (p. 2). Therefore, it seems that there is a relationship between teachers' prior technological experience and technology implementation in instruction. Also, Egbert et al (2002) mentioned that teachers who use technology in their teaching are those more likely to have more teaching experience.

**Rogers’ Diffusion of Innovations Theory**

The theoretical framework for this study was the diffusion of innovations theory developed by Everett M. Rogers (1995). Many researchers considered Rogers the leader of adoption/diffusion research since he published “Diffusion of Innovations” in 1962 (Carr, 1999). His book, “Diffusion of Innovations” (1995), presented a thorough study and description of the model of diffusion of innovations, as well as an extensive review of diffusion research in the social sciences field. At this time, the Internet is still considered an innovation (Porter, 1997). According to Rogers (1995), diffusion of innovations is defined as “the process by which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 1995, p. 10). The meaning of this statement consists of complex and interrelated concepts that describe the process of change based on decision-making as it occurs in a community. In the academic community, the instructors are assumed to be the major stakeholders (Siegel, 2002).

Rogers provided a guide for the adoption and diffusion process in relation to consequences — both internal and external to the system. He stated “a system is like a bowl of marbles: Move any one of its elements and the positions of the others are inevitably changed also. The interdependency is often not fully understood by the
adopters of an innovation, and may not be comprehended by the change agents who introduce a new idea in a system” (Rogers, 1995, p. 419).

**Innovation**

An innovation, according to Rogers (1995), is an idea, practice or object perceived as new by an individual or other unit of adoption. The person may not have yet developed favorable or unfavorable attitudes, nor adopted or rejected it. Much of Rogers’ work dealt with technological innovations. A technological innovation usually has at least some degree of benefit for its potential adopters, while not always very clear-cut.

Intended adopters are “seldom certain that an innovation represents a superior alternative to the previous practice that it might replace” (Rogers, 1995, p. 13). Internet use for instructional purposes is a practice that was generally perceived as new by educational professionals because of the increased capabilities afforded by the increased Internet connectivity and refinement of information technologies (e.g., Porter, 1997). While proponents of an innovation frequently cite the beneficial aspects, there is considerable uncertainty about the actual consequences of adoption (Rogers, 1995).

**Technological Innovations, Information and Uncertainty**

Rogers (1995) sees technology as a:

Design for instrumental action that reduces the uncertainty in the cause-effect relationship involved in achieving a desired outcome. This uncertainty drives the potential adopter to seek out information, which will help to reduce the uncertainty associated with adopting or rejecting the innovation. Technology usually has two components: (a) hardware, consisting of the tool that embodies
the technology as a material or physical object and (b) software, consisting of the information base for the tool (p. 12).

Related to this are two kinds of information in respect to technological innovations: (a) software information, embodied in a technology and serving to reduce uncertainty about the cause-effect relationship in achieving a desired outcome and (b) innovation-evaluation information, the reduction in uncertainty about an innovation’s expected consequences (Rogers, 1995, pp. 6-12). Internet use for instructional purposes, as an innovation, contained both hardware and software components that were consistent with general computer information system models.

**Technology Clusters**

A technology cluster consists of one or more distinguishable elements of technology that are perceived as being closely interrelated. Associated with the idea of technology clusters is the assumption that an adopter’s experience with an innovation influences that individual’s perception of the next innovation to diffuse through the individual’s system (Rogers, 1995). Internet use for instructional purposes belonged to the cluster of information and communication technologies that have been adopted by mainstream society in the U.S. since the 1980s.

**Characteristics of Innovations**

The characteristics of an innovation, as perceived by individuals, help to explain their different rate of adoption and are associated with the first three out of five steps in the innovation-decision process [discussed later in this chapter]. Rogers (1995) identified five characteristics of innovations: **Relative Advantage, Compatibility, Complexity, Trialability, and Observability.**
Relative Advantage is the degree to which an innovation is perceived as better than the idea it supersedes. Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters. Complexity is the degree to which an innovation is perceived as difficult to understand and use. Trialability is the degree to which an innovation may be experimented with on a limited basis. Observability is the degree to which the results of an innovation are visible to others; this stimulates peer discussion of a new idea (Rogers, 1995, pp. 15-16).

Past research indicates the above five qualities are the most important characteristics of innovations in explaining the rate of adoption—“... the relative speed with which an innovation is adopted by members of a social system” (Rogers, 1995, pp. 22-23). Innovations that are perceived by individuals as having greater relative advantage, compatibility, trialability, observability, and less complexity will be adopted more rapidly than other innovations. In other words, an innovation will experience an increased rate of diffusion if potential adopters perceive that the innovation: 1) has an advantage relative to other innovations (or the status quo); 2) is compatible with existing practices and values; 3) is not overly complex; 4) can be tried on a limited basis before adoption; and 5) offers observable results (Surry & Farquhar, 1997).

An important fact to note is that perceptions count. Receivers’ perceptions of the attributes of an innovation, not the attributes as classified by experts or change agents, affect its rate of adoption (Rogers, 1995). These attributes were reflected in varying degrees in previous research and were refined to fit the scope of this study through the investigation of teachers' perceptions of Internet use as a tool for instructional purposes.
Re-invention

Re-invention is “the degree to which an innovation is changed or modified by a user in the process of its adoption and implementation” (Rogers, 1995, p. 17). This can significantly alter what some might consider a linear process. Re-invention is responsible for the major refinements that have occurred in the computer technologies in the last thirty years leading up to the increased capabilities of the Internet, the current state of the art.

Communication Channels

A communication channel is “the means by which messages get from one individual to another” (Rogers, 1995, p.18). An example of such communication channels would be interpersonal channels (i.e., the face-to-face exchange of information), which are found to be effective in spreading new ideas among individuals, especially when those individuals have similar educations, socioeconomic status, or other important features. Most adopters depend mainly upon the experience of near-peers (Rogers, 1995).

Homophily is the degree to which two or more individuals who interact are similar in certain attributes, (i.e., beliefs, education, and social status). More effective communication occurs when two or more individuals are homophilous. However, one of the most distinctive problems in diffusion of innovation is that the participants are usually quite heterophilous, i.e. not similar. The very nature of diffusion demands that at least some degree of heterophily exist between the two participants (Rogers, 1995).

Time

Time is involved in an innovation’s rate of adoption in a system, the innovation-decision process, and the innovativeness of an individual. An innovation goes through a
period of slow, gradual growth before experiencing a period of relatively dramatic and rapid growth. In addition, the time element is involved in identifying the stage of the innovation decision process and the innovativeness of the adopters. The innovation-decision process is the process through which an individual passes from knowledge of an innovation to confirmation of his/her decision. It is essentially an information-seeking and information-processing activity in which the individuals and/or organizations are motivated to reduce uncertainty about the consequences of the innovation. This aspect of the theory remains among the most useful and well known (Surry & Farquhar, 1997).

The five steps of the diffusion process for individuals are knowledge, persuasion, decision, implementation, and confirmation (Rogers, 1995). Many innovation-decisions are made by an organization rather than by individuals. In those cases the decision process is more complicated because a number of individuals are involved. This process for organizations also has five steps: agenda-setting, matching, redefining/restructuring, clarifying and routinizing (Rogers, 1995).

Innovativeness is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than the other members of a system. Adopters are categorized based on innovativeness into five categories: innovators, early adopters, early majority, late majority, and laggards, based on the normal adopter distribution (Rogers, 1995). On one extreme of the distribution are the innovators, the risk takers and pioneers who adopt an innovation very early in the diffusion process, and on the other end are the laggards, those who resist adopting an innovation until rather late in the diffusion process, if ever.
Social System

A social system is defined as “a set of interrelated units that are engaged in joint problem solving to accomplish a common goal” (Rogers, 1995, p. 23). It constitutes a boundary within which an innovation diffuses. Important concepts within the social system are the structure (the patterned arrangements of the units in a system), system norms (established behavior patterns for the members of a social system), opinion leadership (the degree to which an individual is able to influence other individuals’ attitudes or overt behavior informally in a desired way with relative frequency) and change agents (an individual who influences clients’ innovation-decisions in a direction deemed desirable by a change agency external to the system) (Rogers, 1995).

Given the role a social system can play in the diffusion of innovations, there are three types of innovation-decisions: optional innovation-decision (independent choices made by the individuals within the social system); collective innovation-decision (choices made by consensus among the members of a system); and authority innovation-decision (choices made by a relatively few individuals in a system who possess power, status or technical expertise) (Rogers, 1995).

Contextually Related Studies

Rogers (1995) discussed the importance of contexts in examining a social system as a factor influencing the rate of adoption. One thing to note about adoption research is that while Rogers’ work is highly regarded and often used, some researchers use other theories in addition to, or instead of, his diffusion of innovations theory (e.g., Sherry et all, 2000; Blankenship, 1998). Also, while many researchers have studied the diffusion
of Internet technologies in education, very few have studied the Internet use in general or in instruction in the context of colleges of technology in Saudi Arabia. The following studies are among those which present contexts related to this study. These studies are organized into two contexts: studies that were conducted on different school settings in the U.S., and studies that have examined computers and the Internet diffusion in the Arab World and Saudi Arabia.

**Studies conducted in the U.S.**

Flood (2002) conducted a study to explored factors impacting faculty implementation of educational technologies within teaching/learning exchanges at The Ohio State University. The study examined six dimensions: faculty characteristics (personal, professional, and educational technologies), attitudes and beliefs, access and support, reinforcement and recognition, awareness and interest, and use as well as the relationships between these dimensions. The researcher found that personal characteristics of race and tenure were valuable in predicting the frequency of the implementation of educational technologies. In addition, the majority of faculty members believed that educational technologies provide potential for enhancing student learning, beneficial means for engaging students, and a stimulus for student problem-solving. About 75% of the respondents reported that they did not receive any support and training opportunities or sufficient infrastructure for supporting technology-based teaching. Also, faculty reported that there were no existing incentives for teaching with technology. Finally, awareness and interest was found to be the most valuable predictor for the use of educational technologies within the teaching/learning exchange.
Using Rogers' model of diffusion of innovations, Porter (1997) carried out a study to describe the level of use of the Internet by The Ohio State University (OSU) Extension educators, and the relationships between their level of use of Internet and selected factors. She found that Extension educators rarely or occasionally used the Internet, although 94% of them had Internet access at work and 47% had access at home. Also, participants were somewhat proficient with the Internet, and they were most proficient at e-mail with a relatively positive perception of the Internet. The data also showed significant substantial associations for home access, computer literacy and proficiency, and Internet literacy. A very strong association existed between Internet proficiency and perception of the Internet. Internet proficiency, home access, and perception of the Internet were factors that most explained the unique variance in Internet use. The study concluded that Extension educators needed more information and training on the use of the Internet. The researcher suggested a number of motives for educators to use the Internet, such as rewards and offering them job announcements.

Likewise, Katona (1999) used the diffusion framework to carry out a study to describe the level of use of electronic communications by administrative office professionals and to investigate the relationships between the level of use of electronic communications and selected environmental and personal factors. The researcher used a questionnaire to gather data about Ohio members of the International Association of Administrative Professionals (n = 312). The study found that 90% of the administrative office professionals use electronic communications at work, and most have access to e-mail, an intranet, and the World Wide Web. Confirming Porter’s (1997) results above, participants were not fully utilizing the resources that electronic communications offer
because they lacked the knowledge and skill to use a wider range of electronic communications components. They also acknowledged the need for formal training for success in raising their level of electronic communications use. The researcher, as well as many others (e.g., Almusalam, 2001; Flood, 2002; Porter, 1997), suggested that Organizations should encourage administrative office professionals to attend technology training inside and outside the organization by offering them rewards and tuition reimbursement.

Mubireek (2001) conducted a study to examine ESL teachers’ adoption of the Internet at The Ohio State University. He employed both quantitative and qualitative research methods (questionnaire and interviews). He found that ESL teachers at OSU were most proficient with e-mail and the World Wide Web; they had a generally positive perception of the Internet; they had to function as computer instructors as well as English instructors; and were limited in their use of the Internet in instruction because their insufficient access to the Internet in the classroom and lack of time available for technology training. Mubireek (2001) called for the need for further Internet diffusion research in similar language settings (e.g., EFL).

Blankenship’s (1998) study of Factors Related to Teacher Use of Computers in Classroom Instruction was centered on 241 teachers in public schools in Carroll County, Virginia. The study employed qualitative and quantitative methods grounded in three areas of research: school change, diffusion of innovations and behavioral psychology. Blankenship used diffusion of innovations (1995) theory as a model for studying diffusion of innovations in order to understand the diffusion of the use of computers in the classroom. The selected factors — related to Rogers’ theory and
defined by the literature review — included attitude, access, training, support, age, grade level, gender, and number of years before retirement. The major finding of the study was that training was the most common predictor of adoption, followed by attitude, support, access, and age of teacher. The study verified Rogers’ variables as determinants to the rate of adoption, and goes further by ranking them in terms of commonality.

Hoerup (2001) used qualitative research methods to investigate Virginia’s Stewart County school division in Diffusion of an innovation: Computer technology integration and the role of collaboration. She used Rogers’ theory as an analytical tool in looking at the integration of technology, the characteristics of adopters, and the relation of collaboration to the process. Selected factors investigated included: collaboration, interaction with change agent, and innovativeness. The study revealed that the success of innovation depends mostly on the innovativeness of the individual adopter.

Jacobsen (1998) used diffusion of innovations theory by Rogers’ (1995) as the framework in studying adoption patterns and characteristics of seventy-six faculty from two large North American universities, who integrate computer technology for teaching and learning in higher education. Her study used both quantitative and qualitative methods to investigate the differences between early adopter and mainstream faculty in their patterns of computer technology use, computer experience, generalized self-efficacy, participant information, changes to teaching and learning, incentives to integrate technology, barriers to integrating technology, learning about technology, methods for using and integrating technology, and evaluating the outcomes of using technology. Jacobsen’s results showed differences between the two groups in both
computer expertise and total adoption. These results were expected and used to define
the groups. She noted that computer expertise was the most important determinant
factor of adoption. She also noted some other findings: that the groups preferred
different methods for learning about technology, different types of support and training,
and different motivators and impediments to integrating computer technology. Jacobsen
(1998) concluded that colleague-supported training was a viable way to encourage
diffusion of computer technologies.

Another study by Fusayil (2000) investigated to what extent and how faculty
members of Ohio University use the Internet in their work. Utilizing quantitative
(survey) and qualitative (interviews), the study found that 98.8% of faculty members
use e-mail and 86.8% use Web. There were no differences in the use of the Internet for
research, communication, and instruction by discipline or by years of teaching
experience. There were significant differences in the use of the Internet for research.
Main campus faculty used the Internet more for research than regional campus faculty.
Results from interviews supported the survey results with regard to the use of the
Internet by faculty members. Also, interview data revealed some benefits and barriers of
using the Internet by faculty members. The benefits were divided into three categories:
better communication with colleagues and students, ease of use, and ability to work
anytime and anyplace. On the other hand, the barriers were: time, availability and
access, and training. Technical support was not considered a problem. The researcher
recommendations included: incentives and training for faculty members, and increase
access to the Internet in classrooms.
Albejadi (2000) examined selected factors related to Internet adoption by Ohio public school teachers. While the results showed that there was a low level of use by the participants, significant relationships did exist between the level of use and Internet access, teachers’ attitudes toward the value of the Internet for classroom activities and teachers’ Internet proficiency.

Also using Rogers’ (1995) model, Isleem (2003) curried out a study to determine the level of computer use for instructional purposes by technology education teachers in Ohio public schools. The study also investigated the relationships between the level of use expertise, access, attitude, support, and teacher characteristics. A survey was mailed to all technology education teachers (N = 1170) in Ohio public schools in the 2002–2003 school year, with a return rate of 66%. The findings indicated that technology education teachers had high levels of computer use in mainstream computer uses such as word processing, e-mail, Internet, and classroom management. Also, positive correlations existed between the level of computer use and teachers’ perceived expertise, teachers’ perceived attitude toward computers as tools, and teachers’ perceived access to computers. Multiple regression analysis indicated that independent variables that explain the greatest amount of variation in the level of computer use were teachers’ perceived expertise, attitude, and access. The researcher recommended that teachers need to be given more training to increase their computer use.

**Studies conducted in the Arab world and Saudi Arabia**

(ICT) in education and to explore the relationship of teachers’ attitudes with variables including computer attributes, cultural perceptions, computer competence, computer access, and demographic variables. The researcher employed both quantitative and qualitative methods to collect data on the population of EFL teachers in the city of Hims during the 2003-2004 school year (N=887). A random sample of 326 was surveyed, and 15 teachers were interviewed. His results indicated that participants in his study had positive attitudes toward ICT in education. Although the teachers in this study had positive perceptions of the attributes of computers, they were relatively neutral about the cultural relevance of ICT to Syrian society and schools. The teachers also reported low levels of computer competence, access, and training. He also found significant positive correlations existed between teachers’ attitudes toward ICT and five independent variables, including computer attributes, cultural perceptions, computer competence, computer access, and computer training. His results indicated that 58% of the variance in computer attitude was explained by the independent variables included in the study. The researcher recommended that Syrian policy-makers maintain teachers’ positive attitudes toward ICT, offer them more training opportunities, and take steps to solve the teachers’ concerns about the culturally improper material on the web.

Also, based on Rogers' model for the diffusion of an innovation, Al-Fulih (2002) conducted a study to determine Rogers' attributes of the Internet as perceived by Saudi faculty members for academic purposes and how their perception can be used to predict their adoption of the Internet to enhance their scholarly work. He surveyed 453 faculty members at three selected Saudi universities. He found that only five out of the eight independent variables, relative advantage, image, compatibility, ease of use, and
visibility were significant predictors for the adoption of the Internet. His data showed that using the Internet as a new innovation in Saudi universities is still in the stage of early majority adopters and in the period of rapid growth. The study further identified a number of barriers to adopting the Internet applications for academic purposes among Saudi faculty members. The study found that these barriers included availability of Internet access, quality of access, negative attitudes about the Internet, administrative support, age, English language, Internet and computer experience, fear and computer phobia, firewalls, cost, security, time, and insufficient infrastructure barriers. Based on these barriers, the researcher suggested that the diffusion process of the Internet among Saudi faculty can be grouped into three levels of responsibility: individual duty, organizational duty, and governmental duty.

Al-Kahtani (2001) used a mix of qualitative and quantitative research methods to describe the state of CALL in EFL departments of four universities in Saudi Arabia. Although, faculty members' attitudes toward the use of CALL in EFL instruction were positive, the study revealed that: (a) schools' instructional equipment was obsolete and of limited utility; (b) the majority of EFL faculty did not have adequate access to instructional equipment, computers, software, or the Internet; (c) institutional support for using CALL was very limited; (d) word processing, e-mail, and the World Wide Web were the three most frequently utilized technologies in EFL instruction; (e) social factors affecting the use of CALL were linked to cultural and religious attitudes held by EFL faculty, administrators, and students. The study concluded that the use of computer resources by EFL faculty at the four universities was very limited and superficial, and
the computing and networking facilities that were available were insufficient for supporting state-of-the-art CALL software.

Similarly, Allehaibi (2001) conducted a study attempting to determine the pattern of Internet use by faculty members, answer specific questions about attributes that were associated with the Internet diffusion in Saudi Arabian universities, and identify faculty members' concerns about the Internet technology. He found that the majority of respondents (74.6%) were using Internet technology. Later adopters of the Internet (within two years or less from the data collection date) represented (68.6%) compared to (31.4%) of the respondents reported using the Internet for more than two years. Confirming Al-Kahtani (2001) and Al-Fulih's (2002) results above, Allehaibi (2001) also indicated that the diffusion of Internet technology among faculty members in Saudi universities is at an early stage.

Another study (Amarae'e's, 2003) was conducted to describe the level of computer and Internet integration into mathematics teachers' programs in colleges of education in Saudi Arabia (CESA) and to investigate the need for such integration in those programs. Amaraee'e's (2003) data was gathered from students and professors at three colleges of education in Saudi Arabia (Makkah, Maddina, and Abha) via a questionnaire and interviews. Results of the study indicated that student-teachers use the computer and the Internet for preparatory and administrative tasks, for communication, to be able to assign their students work, to integrate the computer and the Internet into their teaching in the future, and to overcome barriers that may hinder them from accessing and using computers and the Internet in instruction. In addition, all participants acknowledged the
need for technology to prepare teachers to use it in their instruction in CESA programs all over the Kingdom.

Almogbel (2002) carried out a study to explore the attitudes and perceived contributions of faculty, students, and administrators in the colleges of technology in Saudi Arabia about distance education. The researcher surveyed all faculty, students and administrators in various departments of Abha Technical College. The study concluded that the faculty, along with students and administrators, agreed that an investment in distance education would benefit the College. About three-fourths of faculty agreed that there was a need for distance education for some courses offered at the technical colleges. They also showed a greater comfort level with technology than the other students and administrators, but they all showed no fear of technology. All participants agreed that the Internet was the best way to deliver distance education to students.

Similarly, in the technical college context, Almusalam (2001) used Rogers’ diffusion theory in his study of the use of computer technologies for professional tasks by business and administration teachers in Saudi Arabian technical colleges. His study examined the level of computer use and the relationship between the level of computer use and teachers’ perceptions of computer technologies, teachers’ perceived proficiency with computer technologies, administrative support for teachers using computer technologies, colleague support for teachers using computer technologies, and perceived access to computer technologies. He found that there was a low level of use of computer technologies within professional tasks by the participants. Also, he found that proficiency with computer technologies, administrative support for teachers
wanting to use computer technologies, and the teachers’ previous experience with computers were influential factors in the low level of technology integration.

