INTRODUCTION

Although a vast majority of literatures have discussed topics on online learning at great length, only a small number deals with using the Web for instructional purposes. Out of this number, very few have touched upon issues in using the Web to supplement campus-based courses. In most, the issues seem to be out-of the spotlight, and thus the discussion on the issues tend to be very superficial. This paper attempts to discuss some of the issues that need to be taken into consideration by those contemplating to design Web pages for online instruction, particularly to support on-campus courses or to establish a student-centered self-access learning. It assumes no prior working knowledge of online instruction on the part of the readers. It is hoped that this paper will shed some light on 1) why online learning fails to achieve its objectives, and 2) how educators may be able to effectively use the Internet technology to improve the quality of teaching. It is also hoped that those who are planning to use the technology to supplement on campus courses will be able to put the technology into use without experiencing much difficulty and frustration.

LITERATURE REVIEW

Advantages of online learning

A number of studies have documented the use of the Internet in educational fields (Newton, Marcella and Middleton, 1998:173; Turoff, 1995), particularly in distance education (Kaye, 1989) and language teaching (Soh Bee Lay & Soon Yee Ping, 1991; Ortega, 1997). The advantages of this technology have attracted many instructors widely to use it without

difficulty and frustration.

Web-based learning

Most recently, the World Wide Web (WWW) with its ability to deliver multimedia elements, is becoming very popular among educators to deliver instruction. Not only can it deliver pictures and sounds, it can also be made interactive by employing JAVA , a special programming language. Known widely as Web Based Training (WBT), Web Based Learning (WBL), or Web based Instruction (WBI), this approach makes use of the Web to facilitate the delivery of the instruction, interactions, and feedback (Baron, 1998:356). The writer shall use the term Web-based learning (WBL) to facilitate the discussion in the remaining section of this paper.

Web-based learning, in order to be effective, requires the interactions between three elements: the learner, the teacher and the materials (Oliver, Omari and Herrington, 1998:122). The interactions between these elements influence the outcome of the learning. Baron (1998) puts forth that a learner may "physically" interact with the Web-based materials, however without cognitive engagement, meaningful learning may not take place.

Many instructional Web pages are designed for independent learning (Oliver, Omari & Herrington, 1998;). This means an individual student gets to work on a computer alone. Independent learning is most suitable in situations where learners have different learning abilities. However, "independent learning can often leave a learner passive and inactive" (Oliver, Omari & Herrington, 1998: 123) Therefore, according to the researchers, the effectiveness of independent learning have always been subjected to criticism. Studies (Turoff, 1995; Hiltz,1995) show that collaborative learning is a better alternative to independent learning.

Collaborative learning can be defined as a learning process that stresses "group or cooperative efforts among faculty and students" (Hiltz, 1995). Some advantages of collaborative learning include: 1) it helps "individuals to make progress through their zones of proximal development by the activities in which they engage", and 2) "personal communication enables and encourages learners to confer, reflect and helps to develop meaningful learning" (Oliver, Omari & Herrington, 1998:123).

Oliver, Omari & Herrington (1998) explored various implementation strategies –collaborative activity versus individual work, working with printed guide versus working with no guide, and how the strategies affected learner behavior and engagement in a classroom-based WWW learning activity. For this study, the researchers chose "a module from the course Multimedia Networking and Communications" (Oliver, Omari & Herrington, 1998:126). Next, a lesson which required the use of the WWW along with a Web-based document entitled "Designing Home Pages" were prepared. Fifty six students who were taking the course were identified as the subjects; half of which were given a printed guide as a supplement to the Web-based document, leaving the other half to work solely on Web-based document. To add complexity, some of the subjects were to work independently, whereas some were to work in small groups. The study concluded, among other things, that implementing classroom-based WWW learning activities as collaborative

exercises supported by guiding printed guide notes has many advantages compared to individual and unguided work.

In a different study, Watson & Rosett (1999) examined the strategies used by three different Web sites "for attracting, educating, informing, and retraining the students"(35). The Web sites are:

a. DigitalThink (www.digitalthink.com), a site teaching Introduction to Javascript,
b. NETg (www.netg.com), a site offering a course in Oracle SQL, and
c. ZD University (www.zdu.com), a site offering a course in Web design with Hot Dog Pro.

Some of the strategies discussed by the researchers include: 1) helping the learners to anticipate what to learn, 2) keeping tract of the learners' progress, giving the learners a sense of location and orientation, 3) giving learners some forms of control of the learning process, and 4) maintaining the learners' motivation and persistence. The researchers concluded that the strategies employed by the three Web sites work and achieved their intended objectives.

Attitudes and Web-based learning

Brett (1996) investigated learners general reaction to multimedia learning efficacy, and attitudes toward multimedia as an independent learning tool. The researcher finds strong favourable attitudes toward multimedia and its use in independent learning. As a result the researcher recommends, among other things, using multimedia for self-access learning. Although the Web has the capability of delivering multimedia content, and being interactive, Hiltz (1997) cautions that simply making the facility available is not enough. The use of the facility needs to be made an integral part of the assessment. Otherwise, if the facility is available, but students are not being graded for using it, very few of them will attempt to use it. This is because online learning requires individual's initiative, motivation and persistence.