Al-Abdulmenem (2000) conducted a study on the effects of using the Internet as an educational tool in the colleges of technology in Saudi Arabia. The study intended to find out what are the uses of the Internet for instruction in colleges of technology and the barriers that limit the use of the Internet in these settings. Participants included faculty members, administrators, and students at three main colleges Riyadh, Jeddah, and Dammam. Participants all agreed that the Internet is useful as a tool for learning and research, for communication, for increasing their knowledge and learning skills, and for exchanging information and culture from all over the world easily and quickly. Also, participants identified the following limitations to the use of the Internet in instruction: (1) Internet cost; (2) slow connection; (3) unorganized and unreasonable of content by the government; (4) inappropriate content; (5) insufficient Internet infrastructures; (6) insufficient number of computers, computer labs, and access to the Internet; (7) time limitation; (8) insufficient number of techno-experts; (9) inappropriate use of the Internet; (10) and lack of resources and support. The researcher suggested the need for further research in this dynamic setting (colleges of technology) to explore and solve such limitations from hindering the use of the Internet for instruction. Al-Abdulmenem’s (2000) conclusions were similar to other researchers (i.e., Al-Fulih, 2002; Al-Kahtani. 2001, Allehaibi, 2001); the use of the Internet in the educational system in Saudi Arabia is still in its developmental and early stage.

An evaluative study of the teaching of English as a Foreign Language at the Junior College of Technology, Buraydah (CTB), Saudi Arabia was carried out by Alfallaj
(1998). This study examined the needs and goals of CTB students and companies that might hire them, as well as the main characteristics of teaching English as a foreign language at the CTB. Besides students currently attending school, participants also included ten teaching assistants, eleven employees who graduated from the CTB, five English teachers, and two Administrators. The major findings included: (a) the current English curriculum was not based on the needs of the students and the companies that hire them, nor was it based on the goals of the students or those of the CTB; (b) and the materials and media used at the CTB (limited to the listening lab) were not suited to the students. The researcher also found that the major characteristics of teaching English at the CTB included: the exclusive use of Arabic, passiveness of students, lack of communicative teaching, focus on grammar, focus on memorization of compositions and language structure, little use of audio-visual media, and teacher-centered classroom.

Selected Factors Related to Internet Use Employed in this Study

In this study, the dependent variable was the innovation: Internet use by EFL teachers. Based on the literature, the following independent variables were believed to show some correlation with the Internet adoption by EFL teachers in the context of Saudi Arabia.

Teachers’ Perceived Access to the Internet

Access to the Internet has been found to be systematically related to the Internet use. The importance of having convenient access to the Internet was supported by a number of studies. Blankenship (1998) found that access was the second most significant factor related to the use of computers in the classroom. Albejadi (2000), Almusalam (2001),
and Porter (1997) found access to have a significant relationship with the low level of use of the Internet. Similarly, Fusayil (2000) reported that access was one of the barriers that affected faculty members’ use of the Internet and computer technologies. Also, Mubireek (2001) found a statistically significant moderate, positive relationship between access to the Internet at home and use of the Internet by ESL teachers at The Ohio State University.

In his discussion of important characteristics, Rogers (1995) went beyond access to an innovation and discussed trialability and observability. For an innovation to be readily adopted, it must afford experimental use and observable results. The cost of buying, maintaining and updating computer equipment and computer programs presents significant problems in the field of education where budgets are often restricted (Fusayil, 2000). In the United States, for example, providing access to computer technologies in education has received numerous initiatives from the federal government during the last two administrations. The U.S. Department of Education reported:

There has been widespread introduction of computers into the schools in recent years. In 2000, the average public school contained 110 computers…The proportion of instructional rooms with Internet access increased from 51 percent in 1998 to 77 percent in 2000. About 98 percent of schools had access to the Internet in 2000 (U.S. Department of Education, NCES, 2002b, p. 487).

However, access was more than simply the availability of computers. Access also involved connectivity and up-to-date software, as well as classroom layouts that allow for wiring and computer desks (Almusalam, 2001). According to Heaviside, Riggins &
Farris (1997), proper access requires that computers and peripherals are located where everyone has access as needed. They also noted that limited locations from which teachers can access the technologies are a barrier to teacher use and it limits the ways Internet can be used for instructional purposes.

This factor, teachers’ perceived access to computers, includes information on EFL teachers’ view of access to the Internet for instructional purposes, which will be analyzed in relation to their level of adoption.

**Teachers’ Perceived Expertise in Internet Use**

According to Rogers (1995), the knowledge stage of the innovation-decision process occurs when the potential adopter not only learns of the innovation’s existence, but also understands how it functions. Almusalam (2001) and Mubireek (2001) termed this understanding of how an innovation functions “proficiency”. Technology has redefined and expanded the knowledge and proficiencies needed by teachers today—educators must not only master the concepts and principles of their specific subject areas, but also acquire the experiences and proficiencies necessary to utilize modern technology (Hoyt, 1997).

Blankenship (1998) included expertise in his exploration of training by asking the participants in the survey to classify their computer expertise. His study revealed that training was the selected factor most significantly related to the use of computers in the classroom by K-12 teachers. Almusalam’s (2001) study supported the importance of proficiency or expertise; it showed the highest correlation to computer adoption by Saudi Arabian business education teachers. Also, Mubireek (2001) found that Internet
proficiency was an important factor related to ESL teachers' adoption of the Internet at The Ohio State University.

Jacobsen’s (1998) study revealed “EAs (early adopters) report higher levels of expertise than MF (mainstream faculty) for 38 (86%) of the 44 types of computer software and tools, and earlier use in teaching for 27 of the 44 types of measured types of instructional technology” (p. 163). In addition, “Findings comparing faculty expertise with the year that faculty first used the software or tool in their teaching indicate that faculty tend to develop a level of personal expertise with a particular computer technology before attempting to integrate it into their teaching.” (p. 69)

This factor, EFL teachers’ perceived expertise in Internet use, included information on teachers’ view of the relative advantage, compatibility and complexity of Internet for instructional purposes, which will be analyzed in relation to their level of adoption.

**Teachers’ Perceptions of the Internet as a tool for Instruction**

Rogers (1995) wrote that if innovation diffusion is to occur, the innovation must be perceived as having a relative advantage—of being better than the practice it replaces. For example, if Internet use is to be adopted by EFL teachers, then the teachers must have perceived the innovation as having some relative advantage. Exposure to an innovation will have little effect if an individual does not perceive the innovation as relevant to the individual’s needs and as being consistent with the individual’s attitudes and beliefs (Jacobsen, 1998). Thus, the exposure of EFL teachers to the Internet for instructional purposes would be of little value if teachers did not perceive the technologies as being of value in teaching (Almusalam, 2001).
Blankenship’s (1998) study revealed perceptions to be the factor second most related to computer use in the classroom as did Albejadi (2000), who found teachers’ perceptions toward the value of the Internet for classroom activities to have a significant relationship with the low level of use. Also Mubireek (2001) found that ESL teachers' perceptions toward using the Internet to be positive and was the second factor to affect ESL teachers' use of the Internet at The Ohio State University.

This factor, EFL teachers’ perceptions toward the Internet for instructional purposes, includes information on EFL teachers’ view of the relative advantage and compatibility of computers for instructional purposes, which will be analyzed in relation to their level of adoption.

**Selected Characteristics of EFL Teachers**

As mentioned earlier, Rogers (1995) identified common characteristics of individuals and related them to adopter categories. Blankenship (1998) included age in his selected characteristics of teachers and found that it was the most significant characteristic. Al-Fulih (2002) reported that his study’s quantitative and qualitative data showed age as an influential factor in Internet adoption for instruction. He reported that Internet users tended to be younger; older faculty members usually face serious difficulties in integrating the Internet in instruction than younger ones.

Jacobsen (1998) confirmed the existence of adopter categories in the use of computer technology in education and then stratified her analysis to further examine participant information (characteristics) in relation to all other variables. Hoerup’s (2001) major finding that successful adoption of an innovation depends mostly on the innovativeness (determined by adopter category) of individual adopters provided further
evidence that insight into innovativeness of adopters is needed. Almusalam (2001) found that the most positive characteristics of business education teachers were highest academic degree attained and experience using computers.

This factor, selected characteristics of EFL teachers, includes information on teachers’ demographics, and provides the opportunity to study the relationships between the teachers’ characteristics and their perceptions of using the Internet.

Conclusion

In summary, this chapter grounded the current study within the related literature to address the need for this study. The purpose of the study was to understand the use of the Internet by EFL teachers at the colleges of technology in Saudi Arabia, especially for instructional purposes. In addition, the study explored the relationships between EFL teachers’ use of the Internet and selected factors regarded by research to have effect on that use. This chapter started by defining the concept of the Internet and presenting information about its history and spread. After that, the impact and influence of the Internet innovation in education was discussed in the Arab world as well as in the Saudi educational system. A summary of Rogers’ model used in this study was presented followed by related literature to set the theoretical ground needed for the current study.

What follows is Chapter Three, where the research methodologies used to accomplish the study’s main purpose and objectives are presented.
CHAPTER 3

METHODOLOGY

Purpose of the study

The purpose of this study was to describe the level of use of the Internet by EFL teachers in the colleges of technology in Saudi Arabia. Additionally, this study investigated the relationships between the level of the Internet use and access to the Internet, expertise in the Internet use, teachers’ perceptions toward the Internet as a tool for instructional purposes, and selected characteristics of EFL teachers in the colleges of technology in Saudi Arabia. While attempting to provide a much needed look at how EFL teachers in Saudi Arabia feel about and use the Internet for instructional purposes, the study also aimed, at a broader level, to enlarge understanding of the use of the Internet in the EFL context rather than the more commonly studied ESL context.

Design of the Study

A descriptive-correlational research design was used to accomplish the objectives of the study and to predict the level of Internet use by EFL teachers in the colleges of technology in Saudi Arabia. Descriptive research is appropriate when a problem does not lend itself to controlled inquiry and experimentation (Best and Kahn, 1993), as was
the case at the beginning of this study in Saudi Arabia. Hence, because the Internet as a teaching tool was in an early stage as an innovation in the Saudi Arabian context, descriptive data was particularly appropriate. Descriptive statistical techniques (frequencies, percentages, means, and standard deviation) were used to describe the level of Internet use with respect to several selected factors: access, expertise, perceptions, and teacher characteristics. Pearson’s Product Moment, Point bi-serial, and Eta correlation coefficients were used to determine the relationships between the selected factors and the level of Internet use. Furthermore, multiple regression analysis was used to explain the degree to which the variables were predictive of the level of Internet use.

Creswell’s dominant-less-dominant model was utilized. A dominant quantitative approach was followed; through which data was assembled by an instrument developed for the purpose of this study. The less dominant qualitative method consisted of interviews with a random sample of 15 EFL teachers from the population of EFL teachers at colleges of technology in Saudi Arabia. The use of both research methods provided a more comprehensive picture of the participants’ use of the Internet (Rudestam & Newton, 1992) than would one data method. Numerical data generated by the quantitative methods created a broad picture of the research questions under investigation, while the qualitative measures added texture to the study by allowing closer examination of a number of issues arising from the quantitative data and areas that need more explanations.
Population of the study

The study’s population was all EFL teachers (N=203) at four main colleges of technology in Saudi Arabia located in the cities of Riyadh, Abha, Jeddah, and Dammam. These four major colleges of technology possessed the institutional characteristics necessary for this study, such as the size of the available research population and the geographical distribution of EFL teachers. Regarding the size of the research population, these four colleges represent the largest campuses among all colleges of technology in Saudi Arabia. Thus, they constitute the largest concentration of the desired population. Together they employ approximately 64% of all EFL teachers at all colleges of technology (GOTEVOT, 2004). Another important reason for their selection was that these four colleges represent different geographical domains in Saudi Arabia. This helped to ensure that the conditions present in one location did not dominate the study and limit the effectiveness of the results.

An updated list of all EFL teachers within the four main colleges of technology during the 2004-2005 academic year was obtained through a personal contact within GOTEVOT. Frame error was controlled by ensuring the frame contains an up-to-date list of all ESL teachers. Selection error was controlled by checking for duplication of names on the list.

Instrumentation

As described earlier, a questionnaire (quantitative treatment) and interviews (qualitative treatment) were used to gather data to investigate the purpose and objectives of the study. Questionnaires are known for their ability to gather a large amount of information about the target population in a timely and processable manner (Dornyei,
2003). The questionnaire used in this study was adapted, with slight modifications, from similar studies conducted by Mubireek (2001) and Al-Fulih (2002). Mubireek’s (2001) study was on ESL teachers’ adoption of the Internet at The Ohio State University, and Al-Fulih’s (2002) was on university faculty members’ use of the Internet for instruction in Saudi Arabia. While the questionnaire used in this study was adopted from these previous studies, its items were also grounded in the literature review of studies related to the adoption of computers and the Internet in education and on Rogers’ diffusion of innovation theory (Rogers, 1995), as discussed in Chapter Two.

The questionnaire consisted of five parts (see Appendix A). Part One examined EFL teachers’ use of the Internet under three domains of use, for instructional, professional development, and personal purposes by asking the participants the same seven questions under each domain of use. The questions represented the Internet services which are most likely essential to properly use the Internet, and they were measured on a five-point Likert-type scale ranging from 0 (Never Use) to 4 (Very Often). Part Two had two sections to measure the level of access to the Internet. Section one had five items representing the places where most likely participant would have access to the Internet (home, office, classroom, computer lab, and Internet café). The second section consisted of seven items that represented factors that were believed to limit teachers’ Internet access. All twelve questions were also measured on a five-point Likert-type scale from 0 (Never Use) to 4 (Very Often). Part Three required participants to provide information about their perceived computer and Internet expertise. It contained sixteen questions (7 on computer and 9 on Internet applications) that were designed to gather data about the participants’ level of Internet expertise, including computers, using a five-point Likert-
type scale also from 0 (Never Use) to 4 (Expert). Part Four included twenty four questions to determine participants’ perceptions of the Internet as a tool for instructional purposes. Also, here a five-point Likert-type scale was employed ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Finally, Part Five focused on gathering demographic information about the participants, such as age, income, and level of education. This last part also included an item that requested participants to provide contact information if they were willing to participate in the follow-up interview phase of the study.

Phone interviews were conducted with a subset of 15 participants randomly selected from those who provided their contact information. Interviewees were asked three questions (Appendix C) to gather qualitative data about their positive perceptions of the use of the Internet in instruction and the barriers that limit such use. A standardized open-ended interview strategy was used in which participants were asked the same guided interview questions. This type of interview, as explained by Fraenkel & Wallen (2000), was appropriate for this study because generally it: assists the researcher to compare responses of participants, retrieves complete data about each participant, reduces interviewer effects and bias, and facilitates organization and analysis of the data (p. 511).

Translation of Instruments

The questionnaire and interview questions were developed in English and then translated into Arabic to ensure that Saudi EFL teachers had complete comprehension of the instruments used in this study. Although the participants, as English teachers, were familiar with English, they were surveyed and interviewed in their first language.
(Arabic), in that gathering information from subjects in their first language might generate more in-depth results by relieving them of any possible anxiety linked to speaking the target language (Mullis et all, 1996). Also, this method was thought to elicit deeper and more revealing responses from participants who felt more comfortable being interviewed in Arabic, their native language.

To achieve the best possible semantic and conceptual accuracy in translation, a forward and back translation method was used (Harkness and Schoua-Glusberg, 1998). Different versions of English and Arabic translations were compared, and differences in meaning were resolved through discussion (Brislin, 1970; McGorry, 2000). In the discussion session, two translators met with the researcher to resolve any translation conflicts.

Additionally, in accordance with the European Social Survey (ESS) guidelines in choosing survey translators, the researcher set the criteria for translator selection, assuring that the translators had the cultural and linguistic knowledge needed to translate appropriately in the different varieties of the Arabic language (Acquadro et al, 1996; McKay et al, 1996). Thus, a bilingual expert with mastery of both Arabic and English translated the study's instruments from English to Arabic, and another expert did the reverse. The first translator obtained a PhD in the field of teaching EFL via information technology from The Ohio State University and has four years of professional experience in translation between Arabic and English. The second translator was a PhD candidate who was majoring in computer science at The Ohio State University and who had extensive knowledge of computer terminology in Arabic and English.
Validity and Reliability

A panel of experts was selected to establish face and content validity of the instruments of this study. The panel of experts consisted of eight individuals (Appendix F) who had experience in various fields related to the instruments, content. The panel included a professor of foreign and second language education, a professor of research methodology and instrumentation, a professor of Arabic and Applied Linguistics, a professor of information and computer technology, as well as experts in translation between Arabic and English who examined both versions of the instrument (Arabic and English). Feedback from the panel of experts was used to make modifications and clarifications prior to conducting the pilot study.

In addition, due to the technical computer and Internet terminology used in the questionnaire, face and content validity of the Arabic version were field tested by six university faculty and Arab students on The Ohio State University campus to measure appropriate readability, comprehensibility, and clarity of the instrument for non-technical individuals. A few minor changes in the Arabic version were made to account for novice participants before conducting the pilot study. The Arabic version of the questionnaire was used in the main study.

Reliability of survey instrument used in this study was established using the pilot study data. Twelve subjects were selected from a population similar to that used in the main study. These subjects were all EFL teachers in the College of Telecom and Electronics (which is also considered one of the colleges of technology) in Riyadh, Saudi Arabia. Cronbach’s Alpha was used as a measure of internal-consistency. Cronbach’s Alpha estimates internal-consistency reliability by estimating how items of
an instrument relate to each other and to the total instrument (Gay and Airasian, 2000). Cronbach’s alpha was calculated via the SPSS.12 statistical package. Obtained Cronbach’s alphas from the pilot study and the actual study are reported in table 3.1.

Based on the pilot study, a number of changes were made to the survey instrument’s first four parts in order to increase their reliability in the main study. The changes included adding eleven items to the Use of the Internet Scale, adding seven to the Access Scale, omitting twelve from the Expertise Scale, and modifying/adding nine items to the Perceptions Scale. In the actual study, the alpha coefficients for the four main scales were: use of the Internet = .91, access = .72, expertise = .91, and Perceptions = .92.

<table>
<thead>
<tr>
<th>Scale</th>
<th>No. of Pilot Study Items</th>
<th>No. of Main Study Items</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pilot Study (n = 12)</td>
</tr>
<tr>
<td>Use of the Internet</td>
<td>10</td>
<td>21</td>
<td>.86</td>
</tr>
<tr>
<td>Access</td>
<td>5</td>
<td>12</td>
<td>.71</td>
</tr>
<tr>
<td>Expertise</td>
<td>28</td>
<td>16</td>
<td>.91</td>
</tr>
<tr>
<td>Perceptions</td>
<td>15</td>
<td>24</td>
<td>.91</td>
</tr>
</tbody>
</table>

Table 3.1: Reliability of Pilot and Main Study

Data Collection

This study used quantitative (the survey) as well as qualitative (the interviews) data collection methods. As some researchers recommend (e.g., Rudestam & Newton, 1992), the combination of qualitative and quantitative methodologies is sometimes better than
using either methodology alone. Data collection procedures took place during the first semester of the 2004-2005 academic year, which started September, 11, 2004 and ended January, 12, 2005, as defined by the Saudi Arabian educational calendar.

Before data collection, the researcher established prior contacts with authorities in GOTEVOT and in each of the four colleges of technology. Personal contacts were also established with all deans and chiefs of general studies departments as well as supervisors who were in charge of EFL sections. In addition, a main contact person (a close friend, a teacher or administrator who worked at the same school) was assigned to be in charge of all communications between people of authority and participants on one side and the researcher on the other side. Furthermore, information was gathered via personal contacts about EFL teachers including names, phone numbers, and e-mails (in case available).

Approval for the study was obtained from the Institutional Review Board (IRB) of The Ohio State University’s Human Subjects Review Committee (Appendix G). Also, the researcher was granted access to the research sites by the related departments in the GOTEVOT (Appendix H). The data were collected in two stages. In stage one, the questionnaire was administered to the 203 participants following Dillman’s (1978) recommendations: a letter of recruitment, a letter of informed consent, and a return envelope accompanied the questionnaire. Letters of support by the Saudi GOTEVOT main office (Appendix C) and the deans of the colleges were used to access the population.

The combination of advance-notice letter, initial mailing, and reminder notice letter resulted in a 91.1% response rate. The advance-notice letter of data collection for EFL
teachers at Colleges of Technology (N=203) was sent on December 10, 2004 personally by the researcher. On December 17, 2004, a second mailing was sent officially by the main GOTEVOT office in Riyadh to the four colleges of technology, to be distributed by heads of departments to all EFL teachers in their colleges. The department heads were instructed by authorities in the GOTEVT to ensure that all English teachers filled out and returned questionnaires to them. Check lists and signatures were used to monitor questionnaire return progress. To further encourage participation, teachers received a gift incentive (wallet) in the second step. A note was enclosed thanking the participants for completing the questionnaire and encouraging them to accept the enclosed gift as a token of appreciation from the researcher. These procedures were necessary to prevent a low response rate, given that the colleges were about to close for the final exams and then for the Winter break. On December 31, 2004, a reminder notice letter was faxed (and phone calls were made as well) to the department heads to be shared with all EFL teachers. The purpose was to request a response from those who had not completed the questionnaire and to thank those who had. On January 7, 2005, all teachers who had not yet responded were contacted personally by phone to explain the importance of their participation and to urge them to complete the questionnaire.

The last day of the first semester of the academic calendar, January 12, 2005, was set as a final return deadline for collecting the questionnaires. However, due to late arriving mail, 36 questionnaires were received after this date, producing a total number of 185 completed questionnaires out of the 203 that had been sent out (a response rate of 91%). Table 3.2 presents information about the responses, including the fact that twenty
questionnaires out of the 185 were deemed unusable for data analysis because they were incomplete, representing a valid response rate of 81%.

<table>
<thead>
<tr>
<th></th>
<th>Distributed</th>
<th>Returned</th>
<th>Unreturned</th>
<th>Usable</th>
<th>Unusable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Questionnaires</td>
<td>203</td>
<td>185</td>
<td>18</td>
<td>165</td>
<td>20</td>
</tr>
<tr>
<td>Percentage</td>
<td>100</td>
<td>91.1</td>
<td>8.8</td>
<td>81.2</td>
<td>9.8</td>
</tr>
</tbody>
</table>

Table 3.2: Response Rate and Percentages

With an overall response rate of 91.1% and the fact that a response rate in the nineties percentage range is considered an excellent rate (Altschuld et al, 1992), it was eventually decided that responses from the other 18 teachers were not essential, and no further attempts to obtain their questionnaires were made. Furthermore, the high response rate assumes that the influence of the low non-response rate (8%; n=18) on the validity of the data is relatively small and in all probability will not affect the results in any meaningful way (Albirini, 2004). Further support for the value of the response rate in this study can be found in Borg and Gall (1989), Katona (1999), and Kerlinger (1979), who also note the value of a study with a response rate as high as the one achieved in this study. Furthermore, Standard 4-4-1 of the National Center for Education Statistics (NCES) states that only surveys with a response rate of less than 85 percent must be evaluated for the impact of nonresponse bias before any data analysis can be conducted (NCES, 2005). Since the overall return rate for this study was 91.1%,
it is likely that the small percentage of non-respondents will not alter the findings of the research, and that the results of the study can be generalized to the population of all EFL teachers at Saudi Arabia’s four main colleges of technology (in Abha, Riyadh, Jeddah, and Dammam).

In stage two, a random sample of 15 teachers out of 84 (51%) who provided their consent to participate in follow-up interviews were interviewed via phone. During the first contact (on 19th and 20th of January, 2005), the researcher reintroduced himself and his research topic, explained the purpose of the interview, requested participation in the interview, and set up appointments for the interviews (Glesne & Peshkin, 1992). The second contact (from 26th to 31st of January, 2005) was dedicated to the interviews themselves. All interviews lasted between 10-20 minutes, and all were audiotaped and then immediately coded. The interviewees were asked three basic questions: Do you advocate the use of the Internet for educational purposes? Which factors, if any, do you think limit your adoption of the Internet in EFL instruction? How do you think EFL teachers at the Colleges of Technology can make appropriate adoption of the Internet for EFL instruction?

**Data Analysis**

Quantitative data (survey data) were analyzed using SPSS.12 for Windows and reported using appropriate measures and procedures. Table 3.3 shows the research questions in relation to statistical methods that were used to answer them.
<table>
<thead>
<tr>
<th>No.</th>
<th>Research Question</th>
<th>Analysis Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>What is the level of use of the Internet by EFL teachers in the colleges of technology in Saudi Arabia?</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>2.</td>
<td>What are personal characteristics of EFL teachers in the Colleges of Technology in Saudi Arabia?</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>3.</td>
<td>What is the level of EFL teachers’ perceived access to the Internet as well as limitations of that access?</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>4.</td>
<td>What is the level of teachers’ perceived expertise in computer and Internet use?</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>5.</td>
<td>What are EFL teachers’ perceptions toward the Internet as a tool for instruction?</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>6.</td>
<td>What is the relationship between teachers' level of the Internet use on one hand and, on the other, their access to the Internet, expertise in the Internet use, perceptions of the Internet, as well as their personal characteristics?</td>
<td>Pearson's, Point bi-serial, and Eta correlation</td>
</tr>
<tr>
<td>7.</td>
<td>Which independent variables explain the greatest amount of variance in the level of the Internet use by EFL teachers in colleges of technology in Saudi Arabia?</td>
<td>Multiple Regression</td>
</tr>
</tbody>
</table>

Table 3.3: Statistical Analysis Procedures Used to Answer Research Questions

Means, standard deviations, range, frequency counts, and percentages were used to describe teachers’ level of use of the Internet, personal characteristics, teachers’ access to the Internet and factors limiting that access, computer and Internet expertise, teacher’s perceptions. To describe relationships, Gay and Airasian’s (2000)
recommendations were followed, in which correlations (using Pearson, Point bi-serial, and Eta) were first performed to identify independent variables that individually correlate with the level of use of the Internet. These variables were used in the multiple regression equation to make a more accurate prediction of the dependent variable and to show the proportion of variance in the dependent variable explained by the selected independent variables.

The alpha level of .05 was set a priori. Davis’ (1971) conventions for describing measures of association were used to interpret the magnitude of all relationships reported in the study, as shown in table 3.4.

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>.70 or higher</td>
<td>Very strong association (relationship)</td>
</tr>
<tr>
<td>.50 to .69</td>
<td>Substantial association</td>
</tr>
<tr>
<td>.30 to .49</td>
<td>Moderate association</td>
</tr>
<tr>
<td>.10 to .29</td>
<td>Low association</td>
</tr>
<tr>
<td>.01 to .09</td>
<td>Negligible association</td>
</tr>
</tbody>
</table>

Table 3.4: Davis’ (1971) Principle to Determine the Strength of Correlations

As for qualitative data analysis, all interviews were audio tape-recorded, transcribed, coded, and examined using procedures for analyzing qualitative data as described by Miles and Huberman (1994). Fourteen (14) interviews were conducted in Arabic and
one, with a non-Arabic speaker, was in English. After coding the data using NUDIST (N6), relevant quotations were grouped with their related codes and then translated into English by the researcher. Additionally, translation was verified with a bilingual expert who had sufficient translation experience between Arabic and English. To ensure the anonymity of the respondents, pseudonyms were used to identify individual respondents.

Summary

The purpose of this study was to determine the level of Internet use by EFL teachers in the colleges of technology in Saudi Arabia. Additionally, the study examined the selected factors related to that use: access, expertise, perceptions, and teacher characteristics. Data collection involved two procedures, a mailed survey instrument designed to measure the level of Internet use and the selected factors, and follow-up telephone interviews. The data analysis employed descriptive statistics for quantitative data and appropriate qualitative analysis methods for interviews.

With regards to how data is presented, Chapter Four is used to separately report the quantitative and qualitative data results. Chapter Five is where these data sources are combined, particularly in relationship to the study’s research questions. Finally, conclusions and recommendations of the study are presented in Chapter Five as well.
CHAPTER 4

RESULTS AND DATA ANALYSIS

The purpose of this study was to explore the use of the Internet by EFL teachers at the main Colleges of Technology (CT) in Saudi Arabia. The chapter is organized in two parts. Part one presents the quantitative data, which are derived from the questionnaire, and part two presents the qualitative data, which are derived from the interviews.

Part one of this chapter begins with information about the teachers’ personal characteristics. The second section presents descriptive statistics concerning the teachers’ perceived level of use of the Internet. The third section presents descriptive statistics regarding teachers’ perceived access to the Internet. The fourth section presents descriptive statistics related to teachers’ perceived expertise in the use of computers and the Internet. The fifth section presents descriptive statistics with respect to teachers’ perceptions of the use of the Internet. The sixth section employs Pearson and Eta correlations to explore the relationship between level of use of the Internet and the study’s independent variables. The seventh section uses multiple regression analysis to examine the proportion of variance in the dependent variable relative to the independent variables. In addition, part one presents a synthesis of open-ended written

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responses provided in the questionnaire. Part two of the chapter offers analysis of follow-up interviews with a subset of survey participants.

**Part One: Survey Results**

**Descriptive Summary of Selected Teachers’ Personal Characteristics**

Teachers’ characteristics are presented in terms of demographic information, including: age; income; level of education; country from which the highest degree was attained; citizenship; amount of teaching, computer, and Internet experience; preferred teaching method; college location; background in Internet training. These results are presented in Table 4.1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>20-29</td>
<td>86</td>
<td>52.1</td>
</tr>
<tr>
<td></td>
<td>30-39</td>
<td>62</td>
<td>37.6</td>
</tr>
<tr>
<td></td>
<td>40-49</td>
<td>14</td>
<td>8.5</td>
</tr>
<tr>
<td></td>
<td>50&gt;</td>
<td>3</td>
<td>1.8</td>
</tr>
<tr>
<td>Income</td>
<td>5,000 &lt;</td>
<td>34</td>
<td>20.6</td>
</tr>
<tr>
<td></td>
<td>6,000 - 10,000</td>
<td>113</td>
<td>68.5</td>
</tr>
<tr>
<td></td>
<td>11,000 - 15,000</td>
<td>18</td>
<td>10.9</td>
</tr>
<tr>
<td></td>
<td>16,000 &gt;</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Education</td>
<td>PhD</td>
<td>10</td>
<td>6.1</td>
</tr>
<tr>
<td></td>
<td>Masters</td>
<td>21</td>
<td>12.7</td>
</tr>
<tr>
<td></td>
<td>Bachelors</td>
<td>131</td>
<td>79.4</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>3</td>
<td>1.8</td>
</tr>
<tr>
<td>Country from which highest degree was attained</td>
<td>SA</td>
<td>120</td>
<td>72.7</td>
</tr>
<tr>
<td></td>
<td>USA</td>
<td>23</td>
<td>13.9</td>
</tr>
<tr>
<td></td>
<td>UK</td>
<td>3</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>19</td>
<td>11.5</td>
</tr>
<tr>
<td>Citizenship</td>
<td>Saudi</td>
<td>147</td>
<td>89.1</td>
</tr>
<tr>
<td></td>
<td>Non-Saudi</td>
<td>18</td>
<td>10.9</td>
</tr>
</tbody>
</table>
Teaching Experience  
1- 5 years 85 51.5  
6-10 years 42 25.5  
11-15 years 26 15.8  
16+ years 12 7.3  
Computer Experience  
1 < year 11 6.7  
2 - 5 years 84 50.9  
6 - 9 years 51 30.9  
10 > years 19 11.5  
Internet Experience  
1 < year 17 10.3  
2 - 5 years 109 66.1  
6 - 9 years 35 21.2  
10 > years 4 2.4  
Internet Training  
No 117 70.9  
Yes 48 29.1  
Old Teaching Method preference  
No 143 86.7  
Yes 22 13.3  
College Location  
Riyadh 54 32.7  
Abha 45 27.3  
Jeddah 37 22.4  
Dammam 29 17.6  

Table 4.1: Teacher characteristics

Summarizing some key results in Table 4.1, the majority of teachers (89%) were between 20 and 39 years old, while teachers' monthly income in Saudi Riyals (SR) was in the range of 6,000 to 10,000 SR a month (68.5%; n=113), that is, 1,600 to 2,600 in US dollars. Most (79.4%; n=131) of the respondents held a bachelor’s degrees; 12.7% (n=21) had Masters’ degrees, and only 6.1% (n=10) held a Doctoral degree. More than two thirds of the respondents (72.7%; n=120) obtained their degrees in Saudi Arabia. The vast majority of the respondents (89.1%; n=147) were Saudi nationals.
Participants’ responses in the experience domains (teaching, computer, and internet) were particularly interesting. More than half, 51.5% (n=85), of them were in their first five years of teaching, 25.5% (n=42) had 6 to 10 years of experience, 15.8% (n=26) had 11 to 15 years, and only 7.3% (n=12) had 16 and more years of teaching experience. In general, then, this was a moderately experienced population with respect to teaching. As for computer experience, it was found that just more than half of them (50.9%; n=84) had two to five years of such experience, while 30.9% (n=51) had six to nine years of computer experience. Also worth noting is that only 6.7% (n=11) had virtually no computer experience, i.e., a year or less. As that experience related to the domain of the Internet, most of the respondents (66.1%; n=109) had two to five years of such experience, and a little less than one quarter (21.2%; n=35) had between six to nine years of Internet experience. With just 10.3% (n=17) reporting a year or less of Internet experience, this could be said to be a group of experienced users of the Internet. Interestingly, though, most (70.9%; n=117) reported that they had had no Internet training, while 29.1% (n=48) of the teachers had between two hours to two months of such training. In other words, a significant portion of the participants had taken the initiative to teach themselves how to travel the Internet.

Regarding other noteworthy teacher information, traditional teaching methods such as grammar translation and drills were preferred by only twenty two (13.3%) of the participants, while the majority (86.7%; n=143) opted for new methods of language teaching (e.g., interactive, communicative, and social). As for college location, no school dominated, with the distribution ranging from about one third (32.7%; n=54) in Riyadh to 17.6% (n=29) in Dammam.
Use of the Internet by EFL Teachers at Colleges of Technology (CT)

Participants were asked to respond to 21 Likert-type items measuring their perceived level of use of the Internet within three main domains (seven items per domain): for instructional purposes, for professional purposes, and for personal purposes. Level of use of the Internet by these EFL teachers is represented by a mean score based on a 5-point response scale ranging from 4 (Very Often) to 0 (Never Use). Thus, the higher the mean score, the more use there was of the Internet. As shown in Table 4.2, the summated mean was 1.6, indicating that, on the whole, the EFL teachers in the Colleges of Technology reported limited use of the Internet.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Level of Use of the Internet</th>
<th>Percent (%)</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
</tr>
<tr>
<td>For instructional purposes</td>
<td>37.6</td>
<td>32.1</td>
<td>20</td>
<td>8.5</td>
</tr>
<tr>
<td>For professional purposes</td>
<td>12.1</td>
<td>32.1</td>
<td>34.5</td>
<td>18.8</td>
</tr>
<tr>
<td>For personal purposes</td>
<td>7.3</td>
<td>23.6</td>
<td>38.2</td>
<td>25.5</td>
</tr>
<tr>
<td>Overall Level of Use</td>
<td>6.7</td>
<td>44.2</td>
<td>35.8</td>
<td>12.1</td>
</tr>
</tbody>
</table>

Scale: 0= Never, 1= Rarely, 2= Sometimes, 3= Often, and 4= Very Often

Table 4.2: Distribution of Mean Scores on the Level of Use of the Internet Scale

As for the use of the Internet under each of the three domains, as shown in Table 4.2, the lowest summated mean (1.0) was for teaching, indicating that the teachers rarely used the Internet for instructional purposes. The summated mean for professional development purposes, 1.7, shows a slight increase over instructional use, but it also
signifies that the teachers were not much inclined to turn to the Internet to achieve such
development. The highest summated mean, 2.0, was for personal purposes. This
reveals, on the one hand, that the Internet was of greater personal than professional
appeal to the participants, but, on the other, that the appeal was still somewhat limited.

Looking further at Internet use among the participants, Table 4.3 shows percentages
of frequencies and mean scores for Internet services used by EFL teachers at CT for
instructional, professional, and personal purposes. As shown in the table, the most often
used Internet services on all domains were the World Wide Web and e-mail. The least
used Internet resources were USENET Newsgroups and File Transfer Protocol (FTP).
### Frequency of Use for Instructional Purposes

<table>
<thead>
<tr>
<th>Internet Service</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail</td>
<td>38.2</td>
<td>18.8</td>
<td>20.0</td>
<td>9.1</td>
<td>13.9</td>
<td>1.4</td>
<td>1.43</td>
</tr>
<tr>
<td>WWW</td>
<td>24.2</td>
<td>19.4</td>
<td>21.2</td>
<td>15.8</td>
<td>19.4</td>
<td>1.9</td>
<td>1.45</td>
</tr>
<tr>
<td>USENET</td>
<td>55.2</td>
<td>20.6</td>
<td>13.3</td>
<td>7.9</td>
<td>3.0</td>
<td>0.8</td>
<td>1.12</td>
</tr>
<tr>
<td>Browsers</td>
<td>49.1</td>
<td>21.8</td>
<td>12.1</td>
<td>7.3</td>
<td>9.7</td>
<td>1.1</td>
<td>1.33</td>
</tr>
<tr>
<td>FTP</td>
<td>67.3</td>
<td>17.6</td>
<td>7.9</td>
<td>3.6</td>
<td>3.6</td>
<td>0.6</td>
<td>1.03</td>
</tr>
<tr>
<td>Forum</td>
<td>44.8</td>
<td>24.2</td>
<td>12.1</td>
<td>9.1</td>
<td>9.7</td>
<td>1.1</td>
<td>1.34</td>
</tr>
<tr>
<td>Instant Messaging</td>
<td>60.6</td>
<td>16.4</td>
<td>9.7</td>
<td>6.1</td>
<td>7.3</td>
<td>0.8</td>
<td>1.26</td>
</tr>
</tbody>
</table>

### Frequency of Use for Professional Purposes

<table>
<thead>
<tr>
<th>Internet Service</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail</td>
<td>14.5</td>
<td>12.7</td>
<td>28.5</td>
<td>17.6</td>
<td>26.7</td>
<td>2.3</td>
<td>1.37</td>
</tr>
<tr>
<td>WWW</td>
<td>6.7</td>
<td>13.3</td>
<td>16.4</td>
<td>25.5</td>
<td>38.2</td>
<td>2.8</td>
<td>1.28</td>
</tr>
<tr>
<td>USENET</td>
<td>35.2</td>
<td>29.1</td>
<td>13.3</td>
<td>9.7</td>
<td>12.7</td>
<td>1.4</td>
<td>1.38</td>
</tr>
<tr>
<td>Browsers</td>
<td>29.7</td>
<td>18.8</td>
<td>21.2</td>
<td>13.3</td>
<td>17.0</td>
<td>1.7</td>
<td>1.45</td>
</tr>
<tr>
<td>FTP</td>
<td>43.0</td>
<td>21.8</td>
<td>15.2</td>
<td>11.5</td>
<td>8.5</td>
<td>1.2</td>
<td>1.33</td>
</tr>
<tr>
<td>Forum</td>
<td>31.5</td>
<td>26.1</td>
<td>18.8</td>
<td>12.7</td>
<td>10.9</td>
<td>1.5</td>
<td>1.34</td>
</tr>
<tr>
<td>Instant Messaging</td>
<td>43.0</td>
<td>28.5</td>
<td>10.3</td>
<td>9.7</td>
<td>8.5</td>
<td>1.1</td>
<td>1.30</td>
</tr>
</tbody>
</table>

### Frequency of Use for Personal Purposes

<table>
<thead>
<tr>
<th>Internet Service</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail</td>
<td>7.3</td>
<td>9.1</td>
<td>15.8</td>
<td>23.6</td>
<td>44.2</td>
<td>2.9</td>
<td>1.27</td>
</tr>
<tr>
<td>WWW</td>
<td>9.1</td>
<td>9.1</td>
<td>12.7</td>
<td>24.2</td>
<td>44.8</td>
<td>2.9</td>
<td>1.32</td>
</tr>
<tr>
<td>USENET</td>
<td>29.7</td>
<td>25.5</td>
<td>16.4</td>
<td>16.4</td>
<td>12.1</td>
<td>1.6</td>
<td>1.38</td>
</tr>
<tr>
<td>Browsers</td>
<td>26.1</td>
<td>20</td>
<td>23.0</td>
<td>13.3</td>
<td>17.6</td>
<td>1.8</td>
<td>1.43</td>
</tr>
<tr>
<td>FTP</td>
<td>41.8</td>
<td>21.8</td>
<td>17.0</td>
<td>7.9</td>
<td>11.5</td>
<td>1.3</td>
<td>1.37</td>
</tr>
<tr>
<td>Forum</td>
<td>21.2</td>
<td>20.6</td>
<td>23.0</td>
<td>16.4</td>
<td>18.8</td>
<td>1.9</td>
<td>1.40</td>
</tr>
<tr>
<td>Instant Messaging</td>
<td>30.3</td>
<td>21.8</td>
<td>15.8</td>
<td>15.8</td>
<td>16.4</td>
<td>1.7</td>
<td>1.46</td>
</tr>
</tbody>
</table>

Table 4.3: Frequency of Internet Resource Use for Instructional, Professional, and Personal Purposes

88
Level of Access of EFL Teachers at CT to the Internet and the Factors Limiting their Internet Access

Place of access to the Internet

Access to the Internet was measured by participants’ response to questionnaire items asking about the extent to which they could connect to the Internet in several settings: home, office, classroom, computer lab, and Internet café. Table 4.4 shows teachers’ level of Internet access as represented by a mean score on a 5-point scale ranging from 0 (Never) to 4 (Very Often).

<table>
<thead>
<tr>
<th>Scale</th>
<th>Place of Access to the Internet</th>
<th>Percent (%)</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Home</td>
<td></td>
<td>9.1</td>
<td>12.1</td>
<td>14.5</td>
</tr>
<tr>
<td>Office</td>
<td></td>
<td>23</td>
<td>15.2</td>
<td>24.8</td>
</tr>
<tr>
<td>Classroom</td>
<td></td>
<td>89.1</td>
<td>7.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Computer Lab</td>
<td></td>
<td>62.4</td>
<td>21.2</td>
<td>10.3</td>
</tr>
<tr>
<td>Internet Café</td>
<td></td>
<td>38.2</td>
<td>30.3</td>
<td>15.8</td>
</tr>
<tr>
<td>Overall Access Level</td>
<td></td>
<td>7.9</td>
<td>60</td>
<td>27.9</td>
</tr>
</tbody>
</table>

Table 4.4: Mean Scores on the Internet Place of Access Scale

As seen in Table 4.4, by far the most frequent access to the Internet was at home, with the mean of 2.8 suggesting that access hovered between sometimes and often. Access at office was second (1.9), indicating that this access was infrequent. Most striking, though, is the almost complete lack of Internet access in the classroom (0.2) and the computer lab (0.6). The low overall mean score on the Internet Access Scale of
1.3 (S.D. = 0.68) is also noteworthy, as it indicates that a typical teacher generally had very little access to the Internet in the school setting.

**Factors limiting use of the Internet**

Because Saudi Arabia is in the midst of a transformation in terms of the degree to which teachers and others are able to make use of technology such as the Internet, and because the Internet is emerging, worldwide, as an important pedagogical tool in English language teaching, it was deemed important to investigate factors which might limit teachers’ access to the Internet. To gain a deeper understanding of factors shaping the participants’ Internet access, EFL teachers were asked to report how often certain factors limited such access. Responses were based on a 5-point Likert-type scale which ranged from never (0) to very often (4). As shown in Table 4.5, the summated mean for all of the factors limiting participants’ access to the Internet was 1.9, indicating that, collectively, these factors sometimes limit EFL teachers’ access to the Internet.

Furthermore, Table 4.5 shows information about factors that may have limited the participants’ access to the Internet at home, office, classroom, computer lab, and Internet café. The mean scores for the various factors reported are distributed pretty evenly, with the exception of “slow connection” (2.5) and “too many people use the computer” (1.6). In general, the mean scores suggest that no specific factor had a particularly strong effect in terms of preventing access to the Internet.
### Factors Limiting Access to the Internet

<table>
<thead>
<tr>
<th>Factors</th>
<th>Percent (%)</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Hardware not working</td>
<td>9.7</td>
<td>37.6</td>
<td>21.8</td>
</tr>
<tr>
<td>Too many people use the computer</td>
<td>20.6</td>
<td>29.7</td>
<td>26.7</td>
</tr>
<tr>
<td>Busy connection</td>
<td>11.5</td>
<td>21.8</td>
<td>35.8</td>
</tr>
<tr>
<td>Server down</td>
<td>8.5</td>
<td>26.1</td>
<td>38.2</td>
</tr>
<tr>
<td>Slow connection</td>
<td>6.1</td>
<td>18.2</td>
<td>24.2</td>
</tr>
<tr>
<td>Lack of time</td>
<td>8.5</td>
<td>27.9</td>
<td>41.2</td>
</tr>
<tr>
<td>Cost</td>
<td>26.1</td>
<td>20.6</td>
<td>22.4</td>
</tr>
<tr>
<td><strong>Overall scale of access limitations</strong></td>
<td>2.4</td>
<td>25.5</td>
<td>52.7</td>
</tr>
</tbody>
</table>

Table 4.5: Factors Limiting EFL Teachers’ Access to the Internet (n= 165)

### Description of the Level of Expertise of EFL Teachers at CT

**Computer expertise**

EFL teachers were asked to report their level of expertise with selected computer applications on a 5-point Likert-scale of 0 (Never Use) to 4 (Expert). The summated mean for computer expertise of the participants was 1.9, indicating that, in general, they had an intermediate level of expertise with applications needed to use computers (Table 4.6). This fairly low mean score raises important questions about the extent to which
they would be equipped or inclined to incorporate computer-based pedagogy into their classes.

<table>
<thead>
<tr>
<th>Computer Applications</th>
<th>Percent (%)</th>
<th>Mean S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never Use</td>
<td>Beginner</td>
</tr>
<tr>
<td>Word processing</td>
<td>3</td>
<td>7.9</td>
</tr>
<tr>
<td>Spreadsheets</td>
<td>12.7</td>
<td>37.6</td>
</tr>
<tr>
<td>Databases management</td>
<td>25.5</td>
<td>47.3</td>
</tr>
<tr>
<td>Integrated software</td>
<td>9.7</td>
<td>18.2</td>
</tr>
<tr>
<td>Graphics</td>
<td>15.2</td>
<td>35.8</td>
</tr>
<tr>
<td>Presentation software</td>
<td>13.3</td>
<td>20</td>
</tr>
<tr>
<td>Multimedia programs</td>
<td>15.2</td>
<td>25.5</td>
</tr>
<tr>
<td><strong>Overall computer expertise</strong></td>
<td><strong>3.6</strong></td>
<td><strong>30.9</strong></td>
</tr>
</tbody>
</table>

Scale used: 4= Expert, 3= Advanced, 2= Intermediate, 1= Beginner, and 0= Never Use.

Table 4.6: Mean Scores of Computer Expertise of EFL Teachers at CT

Also, as shown in Table 4.6, which provides a breakdown of participants’ level of self-reported expertise in several types of computer applications, their highest level of ability was in the domain of word processing (60% “advanced” or “expert”), followed by integrated software (40.6% “advanced” or “expert”), and presentation software (38.2% “advanced” or “expert”). Their lowest level of self-reported expertise was in spreadsheets (69.1% “beginner” or “intermediate”), databases management (62.5%
“beginner” or “intermediate”), and graphics (61.3% “beginner” or “intermediate”). Also worth noting is the fact that between 3% and 25.5% of the respondents reported never using some of the selected computer applications. Collectively, these results also raise questions about the extent to which the teachers were able to use computer-based technology for teaching purposes, regardless of how much interest they may have had in doing so.

Internet expertise

Given the rapidly growing importance of the Internet in second/foreign language instruction (especially in the teaching of English), the participants were asked to report their level of expertise with selected Internet services on a 5-point Likert-scale of 0 (Never Use) to 4 (Expert). The summated mean for Internet expertise of EFL teachers was 2.1, indicating that the participants had achieved only an intermediate level of expertise with services needed to use the Internet (Table 4.7). This is a particularly noteworthy result in light of the afore-mentioned spread of the Internet as a second language teaching and learning tool. While the participants were not ill-equipped to take advantage of the Internet for teaching purposes, their ability to do so was clearly somewhat limited.
<table>
<thead>
<tr>
<th>Internet Services</th>
<th>Percent (%)</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never Use</td>
<td>Beginner</td>
<td>Intermediate</td>
</tr>
<tr>
<td>E-mail</td>
<td>3</td>
<td>3.6</td>
<td>17</td>
</tr>
<tr>
<td>Browsing WWW</td>
<td>1.2</td>
<td>6.7</td>
<td>23</td>
</tr>
<tr>
<td>Remote login (TELNET)</td>
<td>43.6</td>
<td>32.1</td>
<td>14.5</td>
</tr>
<tr>
<td>Create a web page</td>
<td>39.4</td>
<td>36.4</td>
<td>13.9</td>
</tr>
<tr>
<td>Search engines</td>
<td>8.5</td>
<td>7.9</td>
<td>15.8</td>
</tr>
<tr>
<td>Upload/download files</td>
<td>6.1</td>
<td>17</td>
<td>27.9</td>
</tr>
<tr>
<td>Chat rooms</td>
<td>28.5</td>
<td>18.2</td>
<td>24.8</td>
</tr>
<tr>
<td>Instant messaging</td>
<td>21.8</td>
<td>15.2</td>
<td>19.4</td>
</tr>
<tr>
<td>Forums</td>
<td>25.5</td>
<td>21.8</td>
<td>24.2</td>
</tr>
<tr>
<td><strong>Overall Internet expertise</strong></td>
<td>3.6</td>
<td>23</td>
<td>43.6</td>
</tr>
</tbody>
</table>

Scale used: 4= Expert, 3= Advanced, 2= Intermediate, 1= Beginner, and 0= Never Use.

Table 4.7: Mean Score of Internet Expertise of EFL Teachers at CT

In terms of level of expertise in the use of Internet applications, as shown in Table 4.7, the participants reported themselves to be best at sending and receiving e-mail messages (76.4% “advanced” or “expert”), browsing the World Wide Web (69.1% “advanced” or “expert”), and using search engines (67.9% “advanced” or “expert”). On the other end of the scale, they reported the lowest levels of expertise in creating a web page (75.8% “never use” or “beginner”), remote login (TELNET) (75.7% “never use” or “beginner”), and participating in forums (47.3% “beginner” or “intermediate”). In
general, these results suggest that the teachers would be able to make some use of Internet applications for pedagogical purposes. For example, one of the more popular instructional uses of the Internet is e-mail exchanges between students, such as through course listservs or webCT formats (e.g., Warschauer, 1995b). Some of the results reported in the next section (seen in Table 4.8) shed light on this issue.

**Description of EFL Teachers’ Perceptions of the Internet**

In further recognition of the importance of the Internet in language teaching, the participants were then asked to report their level of agreement/disagreement on 24 statements measuring their perception of the Internet in general and as a tool for EFL instruction. As shown in Table 4.8, the summated mean on a five-point Likert scale (1-5) for participants’ views about the Internet was 3.9, indicating that the participants had, on the whole, a relatively positive perception of the Internet.

<table>
<thead>
<tr>
<th>Population</th>
<th>n</th>
<th>Mean</th>
<th>S. D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFL teachers at CT</td>
<td>165</td>
<td>3.9</td>
<td>0.64</td>
</tr>
</tbody>
</table>

Scale used: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

Table 4.8: Mean Score of EFL Teachers’ Perception of the Internet

95
In the breakdown of these perceptions (Table 4.9), the participants reported the most positive attitude (combination of ‘agree’ or ‘strongly agree’) toward the statement, “use of the Internet increases their access to information” (91.5%); high levels of agreement were also shown toward the statements “using the Internet saves time and effort” (90.9%) and “the Internet has the potential to enhance EFL instruction” (83.6%). The latter result is particularly noteworthy, as it indicates that the teachers were positively inclined toward pedagogical use of the Internet, thus creating what would seem to be a valuable opening for the inclusion of this form of Internet-based instruction. When juxtaposed against two of the items where a notable level of disagreement was reported, however, this positive attitude toward Internet-based teaching takes on a different shape. For instance, the most negative level of agreement was recorded for the item, “job provided opportunities for them to teach about the Internet” (49.7% “strongly disagree” or “disagree”), followed fairly closely by “job provided opportunities for them to learn about the Internet” (42.4% “strongly disagree” or “disagree”). This result suggests a significant gap between teachers’ level of interest in the Internet and their opportunity to learn about or implement Internet-based instruction. Addressing this gap may be one of the most significant tasks to be undertaken by those in Saudi Arabia who wish to see the Internet incorporated into English language instruction. Noteworthy in this context is the high level of agreement (81.8%) with the statement, “EFL teachers should be trained/educated to use the Internet.”
<table>
<thead>
<tr>
<th>Perception Statement</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SD &amp; D</td>
</tr>
<tr>
<td>1. Use of the Internet increases my social prestige.</td>
<td>41.2</td>
</tr>
<tr>
<td>2. Use of the Internet increases my job performance.</td>
<td>8.5</td>
</tr>
<tr>
<td>3. Use of the Internet increases my access to information.</td>
<td>1.8</td>
</tr>
<tr>
<td>4. The Internet is easy to understand and use.</td>
<td>7.9</td>
</tr>
<tr>
<td>5. My job provides opportunities for me to learn about the Internet.</td>
<td>42.4</td>
</tr>
<tr>
<td>6. My job provides opportunities for me to teach about the Internet.</td>
<td>49.7</td>
</tr>
<tr>
<td>7. A large number of my colleagues currently use the Internet.</td>
<td>18.2</td>
</tr>
<tr>
<td>8. The Internet has the potential to enhance EFL instruction.</td>
<td>3</td>
</tr>
<tr>
<td>9. EFL teachers should be educated/trained to use the Internet.</td>
<td>4.2</td>
</tr>
<tr>
<td>10. Using the Internet saves time and effort.</td>
<td>3.6</td>
</tr>
<tr>
<td>11. The Internet offers opportunities for new teaching techniques.</td>
<td>6.1</td>
</tr>
<tr>
<td>12. Internet use fits well into my curriculum goals.</td>
<td>28.5</td>
</tr>
<tr>
<td>13. Internet can make learning English easier and more efficient.</td>
<td>8.5</td>
</tr>
<tr>
<td>14. Internet use does not contradict with my religious and social manners.</td>
<td>6.7</td>
</tr>
<tr>
<td>15. Internet can be used to teach pronunciation and speaking.</td>
<td>10.9</td>
</tr>
<tr>
<td>16. Internet can be used to teach grammar.</td>
<td>5.5</td>
</tr>
<tr>
<td>17. Internet can be used to teach reading and writing.</td>
<td>7.3</td>
</tr>
<tr>
<td>18. Class time is not enough to include Internet use.</td>
<td>32.7</td>
</tr>
<tr>
<td>19. Internet use fits my student’s learning styles and level of Internet expertise.</td>
<td>23.6</td>
</tr>
<tr>
<td>20. I like to know about resources available on the Internet for EFL instruction.</td>
<td>4.8</td>
</tr>
<tr>
<td>21. Using the Internet offers me cheaper access to others.</td>
<td>9.1</td>
</tr>
<tr>
<td>22. I will use the Internet in my teaching in the future.</td>
<td>12.7</td>
</tr>
<tr>
<td>23. Using the Internet makes teaching more interesting.</td>
<td>6.1</td>
</tr>
<tr>
<td>24. Using the Internet in teaching fits my personal preferences.</td>
<td>12.1</td>
</tr>
</tbody>
</table>

Scale: SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree

Table 4.9: Reported EFL Teachers’ Perceptions of the Internet (n=165)

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Other especially interesting results in this table are the level of agreement with the statement, “Internet can make English learning more interesting and efficient” (75.8%) and “Using the Internet makes teaching more interesting” (81.9%). It seems clear that these teachers were favorably inclined toward pedagogical use of the Internet, on the one hand, and at least somewhat frustrated by the lack of opportunities to learn about or explore Internet uses on the other. In general, the table’s (4.9) results can be read as a ringing endorsement for Internet use in the English as a second/foreign language classroom.

**Description of the Relationships between Teachers’ Use of the Internet and Independent Variables**

This section addresses the relationship between teachers’ use of the Internet and the main independent variables of this study: access to the Internet, expertise, perceptions, and personal characteristics. The principles used to determine the strength of correlations were based on Davis (1971), who suggests that a coefficient of 1.00 signifies a perfect relationship. A coefficient of .70 > indicates a very strong relationship. A coefficient between .50 and .69 shows a substantial relationship, between .30 and .49 a moderate relationship, between .10 and .29 a low relationship, and between .01 and .09 a negligible relationship.

Specific relationships were reported by Pearson's Product Moment, Point bi-serial, and Eta correlation coefficients. Pearson's Product Moment correlation coefficients were calculated for the relationships between the variables measured on an interval level, which were access, expertise, and perceptions. Point bi-serial correlation coefficients were calculated for variables measured on a nominal level, which were
citizenship, Internet training, and teaching method preference. Eta correlation coefficients were calculated for other demographic variables measured on an ordinal level, which were age, income, level of education, country of education, teaching experience, computer experience, Internet experience, and college location. Table 4.10 shows the relationships between the independent variables and the use of the Internet:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Use of the Internet</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place of access</td>
<td></td>
<td>.473&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Limitations of access</td>
<td></td>
<td>-.080&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Expertise</td>
<td></td>
<td>.559&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Perceptions</td>
<td></td>
<td>.236&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>.013&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td>.010&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td>.057&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Country of education</td>
<td></td>
<td>.019&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Citizenship</td>
<td></td>
<td>-.064&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Teaching experience</td>
<td></td>
<td>.023&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Computer experience</td>
<td></td>
<td>.131&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Internet experience</td>
<td></td>
<td>.170&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Internet training</td>
<td></td>
<td>.075&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Teaching method preference</td>
<td></td>
<td>-.118&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>College location</td>
<td></td>
<td>.022&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>= Pearson's Product Moment,  <sup>b</sup>= Point bi-serial,  <sup>c</sup>= Eta

Table 4.10: Relationships between Independent Variables and Use of the Internet
As shown in Table 4.10, there was a substantial positive relationship \( r = .559 \) between teachers’ use of the Internet and their expertise in using computers and the Internet. A moderate positive relationship \( r = .473 \) existed between a participant’s place of access to the Internet and his level of use of the Internet. In addition, there was a low positive association between teachers’ perceptions \( r = .236 \), computer experience \( \text{Eta} = .131 \), and Internet experience \( \text{Eta} = .170 \) and their use of the Internet. All other variables had shown negligible either positive or negative relationships with the use of the Internet.

**Proportion of Variance in Teachers’ Use of the Internet Explained by the Independent Variables**

Multiple regression was used to determine the variance in the level of use of the Internet explained by: personal characteristics, access to the Internet, computer and Internet expertise, and perception of the Internet. Fifteen variables associated with an individual’s decision to use the Internet were entered step-wise. Only three variables expertise, place of access, and Internet experience were able to explain approximately 39% of the total variance in the dependent variable the use of the Internet (Table 4.11).

<table>
<thead>
<tr>
<th>Regression Model</th>
<th>R Square</th>
<th>Adjusted R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.393</td>
<td>.382</td>
</tr>
</tbody>
</table>

Table 4.11: Overall Regression Model R Square = .393
Table 4.12 shows the relationships of the three variables and the use of the Internet.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expertise</th>
<th>Place of Access</th>
<th>Internet Experience</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expertise</td>
<td>1</td>
<td>.463</td>
<td>.406</td>
<td>2.0</td>
<td>0.815</td>
</tr>
<tr>
<td>Place of Access</td>
<td>.463</td>
<td>1</td>
<td>.275</td>
<td>1.3</td>
<td>0.689</td>
</tr>
<tr>
<td>Internet Experience</td>
<td>.406</td>
<td>.275</td>
<td>1</td>
<td>2.1</td>
<td>0.624</td>
</tr>
<tr>
<td>Use of the Internet</td>
<td>.559</td>
<td>.473</td>
<td>.388</td>
<td>1.6</td>
<td>0.835</td>
</tr>
</tbody>
</table>

Table 4.12: Inter-correlations of the three related Independent Variable and Internet Use

Table 4.13 shows the results of multiple regression indicating that three variables affected the teachers’ use of the Internet. The following are the absolute values of the standardized estimate (Beta) of these factors from largest to smallest: expertise (Beta = .374), place of access (Beta = .253), and Internet experience (Beta = .167).

<table>
<thead>
<tr>
<th>Variable</th>
<th>b</th>
<th>Beta</th>
<th>R² Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expertise</td>
<td>.383</td>
<td>.374</td>
<td>.312</td>
</tr>
<tr>
<td>Place of Access</td>
<td>.307</td>
<td>.253</td>
<td>.223</td>
</tr>
<tr>
<td>Internet Experience</td>
<td>.223</td>
<td>.167</td>
<td>.151</td>
</tr>
</tbody>
</table>

Table 4.13: Regression of Level of Use of the Internet on Related Independent Variables
Synthesis of Open-ended Responses Provided in the Questionnaire

The numerical results reported in the questionnaire portion of this chapter provided general profiles of participants’ beliefs concerning the Internet. Because, as explained earlier, the Internet is now a significant presence in the field of English language teaching, it was deemed useful to offer the study’s participants an opportunity to express, in discursive form, their feelings about the Internet. In this way they would be able to provide thoughts and attitudes that were perhaps not reflected, or not reflected enough, in the questionnaire items or the ways in which responses were elicited (e.g., Likert scale). Hence, the participants were requested to provide, at the end of the questionnaire, written comments on their use of the Internet for instructional purposes and the limitations that might hinder such use. One hundred thirty two (80%) of the study’s participants (n=165) provided such responses, most of which were in the form of short phrases and lists. Responses were provided in Arabic or English. Responses which were written in Arabic were translated by the researcher. Translation was then validated and reviewed with a bilingual expert who has a total experience of four years in translation between Arabic and English. Subsequently, responses were grouped into general themes. Respondents’ comments were afterward categorized by the researcher into more specific themes based on the patterns of responses. The themes which emerged eventually were:

a) the uses of the Internet and importance of knowledge of the Internet for teachers;

b) advantages of using the Internet; and

c) limitations of using the Internet.
Representative responses that illustrate the above themes areas are provided below.

**Uses of the Internet**

Responses included:

- “I used the Internet to help me with lesson plans. I found many useful materials on the Internet.”

- “I have not used the Internet in teaching, but I have seen a number of good web sites with many materials that would help for teaching listening and speaking. However, I’m not yet sure about grammar.”

- “I used e-mail to communicate with my students. It is very effective. But not all of them have e-mail.”

- “I believe the Internet is a necessity, especially in time and age, but better suited to our culture.”

- “It [the Internet] is a need that every EFL teacher should consider, but should be suited to students’ levels of proficiency.”

- “I would encourage my self and my colleagues to use the Internet to locate information, knowledge, and experiences. As for students, I do not think that they are there yet.”

- "I believe that using the Internet in teaching English is very very effective. As a teacher of English who is interested in graphic design, I see the Internet as an important and useful hand in acquiring English. It removes a big obstacle from the way of the acquisition process: COMMUNICATION."
• “I think it [the Internet] is good for students to practice the language and use their English.”

• “Very important to use [the Internet].”

The majority of respondents seemed to believe that the use of the Internet in EFL instruction is important, necessary, effective, and needed, a collective response consistent with what was reported earlier in the numerical summaries of questionnaire results. However, most of the participants provided statements that were too general or abstract to offer deeper insight into specific Internet use for instruction. Among responses that did provide commentary on practical Internet applications, the following applications were noted most often: sending messages to the class, answering student questions via the Internet, and getting help with lesson plans. Several participants acknowledged that there were additional ways in which they could be using the Internet. These uses included locating information, searching for resources, and learning about other teachers’ experiences. For use of the Internet for professional purposes, few teachers addressed the possibility of retrieving resources available on the Internet, such as digital libraries, journals, and digital books.

Additionally, a number of the participants had no idea or knowledge about how the Internet could be used as an instructional tool. Furthermore, quite a few teachers were skeptical about the effectiveness of the Internet in EFL instruction. They also emphasized the need for critical examination of its compatibility with their teaching situations and students before allowing any actual pedagogical. Meanwhile, one participant commented that the Internet is only a tool, and one that would not or should
not replace the teacher, thus emphasizing “the human element in teaching which is valid.”

As for future use of the Internet, a few respondents expressed their optimism, enthusiasm, and willingness to use it in the near future. They even articulated that they are planning to start using Internet-based materials in their teaching. However, they did not specifically mention what or how they are going to apply it. They also hoped to see many of their colleagues use it in their teaching.

**Advantages of Using the Internet**

Under this theme, responses of teachers were categorized into two main themes: advantages of the Internet use for EFL teachers and for students.

Regarding advantages of using the Internet for teachers, responses included:

- “Advantages of the Internet include but are not limited to: very powerful effective medium; easy accessibility to a variety of information resources; relevant specialist websites, libraries, books, journals (for learners and otherwise); and academic institutions, etc.”

- “I think it [the Internet] is an excellent source for EFL teachers to enhance their professional knowledge and experience with the huge amounts of resources available on the Internet.”

- “For us EFL teachers, not like other teachers in the department, I think the Internet helps us more. It is useful for building our teaching knowledge and sharpening our teaching experience.”

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• “It [the Internet] is very useful in teaching listening and speaking, especially since we lack that kind of communicative environment that would help even teachers, not only students, to maintain good English skills.

• “E-mail is a very good and efficient method in communication between teachers in the same field and also with students regarding class related issues.”

• “I personally found the Internet very useful helping me with lesson plan.”

• “One of the main advantages of the Internet for us as EFL teachers is the huge amounts of information and resources that are available with ease of use and very little effort to get.”

• “I believe that it [the Internet] is a necessary teaching and learning tool if used properly.”

• “The Internet is advantageous in providing new and probably more effective ways of teaching the language. It also makes the teaching and learning process more attractive, active, and interesting.”

As for advantages of using the Internet for students, responses included:

• “It is important that the language learner should spend some time to learn the language on his/her own. Therefore, the Internet provides one of these atmospheres: students’ centered learning.”

• “It is hard for our students to communicate in the target language outside the classroom. The Internet provides a good opportunity for them to use the language.”
• “It [the Internet] is good for motivating students to learn the language. It makes their experience with language more productive.”

• “It [the Internet] is good for students for getting exposure to the target language culture and how it is used in the original context.”

• “With the availability of many ESL web sites on the Internet, they provide many different opportunities (more than those available in the very limited class time) for students to learn and practice their English.”

• The Internet is good for students in that they learn the language on their own and at their own pace. They enjoy the Internet while they learn in the same time.”

• Students can benefit from the Internet in two way learning skills of using computer and the Internet, and at the same time they learn the English language, is not that great!”

The responses in this section, like those in the previous section, seemed to be rather general in nature. However, a number of responses presented some specific advantages of the use of the Internet, such as practicing the language and entertaining students while learning the language. Most of the participants agreed that the Internet is useful for both teachers and students to obtain useful information, resources and experiences. They also emphasized the value of the Internet for learning about current events and keeping up with new knowledge and experiences

Quite a few respondents drew distinctions regarding the advantages of the Internet. For instance, they thought that the Internet was useful only for teachers but not for students, because students were far behind in terms of use and knowledge of the Internet. Others also thought that because of the various constraints limiting wider use
of the Internet in the classroom, it is only good for students to practice and learn the language on their own. The latter point probably means that participants think that besides its use with students in class, it also provides students with valuable opportunities to practice and learn the language individually.

**Limitations of using the Internet**

**Affordability-related responses included:**

- “The Internet is still very expensive in Saudi Arabia comparing to other countries in the Arab world or in the world in general.”
- “I wish that the Internet is free as it is the case in a neighboring country like Egypt.”
- “What prevented many students from using the internet is its cost. Many students cannot afford buying a prepaid Internet card for five or ten Riyals.”
- “The prices of the Internet service are unbelievable. I do not think most of us can afford that.”
- “I do not understand why we still have to pay too much to use the Internet, while the rest of the world is getting the benefit of it.”
- “Students cannot afford buying computers to use at home.”

**Information-related responses included:**

- “Sometimes teachers suffer from an embarrassment of riches in terms of using the abundant materials available.”
“I think the materials available on the Internet are often too hard for students to understand. Students’ English level is too low to be able to use these materials.”

“There is a stereotype that ALL materials on the Internet are bad. This perception of the Internet limits the use of the Internet in my context.”

“Appropriateness of the materials available on the Internet might limit my use. I think that there is often a lot of jargon and cultural references. Many also contradict some of our social norms and religious beliefs. As teachers, we should be careful with these types of material before use”

“The fact that Internet is English dominated may affect students’ use, especially those at low levels of proficiency.”

“No newsgroups or forums for teachers to exchange information and experiences.”

“Many ESL web sites are commercial more than educational.”

As teachers, we should guide students to good web sites to learn and practice English. Web sites should be reviewed and simplified for students before they go and explore on their own.”

“Unreliable information.”

Expertise-related responses included:

“Teachers have limited skills of using computers and the Internet.”

“Many teachers do not know how to use the Internet in instruction. We need some training or workshops.”
• “Fear of the Internet because we do not know how to use it.”
• “Students are not yet there in terms of dealing with computers. Many of them do not know how it works. We have to train students on how to work with computers and the Internet before any use in instruction.”

Awareness and support-related responses included:

• “I see many teachers and students use the Internet for fun only or showing off. They have not yet acknowledged its importance in teaching and learning.”
• “Many teachers need awareness of how to use the Internet appropriately.”
• “Students are not aware of how beneficial the internet could be.”
• “No encouragement or initiative for using the net.”
• “Computers are old and not maintained, also software is not available.”
• “People in position of power have not yet acknowledged the importance of English language learning for our graduates, and yet consider it as a secondary goal.”
• “Employment office does not employ graduates who obtained their degrees via distance learning.”
• “Authorities are negative about using the Internet in teaching, they do not care.”
• “No support from department or college to EFL teachers to the Internet.”

Time and curriculum-related responses included:

• “Class time is too short to include use of the Internet.”
• “Class meets three times a week, we do not have time to include the Internet use with all the materials we have to cover. Also, the curriculum does not support or include Internet use.”
• “The Internet speed is very slow; it is time wasting if used in the limited class schedule.”
• “I see it [the Internet] as an add on to the curriculum. It is not implemented in it.”
• “Preparing materials using the Internet is time consuming besides other tasks I do. I’m a human being, not a machine!”
• “My busy schedule does not give space for use of the Internet.”

Equipment and access-related responses included:
• “There are no computers available for teachers’ use.”
• “Classrooms are not equipped with computers, and there are no computer labs to use the Internet for students.”
• “We do not have networking and computers everywhere connected to the Internet for communication use.”
• “Slow and bad connection need to be improved. Internet service and equipment is still unreliable”
• “Too many teachers use the same computer.”
• “Lack of computers available to teachers affects their use of the Internet.”
• “We need computer labs with high speed access to the Internet.”
• “Students do not have computers at home.”
• “I think we are missing the human factor.”
• “We need access to the internet in classrooms to make it easy to teach with it.”
• “Server is always busy, making it hard to use the Internet.”

Resistance-related responses included:
• “Some teachers are lazy to use it [the Internet].”
• “I personally like to use [the Internet], but some of my colleagues resist it and prefer using traditional methods of language teaching.”
• “Students are not motivated to learn English; they do not want to learn or work.”

Summarizing these responses, it can be seen that, for many teachers, using the Internet was considered too costly. Also, some of them noted that students’ limited budgets made it difficult for them to afford computers or Internet service, and this generally affected the use of the Internet in instruction. As for information found on the Internet, a number of the respondents stressed that it can be overwhelming and that it is difficult to assure the appropriateness and reliability of materials on the Internet. Teachers’ and students’ expertise in computers and Internet use was also considered as major factor that limited their use of the Internet in instruction. Regarding awareness and support, many teachers highlighted the importance of all kinds of support, either administrative or technical, and specifically reported the lack of initiatives and encouragement they received from their administration or department. Regarding time and curriculum, some study participants stated that they did not have enough time to incorporate Internet materials into the curriculum because of their busy schedules and
the fact that the curriculum did not support such use. Concerning equipment and access, most of the study participants stated that the computers and computer programs necessary for Internet use were not available to instructors and/or students and that access to the Internet was needed in classrooms as well as home. Finally, with respect to resistance, a few respondents suggested that the teachers’ reluctance or refusal to accept new innovations or new teaching methods affected their use of the Internet. Some also criticized the students for lacking the motivation to learn the language, let alone to use the Internet.

All in all, the teachers’ open-ended responses added some flavor and reinforcement to the quantitative section. Most notably, the comments consistently supported tendencies reflected in the responses to the questionnaire items. Like those items, the comments drew attention to the teachers’ frustration and dissatisfaction toward many aspects of Internet use, from difficulties with the current Internet service providers (resulting in slow and unreliable Internet connections), the high prices of the Internet service in comparison to other parts of the world, and institutional restraints which restricted adoption of an Internet-based pedagogy.

**Part Two: Follow-Up Interview Results**

While the written comments at the end of the questionnaires were useful, it was considered advisable to further probe into the issues motivating the study by conducting one-to-one interviews with some of the participants. Such interviews would allow those participants more extended and meaningful opportunities to comment on the questions the study was designed to investigate. Among the 165 respondents, 84 participants
(51%) indicated on the questionnaires their willingness to participate in follow-up interviews. Fifteen teachers among those were randomly selected for final phone interviews. The interviewees were asked three basic questions: Do you advocate the use of the Internet for educational purposes? Which factors, if any, do you think limit your adoption of the Internet in EFL instruction? How do you think EFL teachers at the Colleges of Technology can make appropriate adoption of the Internet for EFL instruction?

All interviews lasted from 10 to 20 minutes, and all were recorded, transcribed, coded, and examined using procedures for analyzing qualitative data as described by Miles and Huberman (1994). As noted in the methodology part of this study, 14 interviews were conducted in the Arabic language and only one was in English. After coding the data using NUDIST (N6), relevant quotations were grouped with their related codes and then translated into English by the researcher; and then translation was verified with a bilingual expert who had sufficient translation experience between Arabic and English. To ensure the anonymity of the respondents, numbers were used to identify individual respondents.

Key findings arising from the analysis of the interview data are presented in accordance with the following themes: (a) teachers’ attitudes toward the use of the Internet for educational purposes, (b) reasons for using the Internet in EFL instruction, (c) factors limiting use of the Internet in EFL instruction, (d) and future uses of the Internet by teachers in EFL instruction. Representative quotations are also provided to better illustrate these themes and the participants’ beliefs relative to them.
A) Teachers’ Attitudes Toward the Use of the Internet for Educational Purposes

When they were asked about their advocacy of the use of the Internet for educational purposes, especially in EFL instruction, all fifteen interviewees expressed their positive attitudes towards such use. Statements such as “yes, I strongly advocate its [the Internet] use” and “of course, I do” were typical comments made by most of the participants during the interviews. Interviewee # 1 answered: “I do not only advocate the use of Internet in English teaching, but also would like to call for that.” Interviewee # 3 replied: “certainly, to a large extent.” And interviewee # 5 responded: “Internet has become a must, at least in my opinion.” One interviewee (# 11) expressed his positive attitudes towards using the Internet in EFL instruction with reservations. He stated that “In fact, although generally I advocate the use of the Internet in instruction, I still have some reservations…related to Internet content and readiness of the teacher and student to do so…” (his reservations are presented in section C below).

B) Reasons for Using the Internet in EFL Instruction

In this category, the interviewees discussed their personal reasons for their positive attitudes towards using the Internet for EFL instruction. Almost all of the interviewees attributed their positive attitudes to the advantages that it might bring into EFL teaching and/or learning. Participants consistently indicated that the Internet can benefit EFL instruction in the following ways: (a) saves time and effort in getting information and materials needed for classes, (b) helps in abandoning some “primitive” ways of delivering instruction, (c) improves the quality and quantity of the delivered instruction, (d) adds an element of interest and joy to the teaching/learning process, (e) provides easy storage and retrieval for lesson plans and other class-related material, (f) provides
an alternative way of presenting information, (g) offers a means of self-learning, (h) offers chances to teachers to serve as facilitators, (i) allows for fast transportation of knowledge and theories of teaching/learning, (j) sustains teachers' self-development, and (k) provides students with additional opportunities for drill and practice. Also, the majority of the participants considered that the Internet can serve as a visual aid for demonstrations, a huge library for obtaining varied types of information, a tool for research-based learning, and a means of evaluation (online quizzes).

Participants also pointed out some more specific advantages of the Internet for EFL instruction. Some of them stated that the Internet is useful for developing students’ oral skills (pronunciation/speaking), vocabulary, reading, and listening skills. One interviewee (# 9) stressed how the Internet can assist the creation and use of instant lesson plans. Another interviewee (# 10) identified online dictionaries as helpful for students. Two interviewees (# 4 and 9) stressed the value of the use of e-mail for communication with other teachers and students, particularly for class related purposes (e.g., assignments, grades, questions, and feedback).

Some participants pointed out more general reasons for their positive attitudes toward the Internet. For example, interviewee # 1 stated that “the use of the Internet can help create a generation of educated students, especially in this time and age of area of technological advancement. We cannot stay behind while the rest of the world is already there.” Commenting on the advantages created by the Internet regarding communicating with other English teachers/learners around the world and exchanging experiences, interviewee # 4 mentioned that “the Internet allows us not only to learn
from other people’s experiences and knowledge from all around the world, but also to communicate with them in the second language.”

To summarize, all fifteen interviewees agreed that the use of the Internet in instruction is important, especially during this period of time. They shared many similar views and reasons for their positive opinions, and in doing so corroborated attitudes expressed in the questionnaire portion of the study.

C) Factors Limiting Use of the Internet in EFL Instruction

The interviewees also discussed various factors that limit their use of the Internet in EFL instruction at The Colleges of Technology. These limiting factors included Internet access, Internet content, student-related limitations, teacher-related limitations, administration-related limitations, and other factors.

Internet Access:

Access-related limitations, including availability of equipment, were, collectively, one of the most frequently mentioned categories of factors limiting the use of the Internet in EFL instruction. Internet access includes access to computers, the Internet, and computer labs. In addition, participants complained about the large numbers of students in their classrooms (45-50) and how this factor would make it difficult to accommodate to make use of computer labs, where it would be difficult, if not impossible, to find sufficient space and equipment to serve all of them. The majority of interviewees repeated statements such as “no computer labs for Internet use”, “slow Internet service”, and “lack of computer machines for teachers/students.” Interviewee #1 stated: “In my opinion, two of the most difficult factors limiting my use are classrooms are not prepared to use computers and do not have access to the Internet and
Internet service is so bad, not working, and very slow...” Another interviewee (# 4) shared a similar concern: “we need classrooms which are equipped with enough computers, good and reliable Internet service, and projectors to apply Internet in our instruction.” Availability of enough computers for use by both teachers and students was a common concern that most of the Interviewees highlighted. Interviewee # 7 confirmed: “We don’t have enough computer laboratories and in many cases classrooms are not equipped with the required (equipment) to use the Internet. It is suggested to specify classrooms for English classes (in which) teachers can use the Internet … easily.” Lack of computer networking was a limitation that one interviewee (# 8) highlighted. He stated: “I heard that some English teachers in other technical colleges are currently using the Internet in teaching, such as e-mail. But we don’t have networking with them or Internet connection with other colleges to learn from their experiences.”

In summary, the majority of interviewees found that using the Internet in EFL instruction was limited by a major lack of access to the Internet. Here they echoed concerns raised in the questionnaire responses.

Internet content:

In the Arab world, the Internet has been identified as a Western innovation that generally might not comply with conservative Arab societies (Al-Fulih, 2002; Kayser, 2002; Khuwaileh, 2000). In this study, Internet content was expected to be a major concern among the EFL teachers; however, only five interviewees offered comments which shed some light on content-related factors. Teachers’ worries mostly focused on a) the appropriateness of the Internet content to students’ level of proficiency and b)
compatibility with teachers/students cultural and social norms. Three interviewees expressed concerns related to (a). Interviewee # 2 stated: “the materials available on the Internet might be a way above students level of English language. Therefore, it would be difficult to expect students to apply the use of the Internet.” Interviewee # 5 added: “the language may cause a problem for those [teachers] who want to deal with (use) the Internet. It might not be a problem for us, as teachers, but I think it may (might) be difficult for our students.” Interviewee # 10 ascribed his lack of use of the Internet to students’ English level by simply saying: “the weakness of students in English is the major limitation.” As for concern (b) above, “Sustaining our social manners” was a statement that was given by interviewee # 13. That was more of a general and abstract statement. When he was asked to provide some elaboration, he added: “well, you know [interviewer]...the Internet is another world...yes, I agree there are good materials, but also there are a lot of immoral content that might corrupt our students’ morals and contradict with our conservative society and culture.”

Imposing content restrictions or in other ways addressing problems with Internet content while using the Internet in EFL instruction was a topic raised by some of the participants. For example, interviewee # 9 presented what he thought as a simple solution to content-related problems. He suggested: “most of the educational materials are required to be explained in classes, in the presence of student(s).” That is, teachers can help students initially examine and evaluate the material before adopting it for personal use.
Student-related limitations:

The majority of interviewees indicated that student-related factors created limitations in their use of the Internet in instruction. These limiting factors included student lack of computer and Internet skills and awareness, student lack of language skills, and variation among students’ access to computers. As Interviewee # 11 explained, “one of the obstacles I find in applying the use of the Internet in teaching is related to the lack of computer skills among students. Believe it or not, I asked the students in my class how many of them use computers. Only seven students out of fifty in the class knew basic [computer] skills. How about Internet then?!” Interviewee # 6 stated: “a large number of students do not know how to use the Internet… or how to search for information.” Interviewee # 10 added: “…students’ ignorance of how to use computers, not to mention their ignorance of dealing with the Internet cause big delay in using the Internet in teaching.” As a remedy to these problems, one interviewee (# 15) suggested that “although it costs a lot of money and effort, students should get sufficient training or education on basic skills of computers and the Internet before implementing its use in instruction. The time for training will, of course, cause more delay and may slow things down.”

With respect to Internet awareness, three participants drew attention to students’ lack of awareness of the benefits of Internet use. Interviewee # 6 insisted that a number of students use the Internet, if any, was only for entertainment and pleasure, not for educational purposes. He mentioned that “the lack of students’ awareness of the Internet usefulness in education is a big problem. I know many students who use the Internet only for reading daily newspapers or playing online games.” Interviewee # 3 expressed
a similar concern regarding not only the students, but also the society for its lack of awareness of the value of the Internet in education. He explained: “lack of awareness of the general public and specifically students of the use of the Internet causes the problem. The students come from an environment which is Internet illiterate, and thus affecting the student’s perception of the Internet that it is very complex and difficult to understand.”

This interviewee also criticized the educational system because it did not insist on a stronger relationship between teachers and students, one based on trust and transparency. He gave an example of this by saying: “I mean for instance, when using email to receive assignments from my students, how can I make sure that the one who did send the assignment was the student himself, not any body else.” He then added: “this is an outcome of the gaps in our educational system.”

A mixture of lack of awareness of Internet value and computer skills bothered interviewee # 9. He stated: “not every student (can) use the Internet properly. Even if they have it [Internet], they may not know how … (to use) it.” Again, a number of Interviewees attributed the lack of use of the Internet to the insufficient English skills of the students (this factor was discussed in the previous section—Internet content). As for students’ equality in terms of English skills and Internet-service affordability, interviewee # 3 mentioned that “not all students have the same language level nor all of them have enough money to buy a prepaid Internet card, not to mention affording to by a computer (in the first place) for two or three thousand Riyals.”
In summary, a number of interviewees found that using the Internet in EFL instruction was limited by student-related factors—basically the same factors identified earlier in the study.

Teacher-related limitations:

Interviewees also discussed teacher-related limitations that inhibit the use of the Internet for EFL instruction. These limitations included teachers’ time constraints, lack of computer or Internet expertise, and willingness to change and to try new teaching techniques. The limitation mentioned most frequently was the lack of time to examine and integrate Internet material into the curriculum. For instance, interviewee # 2 said: “one of the reasons for not using the Internet in teaching is related to time availability. I really do not find enough time to finish the assigned curriculum. I need to invest a lot of time to search in the Internet and locate appropriate supplementary materials that would relate to my lessons… the Internet is huge but teachers’ time is very limited.”

Interviewees # 14 and 15 also addressed this constraint when discussing the class time issue. They mentioned that there was not enough class time available to include Internet use. For example, interviewee # 15 stated: “I see it [time] as a big problem, which is the insufficient time for using it [the Internet] during the class period.” Exacerbating teachers’ time-related limitations was the combination of unreliable and slow Internet service, which often rendered the use of the Internet in the class period a waste of time, a point a number of interviewees mentioned.

Complementing complaints about students’ lack of computer expertise was frequent reference (mentioned by most interviewees) to teachers’ insufficient computer and/or Internet knowledge. Interviewee # 6 drew attention to this limitation while
acknowledging his own need for self-development in Internet use. He mentioned: “I am in desperate need for developing my own computer and Internet skills. I need training [on how to apply Internet in teaching] by professional experts.” And yet he saw himself as being ahead of some other teachers when he added that “a group of my colleagues do not know how to use the Internet or even simply search for information.” Interviewee # 6 also emphasized the teachers’ lack of computer and/or Internet skills.

The last teacher-related limitation was related to willingness and readiness of teachers to use the Internet in EFL instruction. For example, interviewee # 6 was teaching only three classes, but he also was the coordinator of an EFL section in one of the Colleges of Technology. He mentioned:

“I use the Internet occasionally in my classes, if I find time. However, I know that a number of my colleagues have not yet considered the Internet advantage for English teaching. Furthermore, many of them have abandoned the use of any kind of technology [not only Internet] in teaching, and preferred to use traditional ways of delivering instruction.”

To summarize, a number of interviewees found that using the Internet in EFL instruction was limited by a number of teacher-related factors, and here, too, they reinforced points which appeared in the questionnaire data.

Administration-related limitations:

The interviewees discussed a number of factors that were not related to themselves or students but to people in positions of authority. In doing so, they affirmed that these factors limited their use of the Internet for EFL instruction. These factors included
obligating teachers to strictly follow a prepared curriculum, administration’s lack of awareness of the value of the Internet, and lack of institutional support.

Flexibility, or the lack thereof, of the curriculum was one of the major factors preventing teachers from fully or successfully incorporating the Internet in instruction. A number of teachers complained about the strictness of the administration in this regard. As interviewee # 4 complained: “we received regulations from the GOTEVT to strictly follow the assigned curriculum without any development, changes, or additions.” Another interviewee (# 2) shared the same apprehension. He stated that

“Forcing the teacher to follow materials that was prepared for a specific course might hinder the use of the Internet. There is no place for technology use in the current textbooks which we teach. This problem becomes even more complicated if I am not on track [late in curriculum]. We [EFL teachers] teach in a college level not in an elementary school, and we need some flexibility to modify the curriculum to meet our students language needs.”

Interviewee # 12 stated: “lack of awareness of value of the Internet for teaching by people of authority in our institution might affect teachers’ use. Also, the lack of support from the government is required to succeed in this project.” Another interviewee (# 3) shared a similar concern. He said:

“People of position have not provided English teachers with enough support to apply Internet in teaching. This support could be technical or financial. They [administrators] also could offer free workshops for teachers to train them on using the Internet in instruction. They also could buy or reserve spaces on global servers (cyberspaces) for teacher to develop and establish their own instructional
web sites or newsgroups, and store their teaching materials to be retrieved by students anywhere and anytime.”

Interviewee # 8 summed up teachers’ conceptions of administration-related limitations by stating: “lack of encouragement and support by authorities and administrations plays a big part in this [lack of use of the Internet in EFL instruction].”

All in all, the interviewees were frustrated by difficulties pertaining to administrative attitudes related directly or indirectly to Intern use. When seen in combination with other limitations discussed in the interviews—Internet access, Internet content, student-related limitations, and Internet service cost as well as Internet reliability issues—their comments created a sense of an emerging tension concerning Internet use, a tension reflected in data reported earlier. That is, we have once again seen, on the one hand, considerable enthusiasm toward the Internet among the participants and, on the other, frustration toward various difficulties involved in successfully implementing an Internet-based pedagogy.

D) Future Uses of the Internet by EFL teachers

Given that the Internet was rarely used in instruction, the majority of EFL teachers discussed how the Internet could be used in the future. Most of the uses the teachers suggested were based on treating and/or eliminating the factors limiting incorporation of the Internet in EFL instruction. These suggestions for future use focused on access and equipment, expertise, and specific uses of the Internet.

Most of the interviewees discussed ways of making proper use of the Internet. Interviewee # 8 stated: “let us assume that we first solve the problem with access and
availability of equipment. Also, we have computer labs and classrooms with computers that are ready to use and have reliable and fast Internet service. After all of that, I can suggest the following…. Interviewees # 2, 4, and 14 made similar statements before going on to discuss how they are going to use Internet applications in their teaching. For equipment, a number of interviewees suggested using high quality projectors and multimedia centers. Interviewee # 2 stated: “it is necessary to equip some classrooms with sharp big screens for projectors to help the teachers explain materials to the whole class without going to each and every individual student at his terminal.” Also, Interviewee # 15 noted: “in order to apply using the Internet in teaching, this can be done via providing multi-media classroom(s) where computers, DVD and phone lines are available.”

The second group of suggestions was devoted to developing both teachers’ and students’ awareness of the value of the Internet for educational purposes and their skills in working with computers and the Internet. Interviewee # 7 indicated that “panels of Internet users from those teachers and students should be established on all campuses to develop awareness and educate teachers and students to use the Internet… this will help a lot.” A couple of participants called for workshops for training both teachers and students on how to use the Internet, especially e-mail, searching the web and locating information. Interviewee # 2 suggested:

“One English teacher with good knowledge of the Internet should work as a coordinator or web maintainer, in which he helps all English teachers in the department preparing materials for their classes and solving any related problems.” He added, “I would suggest that teachers assign some extra grades
for Internet use…and students who use the Internet…e-mail-search engines…anything.. shall be rewarded…I think this will motivate students to use the Internet more .” He added, “I also suggest that students are allowed to use computer labs at certain times during the day (about seven hours a day) so that students choose times that are good for them to try, serve, and search the Internet …or send e-mail… and so on.”

Interviewee # 8 pointed out “all teachers should take care of their students by encouraging them to use the Internet and explaining to them all what it [the Internet] is about and its advantages in educational purposes.” Interviewee # 6 suggested that

“Teachers could assign extra non-instructional hours to meet with classes and work with them on the Internet … teaching them listening, reading, vocabulary, etc.” He added “students also might be required to visit predetermined ESL web sites and get any information to share with their class… or doing some quizzes online and sending results to their teachers via e-mail.” He also noted that “teachers could have their own web sites hosted on some free servers on the Internet, in which they put some class materials, exercises, tests, and class newsletter or discussion groups, as well as students post their assign men to be evaluated by the whole class. Students could access this web site anytime and anywhere. This is a type of distance and self learning.”

Interviewee # 5 pointed out:

“Any one of us [English teachers] could, for example, open a newsgroup.. let us say on Yahoo to help students and their teachers to communicate with each other easily and quickly. Teachers then could post some quizzes and test of
(from) past years on that group so students can see them anytime. Not only that, but also teachers could post any necessary papers or readings for them. It is suggested that teachers use their e-mail accounts to receive students’ assignments and to any questions … about the course.”

To summarize, the teachers stated that future uses of the Internet in EFL classes would include: having course materials, including multimedia, available on the Internet; employing the Internet for class assignments using e-mail, and the World Wide Web; teacher-student communication using e-mail; announcing assignments on the Internet; making schedules using the Internet; establishing electronic virtual clubs or forums for teachers and students; and employing distance education.

Overall, the qualitative data substantiate most of the findings in the questionnaire data. In general, interviewees were positive about the use of the Internet in EFL education and noted a number of particular advantages of Internet use for teachers and students in the context of the Colleges of Technology. Additionally, the interviewees identified several limitations that affected their own use (actual or desired) of the Internet in instruction. By mirroring in these comments the numerical results which emerged in the questionnaire data, they added credibility and value to those results and provided deeper insight into the issues facing Saudi Arabia’s Colleges of Technology in what is emerging, globally, as the age of the Internet in English language education.
Summary of the Chapter

Part 1 of this chapter presented the analysis of the survey questionnaire data in eight sections, including a synthesis of the open-ended comments provided at the end of the survey. Part 2 of the chapter presented key findings of the fifteen follow-up interviews. In Chapter 5, the quantitative and qualitative results are examined in conjunction with each other in order to generate meaningful answers to the study’s research questions and derive conclusions and implications arising from the results, as well as recommendations for future research.
CHAPTER 5

SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

After a brief summary of the study, this chapter discusses its findings, draws conclusions, and proposes recommendations for both implementation of changes in the Saudi Arabian Colleges of Technology and for further research.

Summary of the Study

The rapid diffusion of the Internet into many aspects of life has created both promises and challenges for EFL (as well as ESL) teachers. As this study has shown, while the participants acknowledged the potential benefits of the Internet for education and generally seem interested in incorporating the Internet into their instruction, they are confronted by some significant challenges in terms of further adopting the Internet for educational purposes. For the last six years, the Saudi General Organization for Technical Education and Vocational Training (GOTEVT) has been following systematic plans to introduce computers and the Internet into all colleges of technology (CT) in Saudi Arabia in an attempt to create increased use of these tools by students and teachers. While GOTEVOT’s technology initiative seems far reaching in terms of its current as well as potential impact on various levels of life at the colleges of technology,
there was relatively little information available about the actual use of the Internet by EFL teachers in these institutions. Addressing, and hopefully filling, this information gap was the primary impetus for this study. The main purposes of this study were to a) describe the level of use of the Internet by EFL teachers in the Colleges of Technology in Saudi Arabia, and b) investigate relationships between the level of use of the Internet and these variables: personal characteristics of the EFL teachers; their personal and professional access to the Internet; their level of computer and Internet expertise; and their perceptions of the Internet, especially as related to English language teaching and learning.

A descriptive-correlational research design combined with a qualitative research data collection approach was employed to collect data from the population of all EFL teachers at the four main Saudi Arabian colleges of technology, which are located in Riyadh, Abha, Jeddah, and Dammam. Data initially were collected using a survey instrument. The survey stage was followed by interviews with a random sample of 15 teachers. The quantitative element was considered the dominant domain of inquiry of this study, with the qualitative element providing valuable supplementary information that provided context for the quantitative results that were obtained. The qualitative data were vital not only to consolidate the findings from the survey stage of the study but also to illuminate some issues that were uncovered by the quantitative data, including possible explanations of the teachers’ positive perceptions toward the Internet, limitations in their Internet use, and possible future use of the Internet in instruction. In light of the research questions used to guide this study, the discussion which follows
was based on the results from both major data sources: the questionnaire (including follow-up comments provided by many of the respondents) and interviews.

**Discussion of the Findings**

The study was guided by seven research questions. This section addresses these questions partly by summarizing key results and partly by providing interpretations of the results.

1. **What was the level of the Internet use among EFL teachers in the colleges of technology in Saudi Arabia?**

   Level of use of the Internet by EFL teachers was represented by a mean score on a 5-point scale, where ‘4’ represents the maximum score of the scale and ‘0’ represents the minimum score. The summated mean score was 1.6, indicating that the EFL teachers in the Colleges of Technology (CT) reported rare or occasional use of the Internet. As for Internet use for each of the three domains—instructional, professional, and personal purposes—the summated mean for instructional purposes was 1.0, indicating that the participants rarely used the Internet for instructional purposes; the summated mean for professional development purposes was 1.7, indicating that they rarely or sometimes used the Internet for professional development purposes; and the summated mean for personal purposes was 2.0, indicating that the participants sometimes used the Internet for personal purposes. That the most extensive use of the Internet was for personal purposes, while the least use was for instructional purposes, was worth noting, as was the fact that in each domain the amount of use was limited. One reason why Internet use
was lower for instructional purposes than other purposes has to do probably with computer and Internet access. Both data resources showed that computer labs often were not available for classroom use, and teachers did not have enough computers to facilitate their individual use at school. The classrooms, themselves, did not have computers and Internet access.

Additionally, lack of access has led to another reason behind teachers’ low level of use of the Internet: the lack of computer and Internet expertise and training. Interviews and survey data showed how participants had a low level of expertise with applications needed for computers and the Internet use. They also expressed their need for basic training to learn how to use the Internet properly in teaching.

Regarding the Internet applications most frequently used by teachers, the questionnaire given to the participants asked them to indicate their current level of use for each of the seven different items of Internet use under each domain (instructional, professional, and personal purposes). These items ranged from typical applications (e.g., e-mail) to more advanced ones (e.g., FTP). On all domains of Internet use (instructional, professional, and personal purposes), the most often used Internet resources were the World Wide Web (WWW), and e-mail. The least used Internet resources were USENET Newsgroups, and FTP (File Transfer Protocol). Data from the interviews echoed these results.

This finding suggests that the participants engaged in high levels of Internet use for mainstream Internet applications, while they reported low levels of Internet use for more specialized applications. This pattern of Internet use was similar to a number of
studies’ results, including Almusalam (2001), Isleem (2003), Mubireek (2001), and Porter (1997). Whether this pattern was due strictly to the participants’ preferences or to limitations in their knowledge of computer applications was unclear, but it is worth remembering here the absence of opportunities for Internet training reported earlier. Specialized applications increase the complexity of the innovation, thus supporting Rogers’ diffusion theory (1995) in terms of complexity being a barrier to adoption of an innovation. By contrast, mainstream applications are more likely to be compatible with the adopter’s existing principles and thus increase the chances of diffusion in this domain (Rogers, 1995). Hence, these results lend support to Rogers’ theory that compatibility improves diffusion of an innovation. It seems likely that applications of the Internet in Saudi colleges of technology would remain restricted until the computer infrastructure expands and allows teachers greater access to computers and to training. While the teachers seemed poised for at least some degree of innovation, the resources available to them prevented anything more than minimal innovation.

2. What were personal characteristics of EFL teachers in the Colleges of Technology in Saudi Arabia?

The last part of the questionnaire requested participants to provide information about selected personal demographics. These included age; monthly; income; level of education; country of highest attained degree; citizenship; teaching experience; computer and Internet experience; training, teaching methods preference; and college of technology location. More than 89 percent of the participants were less than 39 years old, meaning that the majority of EFL teachers in CT were somewhat young teachers,
with about 76% of them having less than ten years of teaching experience. Also, about 89 percent of the participants earned less than 10,000 Saudi Riyals (SR) (approximately $2600) a month and none of them earned more than 16,000 SR (approximately $4200). In other words, these generally young and somewhat inexperienced (to a considerable extent) teachers were not in a position to be able to afford their own training in Internet use (71% of respondents reported that they had had no Internet training) and so had to rely on the Colleges of Technology to support their desire and efforts to upgrade their computer and especially Internet knowledge. This finding suggests that colleges of technology take a more positive role in financially supporting teachers to use the Internet and to offer them free home access to the Internet, as well as free training opportunities to prop Internet use in instruction. The fact that the majority of them (86%) preferred new methods of language teaching (e.g., interactive, communicative, and social) was also worth noting, in that this may suggest a willingness on the part of these teachers to try new computer and Internet based approaches to teaching which align with their interest in new teaching methods. Indeed, their ability to adopt these new methods could be greatly enhanced by appropriate levels of access to the Internet and Internet training.

According to Rogers (1995) theory, Homophily is the degree to which two or more individuals who interact are similar in certain attributes, (i.e., beliefs, education, and social status). The teachers’ demographics support this notion of similarities among teacher, encouraging for more adoption of the Internet by the teachers. The majority, as the results showed, have many characteristics in common, such as age, level of education, income range, and citizenship. On the other hand, there were some degree of
dissimilarity, although it was very small. This degree of dissimilarity is called heterophily (Rogers, 1995). According to Rogers, the very nature of diffusion demands that at least some degree of heterophily exist between the participants of the diffusion process. These two concepts of the Rogers’ theory were supported by the results of the teachers’ demographics in this study.

3. What was the level of EFL teachers’ perceived access to the Internet as well as limitations of that access?

In this study, access to the Internet was defined by how often the Internet was accessible in specific places; an accompanying issue was the factors that limited such access. The questionnaire asked the participants to indicate how often they had computer access in five contexts where Internet access would be most likely to occur: home, office, classroom, computer lab, and Internet café. The mean score on the place of access scale for all of the possible sites combined was 1.3 (on a scale of 0-4), indicating that the participants’ access to the Internet was considerably restricted. The most frequent access to the Internet was at home and office, a finding in line with several previous studies (Albirini, 2004; Almusalam, 2001; Isleem 2003; Porter, 1997). The most frequent lack of access to the Internet was in the classroom and computer lab, just as Almusalam (2001) found in an earlier study. Qualitative results from other sections of the study were consistent with these quantitative results. Likely explanations for the inadequate access to the Internet would include a considerable lack of investments in providing enough computer infrastructures to EFL teachers in colleges of technology to be able to use the Internet. This in part might be attributed again to the
lack of attention given to English teaching, because it was seen as a minor subject. Also
the fact that there were lots of colleges of technology in Saudi Arabia might make the
GOTEVOT’s investment projects for technology development proceed very slowly.
Hence, Colleges of technology might prioritize these investments according to the main
departments that offer certificates in many majors.

It must be remembered, though, that restrictions in access are not only a matter of
whether the relevant technology is in abundant supply. Having a sufficient number of
computers available for instructional use is only part of the equation. Hence, it was
necessary to look further at the factors most likely to impact on Internet access. In this
context, the participants were asked in the survey to rate the extent to which they
thought each of the seven factors would limit their access to the Internet. As reported in
Chapter Four, slow and busy Internet connections emerged as the factors most
frequently limiting the EFL teachers’ access to the Internet either at home, office,
classroom, computer lab, and Internet café. Mubireek (2001) and Porter (1997) likewise
found that a busy signal from the internet service provider was a common cause of
difficulties in accessing the Internet, while Isleem (2003) reported that
outdated/incompatible computers and/or not enough software licenses were the factors
most often limiting teachers’ computer (and thus Internet) access. Differences in study
settings might be considered as a likely explanation for this variation in findings. Isleem
(2003), Mubireek (2001), and Porter (1997) studied populations from within the state of
Ohio in the United States, where the Internet has long been available, while the
population of this study was from another part of the world (Saudi Arabia) in which the
diffusion of the Internet is still in its initial stages. As Al-Fulih (2002) has reported, in
Saudi Arabia the Internet was not publicly used until 1999.

Findings from the open-ended section of the survey and the interviews added
considerable context to the quantitative findings, particularly since they identified a
number of factors related to Internet affordability that were not included in the survey as
well as some that they were. The factors they cited included: richness of information
(i.e., more information than the participants’ could reasonably handle),
teachers/students lack of computer/Internet expertise, lack of authorities, teachers, and
students’ awareness of Internet capabilities, absence of institutional support, lack of
time for teachers to direct their attention to the Internet, limitations in the curriculum,
large class size (45-50 students per class), lack of equipment as well as access to it
(especially the problems with busy signals when contacting internet service providers),
equipment breakdowns, a greater supply of people wanting to use computers than the
number of computers available, and teachers’ resistance to change and trying new
practical and innovative teaching methods.

It was worth noting that factors related to teachers’ resistance to trying new and
probably better ways of delivering instruction limited teachers use of the Internet as a
new medium for EFL pedagogy. This is related to Rogers’ (1995) notion of
innovativeness. Adopters are categorized based on innovativeness into five categories:
innovators, early adopters, early majority, late majority, and laggards (Rogers, 1995).
On one extreme of the distribution are the innovators, the risk takers and pioneers who
adopt an innovation very early in the diffusion process, and on the other end are the
laggards, those who resist adopting an innovation until rather late in the diffusion
process, if ever. The results of this study showed that there were very few laggards among participant in the study. The majority of teachers were in middle of the scale with some innovators.

The findings, collectively, have confirmed that Internet access was one of the most marked barriers to Internet adoption and integration in language teaching (Albirini, 2004; Isleem, 2003; Mubireek, 2001), and the results of this study lend support to this belief. Rogers (1995) went beyond access to an innovation and discussed trialability and observability. For an innovation to be readily adopted, it must afford experimental use and observable results. The cost of buying, maintaining and updating computer equipment and computer programs presents significant problems in the field of education, where budgets are often restricted (Fusayil, 2000). The results of this study showed that teachers had poor access, which would negatively affect their Internet adoption rate. They had few opportunities to try the Internet and own a computer. Also, they rarely observed computer and Internet connections in classrooms.

4. What was the level of teachers’ perceived expertise in computer and Internet use?

In this study, level of expertise was defined in terms of teachers’ mastery of major computer and Internet applications as tools to facilitate instruction. The participants were asked to report their level of expertise with selected computer applications on a 5-point Likert-scale of 0 (Never Use) to 4 (Expert). The summated mean for computer expertise was 1.9, indicating that these EFL teachers had an intermediate level of expertise in computer applications. The highest levels of expertise were reported to be
in word processing, integrated software (a group of applications designed to work together and share data easily), and presentation software (e.g., Microsoft PowerPoint). Teachers reported the lowest levels of expertise in use of spreadsheets (e.g., Microsoft Excel), databases management (e.g., Microsoft Access), and use of graphics. The fact that word processing was the most frequently used computer application was consistent with a number of studies, including Almusalam (2001), Isleem (2003), Katona (1999), Mubireek (2001), and Porter (1997).

As for Internet expertise, the participants were asked to report their level of expertise with selected Internet services on the same scale. The summated mean for Internet expertise of EFL teachers was a little higher (2.0), indicating that these EFL teachers had also an intermediate level of expertise in Internet services. Although the difference in mean scores between computer (1.9) and Internet expertise (2.0) was insignificant, this finding seemed a little contradictory because generally a person needs the computer to use the Internet. A possible explanation for this contradiction is related to the fact that mainstream Internet applications (WWW and e-mail) and interface are easier than other computer applications. For example, the skill needed to use the WWW and e-mail is considerably lower than that required for operating a system and the more specialized computer applications (e.g., Excel). A novice person can just click a button and go to the WWW or with one click send an e-mail, but to operate a system with hardware and software is considered more complicated and requires more knowledge.

Again, such mainstream Internet applications as e-mail and World Wide Web (WWW) had the highest expertise ratings, while lower levels of expertise were reported
for specialized applications like creating a web page and remote login (TELNET). These findings support previous research with regards to e-mail and WWW expertise (Almusalam, 2001; Islem, 2003; Katona, 1999; Mubireek, 2001; Porter, 1997). These findings were also consistent with Rogers’ theory of diffusion, cited earlier, which states that rate of adoption of an innovation is influenced by the innovation’s complexity. In this case, the ability necessary to use e-mail and the WWW was considerably lower than that required for the specialized applications noted above. Additionally, the results from the interviews mirror the survey findings, and they add the point that lack of computer and Internet skills was one of the most highly limiting factors in their use of the Internet in EFL instruction.

5. What were EFL teachers’ perceptions toward the Internet as a tool for instructional purposes?

As already suggested, according to Rogers (1995), people’s acceptance or rejection of any new technology depends largely on the relative advantages provided by the technology itself. He also notes that peoples’ positive perceptions of an innovation accelerate its diffusion process. Findings from both the survey data and the interviews suggest that the participants generally had positive perceptions of the Internet as a tool for EFL instruction. The survey respondents were asked to report their level of agreement/disagreement on 24 statements measuring their perceptions of the Internet in general and as a tool for EFL instruction in particular. The summated mean on a one-to-five Likert scale was 3.9, indicating that the respondents had somewhat positive to positive perceptions of the Internet with respect to pedagogy.
In the qualitative portion of the study, the interviewees explored the reasons behind their positive perceptions of the Internet’s potential value for EFL instruction. These reasons included: Internet saves time and effort in obtaining information and materials needed for classes, helps in abandoning some traditional ways of delivering instruction, improves quality of instruction, adds an element of interest and joy to the teaching/learning process, provides easy storage and retrieval for lesson plans and other class-related material, resembles an attractive alternative way of presenting information, offers a means of student-centered learning, offers teachers opportunities to serve as facilitators rather than lecturers engaging in extensive “teacher talk,” allows for fast transportation of knowledge and theories of teaching/learning, sustains teachers’ self-development, provide students with additional opportunities for drill and practice, serves as a huge library and research tool for obtaining various types of information, and offers alternative means of evaluation (e.g., online quizzes).

Thus, teachers’ positive perceptions in the current study had a special importance given the insufficient computer resources and lack of training opportunities characterizing the current status of Internet use in the colleges of technology in the Saudi context. This finding supports the widely reported positive perceptions towards Information technology regardless of the limitations to implementations efforts (e.g., Albirini, 2004; Almusalam, 2001, Blankenship, 1998). The findings, however, did not support the assumption that teachers with low level of Internet use usually have negative perceptions toward technology (Summers, 1990). There are a number of explanations to such positive perceptions, including the apparent acknowledgement of teachers of the relative advantage of the Internet for language instruction. Additionally,
the mean score for teachers’ personal use of the Internet although was somewhat limited (2.0) but was the highest among all other types of use (for instructional and professional purposes) and likely leading to their optimistic perceptions. In other words, teachers have experienced the Internet for personal use to the extent they acknowledged its value for instruction, and therefore were willing to use it in their classrooms. Furthermore, findings from interviews supported the high perception of the teachers. As one interviewee emphasized, the fact that the Internet is generally dominated by the English language, which allows it to offer plenty of authentic materials for their students, thus, the Internet could offer some solutions to teachers in EFL settings who seek to overcome the problem of using English only in the classroom, as was the case in Saudi EFL classes. As was mentioned earlier, it has been widely reported that the Internet provides various opportunities for students to be evolved in authentic communicative language experiences with native speakers of English from around the world. For this reason, Saudi EFL teachers might have already developed such positive perceptions toward the use of the Internet for instruction because of their awareness of its prospective authenticity (Al-Arish, 1994).

6. What was the relationship between teachers' level of the Internet use on one hand and, on the other, their access to the Internet, expertise in the Internet use, perceptions of the Internet, as well as their personal characteristics?

Person product moment, point bi-serial, and Eta correlation coefficients were used to disclose the associations between level of use of the Internet and selected variables. A moderate positive relationship ($r=.473$) was found between an EFL teacher’s place of
access to the Internet and his level of use. This positive association between level of access and use of computer/Internet has been widely reported in the literature (e.g., Albejadi, 2000; Albirini, 2004; Fusayil, 2000; and Isleem, 2003). This relationship suggests that the higher level of access at home, office, classroom, and computer lab would result in a high level of use of the Internet by EFL teachers in the colleges of technology in Saudi Arabia.

A substantial positive relationship \( r = 0.559 \) existed between teachers’ use of the Internet and their expertise in using computers and the Internet. Also, two demographic variables had moderate positive relationships with the use of the Internet: computer experience \( (\text{Eta} = 0.131) \) and Internet experience \( (\text{Eta} = 0.170) \). These results were in compliance with Porter (1997), who found a statistically significant substantial positive relationship for computer/Internet knowledge and level of use of the Internet, and Mubireek (2001), who reported a statistically significant moderate positive relationship for Internet proficiency and Internet use. Again, a number of studies have reported similar results, including Albirini (2004), Almusalam (2001), Blankenship (1998), Isleem (2003), and Jacobsen (1998). This study’s findings of the relationships that existed between teachers’ use of the Internet and their expertise in computers and the Internet suggest that the higher the level of computer/Internet expertise results in a higher level of Internet use.

Additionally, results pointed to the existence of a low positive association \( r = 0.236 \) between teachers’ use of the Internet and their perceptions of the Internet. Previous research has also reported positive associations between teachers’ perceptions and the
use of technology (Albirini, 2003; Isleem, 2003; Porter, 1997). This low positive relationship between teachers’ perception of the Internet and their use of the Internet suggests that the higher positive perceptions teachers develop toward the Internet would result in a higher level of use on the Internet in pedagogy. Therefore, colleges of technology in Saudi Arabia should play a major role in promoting and developing EFL teachers’ positive perceptions of the Internet by establishing opportunities for teachers to have sufficient training and expertise with the Internet and offering adequate access for equipment and probably reliable Internet service.

7. Which independent variables explained the greatest amount of variance in the level of the Internet use by EFL teachers in colleges of technology in Saudi Arabia?

Multiple regression was used to determine the variance in the level of use of the Internet explained by the independent variables in the study. The findings showed that the independent variables explaining the greatest amount of variance in EFL teachers’ level of Internet use were computer/Internet expertise, place of access, and Internet experience. Approximately 39% of the total variance in Internet use was explained by these three independent variables. These results support findings in Albejadi (2000), Blankenship (1998), Isleem (2003), and Porter (1997), in which expertise and access to computers and Internet were influential factors related to Internet use. The multiple regression findings were consistent with the correlation findings, in which these three variables (expertise, place of access, and Internet experience) showed significant associations with the level of use of the Internet by EFL teachers at the colleges of
technology in Saudi Arabia. Again, this suggests that colleges of technology should have more practical initiatives toward training and educating these teachers on using the Internet and providing them with sufficient access to the Internet. This would most likely result in more pedagogical use of the Internet for language instruction.

**Conclusions and Implications**

The diffusion of the Internet innovation in education has been widely studied. It has been impacting the field of English language teaching for more than a decade. The potential of the value of the Internet for English language instruction has been examined in Western settings to a large extent. There were also various attempts to explore use of the Internet in other parts of the world. However, in the Arab world it was still unclear whether the Internet would benefit and facilitate English language teaching and learning. This study was expecting to add some portraits to what was already known about Internet adoption for language pedagogy in other parts of the world. This part presents conclusions and implications of the results of the study for current and future EFL teaching situations, using Saudi colleges of technology as the basis.

Based on the findings of this study, the use of the Internet in EFL teaching in Saudi Arabian colleges of technology is still in its initial stages, as has been noted. It seems that the process of innovation will probably take a long time to reach the level of Internet use seen in other parts of the world. Rogers (1995) have identified time as a characteristic of diffusion of technological innovations. He also suggested that some innovations might take more time to diffuse than others, emphasizing the differences between cultures and societies in accepting or rejecting an innovation. The results
suggest a considerable gap between teachers’ level of interest in the Internet and their opportunity to learn about or implement Internet-based instruction. Addressing this gap might be one of the most significant tasks to be undertaken by policy-makers in Saudi colleges of technology who would wish to see the Internet incorporated into English language instruction.

While the participants were not ill-equipped to take advantage of the Internet for teaching purposes, their ability to do so was clearly somewhat limited. It seemed clear that these teachers were favorably inclined toward pedagogical use of the Internet, on the one hand, and at least somewhat frustrated by the lack of opportunities to learn about or explore Internet uses on the other. Without reasonable degrees of computer access in classrooms and for professional development purposes, and with limited (at best) opportunities for training in Internet use, the participants were essentially powerless to act on their interest in the Internet shown in other parts of the study. These results suggest that meaningful implementation of computer and Internet-based English language teaching at the Colleges of Technology in Saudi Arabia could not be expected to occur, regardless of teachers’ interest in such an instructional pedagogy, until the access situation changes dramatically.

It was especially interesting to note that computer access was a problem at colleges devoted to technology, where a computer-based infrastructure might be expected to exist. This might lead to questions about the announced budgets and projects provided by the GOTEVOT for better computers and Internet services to all colleges of technology. Also, this might create issues concerning equal distribution of resources not
only among all colleges of technology around Saudi Arabia but also the departments within these colleges. Thus, serious efforts to evaluate these projects may be needed. English teaching might not have been targeted by the GOTEVOT’s announced technology development projects. Also, these efforts might have been confined only to those departments which were considered much more worthy of support.

Furthermore, the findings suggest that EFL teaching and learning in colleges of technology has been marginalized. The General Studies Departments which provide EFL courses have been perceived as service units (Alfallaj, 1998). Thus, these departments usually receive the least amount of support and attention by authorities and administrators in colleges of technology and GOTEVOT. This issue also has its roots in the history of English language teaching back in the 1980s and 1990s, when ESP (English for Specific Purposes) programs had been ignored simply because they were not core programs or main departments. While colleges of technology clearly have valued the English language by mandating English courses in their programs, they have not yet provided EFL teaching and teachers with the desired attention and support they needed to be successful (Alfallaj, 1998). Hence, the teachers were prevented from applying computer and Internet-based instruction simply because of lack of access and skills needed for that.

Thus, the GOTEVOT has to take immediate active roles in equally supporting EFL teacher and programs, promoting EFL teachers’ professional development and training teachers on skills required to use computers and the Internet. With respect to training, for example, teachers could be enrolled in systematic short period (one day or less) in-
service workshops that would not only offer basic knowledge of various applications of computers and the Internet but also train teachers in using such applications in their teaching. The GOTEVOT also must find ways to enhance teachers’ experiences by establishing on-duty centers with professional staff to provide technical support and help whenever needed during academic hours.

While EFL teachers in colleges of technology showed limited use of the Internet, they held positive perceptions of the Internet as a tool for pedagogical purposes. EFL teachers were not in a position to widely implement Internet use in language instruction although they seemed ready for that, suggesting that diffusion of the internet in Saudi Arabia needs to proceed slowly. As Rogers (1983) notes, innovations which are technologically based are not always diffused and adopted rapidly even when the innovation has obvious advantages. Also, the fact that there are approximately 33 colleges of technology in Saudi Arabia might make the GOTEVOT’s investment projects for technology development proceed very slowly. Despite efforts by GOTEVOT to spread and promote computer and Internet infrastructures in all colleges of technology, they did not seem to meet the growing needs of these institutions, particularly those of EFL teachers. Hence, there is an urgent need for more efforts from the policy makers to help EFL teachers in the colleges of technology enhance their use of the Internet for English teaching. This need was supported by the results of this study, especially the finding that teachers wanted for such opportunities.

Additionally, Colleges of technology must have a major role in maintaining, promoting, and developing EFL teachers’ ready-to-use positive perception of using the
Internet in teaching. This would make their implementation of technology more effective and speedy. Also, teachers should be given enough opportunities to develop and sharpen their positive perceptions through Internet training and education.

EFL teachers in this study showed, on one hand, high levels of use of mainstream computer and Internet services such as e-mail, word processing, and the World Wide Web. On the other hand, they showed low levels of use and expertise in more advanced applications. Hence, in the context of Saudi colleges of technology, this was a valuable finding, as it seemed likely that applications of the Internet in those schools would remain restricted until the computer infrastructure would expand and allow teachers greater access to computers and to training in how to use them in the more complex realms of the Internet. While the teachers seemed poised for at least some degree of innovation, the resources available to them prevented anything more than minimal innovation.

However, in general, these results suggest that EFL teachers in this study would be able to make some basic use of Internet applications for pedagogical purposes. For example, one of the more popular instructional uses of the Internet is e-mail exchanges between students, such as through course listservs or webCT formats (e.g., Warschauer, 1995b). Language teachers in other places have experimented with exchange situations in which their students correspond by email with students at other institutions, such as students of English in France communicating with students of French in Canada. Through these exchanges, students could practice their use of the target language and could obtain information about the target language through questions posed to the
native speaker students with whom they would be communicating. The World Wide Web would also provide students with access to resources which can enrich the language learning process, such as websites like the well-known Dave’s ESL Café, where there would be an abundance of information about the English language as well as exercises in which students could practice their use of the language. Additionally, EFL teachers at the Colleges of Technology would be able to interact online with professional peers in other countries and thus enhance their teaching knowledge and ability through these exchanges.

Implications also could be drawn from the findings of the study regarding factors limiting EFL teachers’ use of the Internet. As noted earlier, for the most part these factors are practical in nature. The more practically oriented factors may be minimized or eliminated by changes in the infrastructure, especially through greater financial support that would enable the purchase of more computers and perhaps better Internet connections. However, teachers’ resistance to new ways of teaching and important questions about how Internet content and access to it could violate social norms and beliefs are deeper issues that require further exploration. What was of particular interest is what falls more in the domains of attitude and appropriateness. For example, it has been noted that “teachers’ resistance to change traditional ways of delivering instruction” was a factor cited as restricting Internet access. However, with so little Internet access available on campus, the teachers likely had no choice but to continue teaching English in traditional ways.

Also, Internet appropriateness and compatibility with teachers/students’ cultural and social norms was noted in the findings. Five interviewees expressed apprehension about
the moralities and values that the Internet was bringing into the Saudi Arabian culture, which is considered Islamic and conservative in nature. They were worried that immoral websites may affect students, in particular. Therefore, the Department of technology at GOTEVOT should prepare programs that educate students and teachers “morally and culturally” about the improper material on the Internet. As Thomas (1987) suggests cultural conditions of developing societies should be considered when technology transfers from industrialized societies into these societies. Also, Rogers (1995) points to the fundamental role that the social norms play in determining the rate of an innovation’s adoption. The difficulty involved in capturing cultural and social aspect might be behind the lack of research in this area (Albirini, 2004). The sensitivity of this issue suggests that EFL teachers in Saudi Arabia need to be informed about the potential value of the Internet and how to adjust its efficiency with students’ needs and the Islamic cultural and social norms.

To overcome factors limiting Internet access among EFL teacher in Saudi colleges of technology, it was suggested that policy makers in the colleges of technology in Saudi Arabia should probably offer chances for teachers to increase their professional development and allowing them more flexibility to be innovative in designing and developing EFL Internet-based materials and activities. Also, class time could be organized in such a way to allow more flexibility to the teachers to integrate and use the Internet. Additionally, policy makers in the colleges of technology need to consider hiring more EFL teachers to overcome a number of limitations including number of students in a classrooms and teachers’ time constraints.
In the colleges of technology in Saudi Arabia, the factors most influencing the low level of use of the Internet were teachers’ perceived expertise, place of access, and Internet training. Computer and Internet expertise alone was responsible for about 30% of lack of use of the Internet by the participants. This supports the fact that lack of expertise with technology is a major limitation for its diffusion in education (Porter, 1997).

Additionally, the findings of this study suggested that personal factors limiting EFL teachers in the colleges of technology from using the Internet were of minimal weight in affecting the level of use of the Internet. External factors (e.g., availability of access, expertise), as seen above, were stronger predictors of EFL use of the Internet.

As for future use of the Internet in Saudi colleges of technology, theorists have indicated that perceptions can often predict future decision-making behavior (Ajzen & Fishbein, 1980; Rogers, 1995). Thus, having developed positive perceptions toward the Internet as a tool for pedagogy, it seems reasonable to expect that the teachers at colleges of technology in Saudi Arabia will attempt to use it in their classes once they are offered enough opportunities for Internet training and have more adequate access to computers and the Internet. Again, this suggests that colleges of technology have to take more active roles in promoting EFL teachers’ professional development. EFL teachers must be offered opportunities for developing specialized skills required to use computers and the Internet in language instruction by expert teachers who can model such pedagogic usage in language activities.
Recommendations

In view of the findings of this study and the conclusions arising from them, the following recommendations for policy and practice could be made. They are related to strategies that could be implemented by policy-makers to ensure the success of their technology initiative and by EFL teachers to obtain the best results from using the Internet for EFL instruction.

1. The substantial positive relationship between Internet use and computer/Internet expertise suggests that establishing regular programs for professional development for EFL teachers’ computer and Internet knowledge and skills would help to improve their level of Internet use for instructional purposes. Also, this relationship points to a strong need for on-going, comprehensive, and well-structured Internet education courses and/or workshops that focus on the use and implementation of the Internet into EFL instruction. The technology department at the GOTEVOT should provide sufficient funding to launch such workshops in local locations which are convenient for teachers.

2. Both the quantitative and qualitative data indicate that a high percentage of the teachers felt that use of the Internet does not match the existing curricula nor fit within the current class-time format. Policy-makers and administrators should provide additional planning time for teachers to experiment with new Internet-based methods. This may be attained by reducing the teaching load of the teachers. Also, teachers should be assigned non-instructional hours for exploring and developing ways of integrating the Internet into the curriculum.

3. Consequently, allowing enough time to search the Internet or design and update Internet materials for EFL classes might help relieve teachers’ worries about the
appropriateness of Internet content. Qualitative data revealed teachers’ concerns about Internet content, which may be above their students’ proficiency level. Perhaps, specific times should be scheduled for EFL teachers to pursue Internet training on how to evaluate and select appropriate internet-based material which may be close to their students’ level for class use. Teachers also can be assigned non-instructional (in-service) hours allowing them to explore the Internet content and develop materials which will go side-by-side with their students needs.

4. The low level of teachers’ Internet use resulted partially from poor access to computers and the Internet. Policy-makers and administrators should take more initiatives regarding allocating funds to provide enough computers in the Colleges of Technology and faster Internet connections inside classrooms, computer labs, and, most importantly, to provide teachers with enough resources and equipment for professional development. The last step may aid teachers in experimenting with the Internet before attempting to use it in their classrooms.

5. A number of interviewees stated that they were limited by regulations instructing them to follow the curriculum with no opportunities for amendments, thus restricting their ability to modify their curriculum to include Internet use. Policy-makers should allow more flexibility for the EFL teachers at the Colleges of Technology so as to include the use of the Internet in their course planning. Teachers could then be allowed to create or use ready-to-use material from the Internet. They also can be permitted to use the Internet content to create supplementary exercises for additional learning, and/or for finding new ways to evaluate students’ learning. This limitation hindered EFL
teachers’ innovativeness and negatively affected the quality of instruction on the college level, as some interviewees noted.

6. The results from this study indicated that the teachers generally had positive perceptions toward the use of the Internet despite the different limitations regarding its implementation in the Saudi Colleges of Technology. It is essential for policy-makers to sustain and promote such perceptions as a prerequisite for promising future Internet use. They also can make use of teachers’ positive perceptions toward the use of the Internet to better prepare them for incorporating its use in their teaching practices. Again, creating training opportunities for EFL teachers on Internet use can help to a great deal in this regard.

7. The interviewees expressed their concerns about the need to develop awareness of the value of the Internet for education on all levels of the society. The GOTEVT and all colleges of technology should implement awareness programs in these schools for the public at large, for students, and for teachers. The main goal for such programs would probably be to enlighten teachers and students of the Internet’s potential value and simultaneously motivate them to use the Internet in their classrooms. Teachers share part of the responsibility for educating themselves about the use of the Internet to enhance EFL teaching, and these programs might encourage them to raise their own level of awareness and expertise.

8. The need for more training opportunities was one of the teachers’ major demands in this study. The GOTEVT Technology Department should ensure that all teachers receive adequate training. This measure would be part of the human resource
development, which is essential for technology implementation. Training should not merely focus on computer literacy skills but also present ways to integrate the Internet in teaching and learning, including a cultural awareness aspect. Training should be led by expert teachers who can model computers’ pedagogic usage in language activities. Since expertise is a positive predictor of the level of Internet use, continuing to support teachers in their professional development would increase the level of Internet use.

9. Since teachers’ time constraints and the large number of students in classroom were major limitations to teachers’ Internet use in this study, it is recommended that colleges of technology employ enough EFL teachers to solve such limitations. This will release some of the load from the current teachers and will help reduce the number students of students per class. Also, this solution will not only allow teachers to have more in-class time to employ Internet-based teaching but also students to have more opportunities to learn the English language on the Internet.

**Recommendations for further study**

Because the current study is the first of its kind in the context of the Colleges of Technology in Saudi Arabia, additional studies could build on the results of this study and provide a greater wealth of knowledge in this area. Based on the analysis of the data and results presented, the following recommendations for research are offered for consideration.

1. With some modifications, the instrument developed in this study may be used as a guide to measure observed Internet use in different educational settings and with populations similar to the target setting and population of this study. Also, the methodology designed in this study may be used to repeat this study over time to
thoroughly test the model presented in this and other contexts, and measure the rate of adoption of Internet use.

2. Given the potential benefit of the use of the Internet for EFL teaching and learning, future research may study the relationships between the use of the Internet for instructional purposes by EFL teachers and student achievement.

3. Since the current study focused only on the EFL teachers use of the Internet at the Colleges of Technology, future research may consider studying students’ Internet use in the same setting. Additionally, during the interviews, participants regularly mentioned students as participants in the overall Internet adoption process. Therefore, a study is needed to investigate these issues from an EFL student perspective.

4. This study used a dominant-less-dominant research methodology, in which the quantitative part was dominant, and data collected from interviews served as a validating procedure. Qualitative research aims to provide in-depth information that quantitative research might not be able to access. Future researchers need to consider the qualitative option that employs in-class observations and in-depth interviews with teachers and students.

5. This study examined relationships between Internet use and other independent variables. Another study is needed to look at the relationships between the independent variables. In particular, the relationship between access, expertise, perceptions, and other demographic variables needs to be explored.

6. Given the significant influence of cultural perceptions in determining level of Internet use, future studies should examine the effect of this factor on EFL teachers. This factor is particularly important in countries such as Saudi Arabia, where
technology is often seen as a foreign innovation that may or may not fit within the existing educational system or home culture. Further study should focus on such an important variable.

7. The current study employed cross-sectional methods to gather data on the Saudi Colleges of Technology EFL teachers at a single point of time. Future research could address Internet use change in EFL instruction over a long period of time.

8. The EFL teachers in this study revealed few teaching methods using the Internet. Future research may study what and/or which teaching methods correlate with higher levels of Internet use for instructional purposes.

9. The variables examined in this study were responsible for approximately 39% of the variance in the EFL teachers’ use of the Internet. Future research may study other factors such as self-efficacy, training, colleagues and administrative support, and incentives that may relate to Internet use.

10. Because this study found a shortage in the infrastructure of technology at the colleges of technology in Saudi Arabia regardless of all the announced projects, there exists a need for an evaluative study to assess the effectiveness of these projects. The study may also focus on assessing the equal distribution of technology projects among all colleges of technology in Saudi Arabia. It may employ both quantitative as well as qualitative research methods.

To conclude, this study hopefully has contributed to the growing body of knowledge in the field of using the Internet in EFL instruction particularly in Saudi Arabian colleges of technology. Rogers’ theory of “Diffusion of Innovations was applied to visualize the diffusion of the Internet within this setting. The outcomes of this study
optimistically provided a starting point for making changes at colleges of technology toward the use of Internet in instruction and valuing the EFL teaching and learning. Moreover, the study hopefully would lead to other areas of examination to further expand research in new and probably better ways of EFL instruction using the Internet in the context of Saudi Arabia and other countries as well.
LIST OF REFERENCES


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APPENDICES
Appendix A: Questionnaire Instrument (English Version)
PART ONE: USE OF THE INTERNET

INSTRUCTIONS: Express your perceived level of use of the Internet for the purposes below by checking (✓) the appropriate box. Please use the following scale to reflect your use by how many hours per week:

- Never = zero hours per week
- Rarely = 1-5 hours per week
- Sometimes = 6-10 hours per week
- Often = 11-20 hours per week
- Very often = 21 or more hours per week

A. How often do you use the following internet services for instructional purposes (e.g., for your lessons)?

<table>
<thead>
<tr>
<th>Service</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic-mail (e-mail)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The World Wide Web (WWW)</td>
<td>❑</td>
<td>❑</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USENET newsgroups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Browsers to view documents (e.g., Lycos)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>File Transfer Protocol (FTP)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Forums</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instant Messaging (Messenger)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

B. How often do you use the following internet services for professional development purposes (e.g., to locate information)?

<table>
<thead>
<tr>
<th>Service</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic-mail (e-mail)</td>
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<td></td>
</tr>
<tr>
<td>The World Wide Web (WWW)</td>
<td>❑</td>
<td>❑</td>
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<td></td>
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<tr>
<td>USENET newsgroups</td>
<td></td>
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</tr>
<tr>
<td>Browsers to view documents (e.g., Lycos)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>File Transfer Protocol (FTP)</td>
<td></td>
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<tr>
<td>Forums</td>
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</tr>
<tr>
<td>Instant Messaging (Messenger)</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

C. How often do you use the following internet services for personal purposes (e.g., communication or entertainment)?

<table>
<thead>
<tr>
<th>Service</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic-mail (e-mail)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>The World Wide Web (WWW)</td>
<td>❑</td>
<td>❑</td>
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</tr>
<tr>
<td>USENET newsgroups</td>
<td></td>
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</tr>
<tr>
<td>Browsers to view documents (e.g., Lycos)</td>
<td></td>
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</tr>
<tr>
<td>File Transfer Protocol (FTP)</td>
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</tr>
<tr>
<td>Forums</td>
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</tr>
<tr>
<td>Instant Messaging (Messenger)</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

PART TWO: ACCESS TO THE INTERNET

Do you have access to the Internet?
- ❑ No, if "no" please skip and go to PART TREE
- ❑ Yes, if "yes" please continue with PART TWO.

INSTRUCTIONS: Please identify your access to the Internet by checking (✓) the appropriate box. Please use the following scale to reflect your access by how many hours per week:

- Never = zero hours per week
- Rarely = 1-5 hours per week
- Sometimes = 6-10 hours per week
- Often = 11-20 hours per week
- Very often = 21 or more hours per week

A. How often do you have access to the internet at these places?

<table>
<thead>
<tr>
<th>Place</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. in your home</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. in your office</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. in the classroom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. in a computer lab</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. in an internet cafe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

173
B. How often do the following factors limit your access to the Internet?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hardware not working or outdated (e.g., modem)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Too many people use the computer</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Internet connection is always busy</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Server down</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5. Internet connection is too slow</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6. Lack of time</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7. Cost of the internet service</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

**PART THREE: EXPERTISE IN COMPUTER AND INTERNET USE**

**INSTRUCTIONS:** Please specify your level of proficiency in using the following computer and Internet applications below by checking (✓ ✗) the appropriate box. Please use the following scale:

- **Beginner**: is a less frequent computer and Internet user who can slowly navigate through a computer's operating system in order to open, edit, and create files, but does not know how to troubleshoot and solve problems.
- **Intermediate**: is a frequent computer and Internet user who feels at ease with the keyboard and mouse. The intermediate user can quickly and easily navigate through the computer's operating system as well as open, edit, and create files, and is willing to explore the use of computer technology and troubleshoot small problems.
- **Advanced**: is a daily computer and Internet user who can quickly and easily navigate through a computer's operating system as well as open, edit, and create files, and has a fairly good foundation in most computer and Internet applications and has relatively expertise in troubleshooting and solving small problems.
- **Expert**: is a daily computer and Internet user who can quickly and easily navigate through a computer's operating system as well as open, edit, and create files, and has a solid foundation in almost all computer and Internet applications and has solid expertise in troubleshooting and solving major problems.
- **Never Use**: is one who is not familiar with an application.

A. Computer skills include:

<table>
<thead>
<tr>
<th>Application</th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
<th>Expert</th>
<th>Never Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Word processing (e.g., Microsoft Word)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Spreadsheets (e.g., Excel)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Databases management (e.g., Access)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Integrated software (e.g., drills, tutorials)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5. Graphics (e.g., creating and manipulating pictures)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6. Presentation software (PowerPoint presentations)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7. Multimedia programs (e.g., DVD)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

B. Internet skills include:

<table>
<thead>
<tr>
<th>Application</th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
<th>Expert</th>
<th>Never Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Receive and send e-mail (with attachments)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2. Browse the World Wide Web (WWW)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Use remote login (TELNET)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. Create a web page on the World Wide Web (WWW)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5. Use search engines (e.g., Google, Yahoo)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6. Upload/download files to/from the internet</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7. Participate in on-line chat rooms</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8. Instant messaging (Messenger)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9. Participate in on-line Forums</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
PART FOUR: PERCEPTIONS OF THE INTERNET

INSTRUCTIONS: Please check (x) in the box that best describes your level of agreement with each of the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Use of the internet increases my social prestige.</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3. Use of the internet increases my access to information.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4. The Internet is easy to understand and use.</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5. My job provides opportunities for me to learn about the Internet.</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>6. My job provides opportunities for me to teach about the Internet.</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>7. A large number of my colleagues currently use the Internet.</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>8. The Internet has the potential to enhance EFL instruction.</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9. EFL teachers should be educated/trained to use the Internet in instruction.</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>10. Using the internet saves time and effort.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>11. The Internet offers opportunities for new teaching techniques.</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>12. Internet use fits well into my curriculum goals.</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>13. Internet can make learning English easier and more efficient.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>14. Internet use does not contradict with my religious and social manners.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>15. Internet can be used to teach pronunciation and speaking.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>16. Internet can be used to teach grammar.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>17. Internet can be used to teach reading and writing.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>18. Class time is not enough to include internet use.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>19. Internet use fits my student’s learning styles and level of internet expertise.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>20. I like to know about resources available on the internet for EFL instruction.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>21. Using the internet offers me cheaper access to others.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>22. I will use the Internet in my teaching in the future.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>23. Using the internet makes teaching more interesting.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>24. Using the internet in teaching fits my personal preferences.</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

PART FIVE: DEMOGRAPHIC INFORMATION

INSTRUCTIONS: Please answer all of the following questions by checking __X__ in the appropriate spaces:

1. How old are you? 20-29 years...... 30-39 years...... 40-49 years...... 50 years and more......

2. What is your monthly average income in Saudi Riyals? 5,000 or less...... 6,000-10,000...... 11,000-15,000...... 16,000 and over......

3. What is the highest academic degree attained? PhD.......... Masters.......... Bachelor's........ Other, please specify........

4. From which country you attained your highest academic degree? (e.g., KSA, USA, Britain, etc.) ......................

5. Are you a Saudi citizen? No............ Yes............

6. How long have you been teaching English? 1-5 years(s)...... 6-10 years...... 11-15 years...... 16 years and more......

7. How long have you been using computers? One year or less...... 2-5 years...... 6-9 years...... 10 years and more......

8. How long have you been using the Internet? One year or less...... 2-5 years...... 6-9 years...... 10 years and more......

9. Have you ever attended any training course, workshop, or seminar on using the internet?
   ☐ No  ☐ Yes, if “yes”, please specify the number of hours and/or days: ........... hours ........... days
10. Do you prefer using old teaching methods (e.g. grammar translation, drills) over new ones (e.g. interactive, communicative, and social activities)?

No…… Yes……

11. Where do you teach? At College of Technology at ………………

What comments do you have about using the Internet for EFL instruction and the limitation of such use?

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*** If you would be willing to participate in the follow-up interviews, please provide your name, address, phone number, and e-mail:

Name: ____________________________________________
Address: __________________________________________
Phone: __________________________ E-mail: ____________

THE END

THANK YOU VERY MUCH FOR YOUR VALUABLE TIME AND ASSISTANCE!
Appendix B: Questionnaire Instrument
(Arabic Version)
الجزء الأول: استخدام شبكة المعلومات (الإنترنت)

التعليمات: عبر عن مدى استخدام الإنترنت في الأغراض التالية ووضع إشارة واحدة فقط في مكان التنسيق أمام علامة اختيارية.

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<thead>
<tr>
<th>ماذا تم استخدام الإنترنت للغرض التالي؟</th>
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<tbody>
<tr>
<td>استخدام طاقم من أجل مشاركة الرأي</td>
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<tr>
<td>للاطلاع على المحتوى</td>
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<td>مشاركة الملفات</td>
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</table>

الملاحظة: لا تؤثر على علامة اختيارية في مكان التنسيق

الجزء الثاني: إمكانية استخدام الإنترنت

بين إمكانية استخدام الإنترنت في الأغراض التالية ووضع إشارة واحدة فقط في مكان التنسيق:

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الملاحظة: لا تؤثر على علامة اختيارية في مكان التنسيق
## الجزء الثالث: الخبرة والمعرفة بالحاسب الآلي والإنترنت

### الاستخدام مطلقاً:

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<thead>
<tr>
<th>مهارة</th>
<th>متغير</th>
<th>مستوى مهارة</th>
<th>ملاحظات</th>
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## الجزء الرابع: موقف تجاه الإنترنت

الرجاء الإجابة على جميع الأسئلة لوضع رأيك في قضايا الإنترنت للتعبير عن مدى موافقتك أو معارضتك لكل من الجوانب التالية:

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الجزء الخاص: المعلومات الشخصية

الرجاء الإجابة على جميع الأسئلة التالية بوضوح علامة (✓) في الفراغ المناسب:

1. كم العمر؟
   - من 20-29 سنة
   - من 30-39 سنة
   - 40 سنة أو أكثر
   ✓ 50 سنة فأكثر

2. ما معدل نكح الدهر بدولت السعودية?
   - 0-5
   - 6-10
   - 11-15
   - 16,000
   - 20,000
   ✓ 25,000 وأكثر

3. ما مدى تعلمي تعلم علوم مهنية؟
   - بكلوروس
   - ما يعنون
   - من السعودية
   - من أمريكا
   - من نيجيريا
   - أخر
   - عدد من فضلك
   ✓ عدد من فضلك

4. من أي دولة حصلت على أعلى مستوى تعليمي؟
   ✓ السعودية
   ✓ أمريكا
   ✓ نيجيريا
   ✓ عدد من فضلك

5. هل التعلم جيد؟
   ✓ نعم

6. كم عدد سنوات الخبرة في تدريس اللغة الإنجليزية؟
   - من 1-5 سنوات
   - 6-10 سنوات
   - 11-15 سنة
   - 16 سنة فأكثر
   ✓ 16 سنة فأكثر

7. كم عدد سنوات الخبرة في استخدام الإنترنت؟
   - من 1-5 سنوات
   - 6-10 سنوات
   - 11-15 سنة
   - 16 سنة فأكثر
   ✓ 16 سنة فأكثر

8. هل تستخدم الإنترنت كورس تدريبي أو خدمة للبحث؟
   ✓ لا

9. هل تمتلك إستراتيجية تدريس التلقائية (تماير التدريس والتدريس المتعدد) على الإنترنت؟
   ✓ لا

10. هل تمتلك نموذجًا التدريس الحالي في تدريس اللغة الإنجليزية وما هي المزايا التي تحصل من ذلك؟

11. هل تتيحك التدريس التي تدريس بها؟

ما هو رأيك الشخصي حول استخدام الإنترنت في تدريس اللغة الإنجليزية وما هي الفوائد التي تحصل دون ذلك؟

إذا كنت ترغب في المشاركة في المقابلة الشخصية التالية بخصوص موضوع هذا الاستبيان، الرجاء كتابة اسمك وعنوان عملك، ورقم هاتفك (الجوال) والبريد الإلكتروني في الفراغ التالي:

اسم:
عنوان:
الجوال:
البريد الإلكتروني:

*** من فضلك بعد الإنتهاء أرسل نسخة مصرف على البريد الإلكتروني: al-asmar444@icloud.com أو

شكراً جزيلاً على تعاونك وتخصصك جزء من وقتكم الثمين لتفعيل هذا الاستبيان
Appendix C: Interview Instrument
(English & Arabic)
Interview Questions

Please answer all the following questions in details:

1. Do you advocate the use of the Internet for educational purposes? Why or why not?  

2. Which factors, if any, do you think limit your use of the Internet in EFL instruction?  

3. How do you think EFL teachers at the Colleges of Technology can make appropriate adoption of the Internet for language instruction?  

الرجاء الإجابة على جميع الأسئلة التالية بالتفصيل:

1. هل تؤيد استخدام الإنترنت في أغراض تعليمية؟ لماذا؟

2. ما هي الأسباب التي تعوق استخدام الإنترنت في تدريس اللغة الإنجليزية؟

3. كيف يمكن للمراسمة لللغة الإنجليزية بالكتب التقنية على التطبيق الأساسي للإنترنت في التعليم؟
Appendix D: Cover Letter  
(English Version)
The Use of the Internet Among EFL Teachers at the Colleges of Technology in Saudi Arabia

Purpose of the Study

The purpose of the study is to describe the level of use of the Internet by EFL teachers at The Colleges of Technology in Saudi Arabia. In addition, the study investigates the relationship between the level of adoption of the Internet and the following selected variables: personal characteristics, access to the Internet, computer and Internet literacy, and perceptions of the Internet.

This questionnaire is divided into five parts; each part and/or set of questions has instructions for completing. These parts ask about your use of the Internet, access to the Internet, computer and Internet literacy, perceptions of the Internet, and personal characteristics.

Please take a few minutes to read each set of questions carefully and respond accordingly. In addition, note that this survey will be tracked for a response, however all of the given responses will be confidential and used for research purposes only.

Note: Please note that your participation is voluntary and that you can withdraw from the study at anytime without penalty. Also, it is recommended to answer all questions but if it happens that you skip any question, you can do with no penalty whatsoever.

We greatly appreciate your participation and would like to thank you very much for completing and dropping off this questionnaire in the box located in the secretary office as soon as possible.

Secondary Investigator

Ali Al-Asmari
School of Teaching and Learning,
The Ohio State University
Tel. (614) 397-1508
e-mail al-asmari.1@osu.edu

Principle Investigator, Advisor

Dr. Alan Hirvela
Assistant Professor
Language Literacy & Culture
College of Education, OSU
Tel. (614) 292-0137
e-mail hirvela.1@osu.edu
Appendix E: Cover Letter
(Arabic Version)
メディ وكييفية استخدم مدرس اللغة الإنجليزية

بالكليات الطبية بالسعودية للاستمارة

أخي الفاضل/ مدرس اللغة الإنجليزية

المكرم

والسلام عليك ورحمة الله وبركاته

بداية أشكرك على المشاركة في تعليمة هذا الاستمارة الخاص بمعنى التكاليف ليل درجة الدكتوراه في تدريس اللغة الإنجليزية عبر الإنترنت. إنك مهتم بمجال تدريس اللغة الإنجليزية وتمكنت من إجابة أسئلتك بشكل دقيق ودقيق. نحن نقدر جهودك في تدريس اللغة الإنجليزية ونود أن نشكرك على مساعدتك في تطور التدريس في المجال.

بين دبك أشياء لم يستخدمها прежде في اللغة الإنجليزية. فيما يلي بعض الصفحات المحدثة عن النشاط الذي لديك في اللغة الإنجليزية، ونود أن نشكرك على مساعدتك في إجابة أسئلتك. نحن نقدر جهودك في تدريس اللغة الإنجليزية ونود أن نشكرك على مساعدتك في تطور التدريس في المجال.

نأمل أن يكون الاستمارة في خمسة أجزاء، لكل جزء تعليقات الخاصة به. الرجاء النظر إلى الاستمارة والبحث عن جزء معين. ثم الإجابة على كل فترة بحبك بطبعه على ما تم ذكاآدن لم توضح حتى تختص للباحث التواصل إلى نتائج ذكاآ في ميكانيك تريجمه الإضافية. كانت ذات فائدة.

وأخيراً أشكرك على مساعدتك في استمارة عن الإجابة على هذا الاستمارة. سلاناً السلامة على وجه أن يكون ازداد حسنات و أن تزيد خير الجزاء وأن يزرعنا جميعاً الإخلاص في القول والعمل، وأنا دعاً أن التحية للله في عامين.

أخوك

الباحث / علي محمد الأسري

جامعة وادي الحكومية

مدينة كولومبيا بولاية أوهيو

Office of Academic Services
614-292-2332

Integrated Teaching and Learning
614-292-5055

Language, Literacy, and Culture
614-292-6314 or
614-292-6393

Mathematics, Science, and Technology Education
614-292-6330

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Appendix F: Panel of Experts
PANEL OF EXPERTS

Dr. Alan Hirvela
Assistant Professor
Language Literacy & Culture
College of Education
The Ohio State University

Dr. Joseph Gliem
Associate Professor
Human & Comm. Research Development
College Of Food, Agricultural, & Env Sci
The Ohio State University

Dr. Christopher Zirkle
Assistant Professor
Instructional Technology
College of Education
The Ohio State University

Dr. Mahdi Alosh
Associate Professor
Near Eastern Languages & Culture
College of Humanities
The Ohio State University

Dr. Nahad Al-Khalidi
Associate Professor
Veterinary Preventive Medicine
College of Veterinary Medicine
The Ohio State University

Dr. Abdulkafi Albirini
Near Eastern Languages & Culture
Graduate Teaching Associate
The Ohio State University

Dr. Abdulaziz Abdulaziz
Human Resources Development
Graduate of The Ohio State University

Mr. Imad Felemban
PhD Candidate
Computer Engineering
The Ohio State University
Appendix G: IRB Approval
BEHAVIORAL/SOCIAL SCIENCES
INSTITUTIONAL REVIEW BOARD
RESEARCH INVOLVING HUMAN SUBJECTS
THE OHIO STATE UNIVERSITY

ACTION OF THE REVIEW BOARD

Research Protocol:


presented for review by the Behavioral/Social Sciences Institutional Review Board to ensure the proper protection of rights and welfare of the individuals involved with consideration of the methods used to obtain informed consent and the justification of risks in terms of potential benefits to be gained.

The protocol was APPROVED by expedited review.

NOTE: The committee approved the waiver of documentation of informed consent for this study in accordance with 45 CFR 46, section 117 (c)(3), as participation in the questionnaires and interviews presents no more than minimal risk to the subjects and does not involve procedures that would normally require consent outside of this context.

Approval for proposed research includes all materials submitted by the investigator unless otherwise noted.

It is the responsibility of the principal investigator to retain a copy of each signed consent form for at least three (3) years beyond the termination of the subject's participation in the proposed activity. Should the principal investigator leave the University, signed consent forms are to be transferred to the Behavioral and Social Sciences Institutional Review Board for the required retention period. This application has been approved for a period of not more than one year. You are reminded that you must promptly report any problems to the Review Board, and that no procedural changes may be made without prior review and approval. You are also reminded that the identity of the research participants shall be kept confidential.

Date: February 28, 2005 Signed:

Chairperson

be-023b Behavioral approval letter (98-54)
Appendix H: Approval of the Study by the GOTEVOT
المحكمة: العربية السعودية
المؤسسة العامة لتحصيل البلاء والتدريب المهني

الرقم: ١٨٨٩
التاريخ: ٩/١١/٢٠١٨
المشغول: ٥

وفقه الله
سعادة/ عميد الكلية التقنية ب...
السلام عليكم ورحمة الله وبركاتكم

أفيد سعادتكم بأن عضو هيئة التدريب بالكلية التقنية بـ أبا الأستاذ علي بن محمد الأسمري المبتعث حالياً للولايات المتحدة الأمريكية للحصول على درجة الدكتوراة في مجال اللغة الإنجليزية من جامعة أوهايو الحكومية بصدور جميع بيانات
الإنجاز بحثه لنيل الدرجة، حيث يركز البحث على مدى ويكيفية استخدام مدرسي
اللغة الإنجليزية في المدخلات التقنية لخدمة الإنترنت في تطوير آفاقهم المهنية
والتدريسية.

لذا تجدون برفقتي إستياء البحث، أمل توزيعه على المعلمين مدرسي اللغة
الإنجليزية بالكلية لتبثه ومن ثم إرساله للإدارة العامة للإشراف الفني بأسرع وقت
ممكن حتى نتمكن من تسليمها للزميل. شاكرين لحكم حسن تجاوبكم.

وفقكم بخير

مدير عام الإشراف الفني
د. سعيد بن تركي اللغة

١٩٢
Appendix I: Translation of Approval of the Study by the GOTEVOT
[Translation of the Arabic version of the recruitment letter being sent out by GOTEVT]

*****

Kingdom of Saudi Arabia
General Organization of Technical Education
and Vocational Training (GOTEVT)

Re: Simplifying a researcher task.

Dear Dean of College of Technology,

This is a request to simplify Mr. Ali Al-Asmari’s task in your college. Mr. Al-Asmari is one of the faculty members at the College of Technology in Abha. He is completing the requirements of his PhD in the field of Teaching English as a Second Language from The Ohio State University. Currently, Mr. Al-Asmari is in the process of data collection for his dissertation topic, “the use of the Internet by EFL teachers in the Colleges of Technology in Saudi Arabia”. His study is of importance to our institutions and will contribute to our planning for better English language teaching and learning in the colleges of technology in the near future.

Please help the researcher to locate and distribute his study’s questionnaire to all English language teachers in your college. Thank you in advance for your cooperation.

Sincerely,

Dr. Saeed T. Mullah
Directorate General for Colleges of Technology
GOTEVT, PO Box 7823,
Riyadh 11472,
TEL: 1 405-2770
FAX: 1 406-5876

A copy to file
Appendix J: List of all Colleges of Technology in Saudi Arabia
List of All Colleges of Technology in Saudi Arabia

1. College of technology at Riyadh
2. College of technology at Abha
3. College of technology at Jeddah
4. College of technology at Dammam
5. College of technology at Hofuf
6. College of technology at Bureydh
7. College of technology at Bahah
8. College of technology at Bishah
9. College of technology at Najran
10. College of technology at Jizan
11. College of technology at Hail
12. College of technology at Jouf
13. College of technology at Kaffa
14. College of technology at Ras
15. College of technology at Khurij
16. College of technology at Dawadmi
17. College of technology at Taif
18. College of technology at Zolfi
19. College of technology at Gofedah
20. College of technology at Gowyiah
21. College of technology at Majmaah
22. College of technology at Madinah
23. College of technology at Makkah
24. College of technology at Tabook
25. College of technology at Haft-Elbatin
26. College of technology at Khamis Mushait
27. College of technology at Arar
28. College of technology at Wadi Aldawaser
29. College of technology at Gariyat
30. College of technology at Yandou
31. College of Agricultural technology at Buroydh
32. College of Telecom and Electronics at Jeddah
33. College of Telecom and Electronics at Riyadh
Appendix L: Interview Transcription Key
Interview Transcription Key

[...]  Explanation added for clarification of meaning
(…)  Speakers’ words edited out
...  Incomplete thought or change of thought