USING WBL TO TEACH ENGLISH PHONETICS AND PHONOLOGY

SallehHuddin (1998) conducted a study on the suitability of using the Web to deliver supplemental tutorial materials for English Phonetics and Phonology (VC1623), an on-campus course for students majoring in English Language Studies (ELS) at Universiti Kebangsaan Malaysia (UKM). This study came about as there was a need to find a suitable medium for delivering self-access materials to supplement the course. This need arose because:

1. Past experiences show that many students majoring in English Language Studies(ELS) performed unsatisfactorily in English Phonetics and Phonology because of:

a) limited proficiency in English,
b) inability to deal with many abstract concepts, and
c) insufficient training or exercises.

2. Many of these students expressed their desire for extra tutorials. However, scheduling problems, in addition to instructor's workload made this impossible.

3. One alternative was to make available suitable materials for self-access learning, and students could get these materials from the resource center. Unfortunately, logistics and scheduling problems, and lack of suitable audiovisual materials such as tapes for pronunciation practice and video demonstrating the movement of articulators, made this alternative unappealing. Thus, the Web, which allows unlimited access to the materials, and which offers the capability of delivering multimedia elements seemed to be the most suitable option.

For the purpose of the study, a Virtual Classroom for VC1623 was created (Figure 1). The virtual classroom is made up of a collection of Web pages providing supplemental tutorial and exercises on the first few topics of the course. Some of these Web pages required the students to answer questions-–multiple choice (Figure 2), Yes-No questions, fill-in-the-blanks and essay questions. Some other Web pages required the students to listen to sound clips and practice producing the sounds (Figure 3) . A couple of Web pages required the students to watch a short video clip and discuss what happens to the articulators in the production of the first sound of the word "thought" (Figure 4) and "though".

Two sites (www.anytime.ukm.my and www.geocities.com/Athens/Parthenon/5002) were made available for the following reasons:

1. The main site (www.anytime.ukm.my) made use of the faculty's intranet. It takes considerably less time to download sound and video clips within an intranet. However, this site was only operational during office hours.
2. The mirror site (www.geocities.com/Athens/Parthenon/5002) was created to provide the same facility except excess to certain large audio and video clips. Unlike the main site, this one is accessible 24 hours a day.

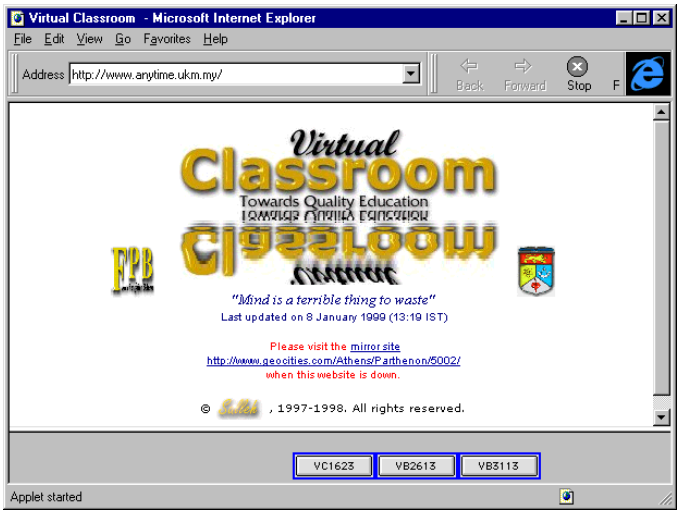

Figure 1: The Virtual Classroom

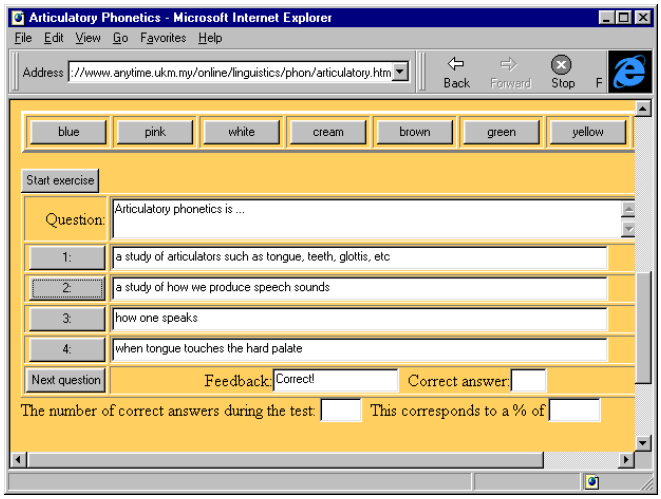

Figure 2: Multiple Choice Exercise – using Java

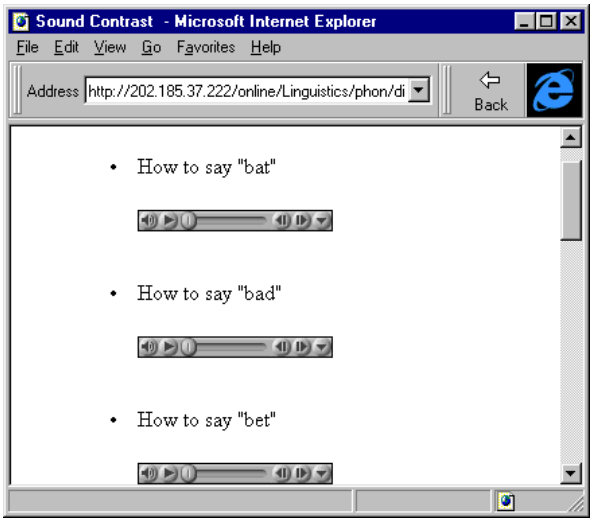

Figure 3: Listen and Practice producing English sounds

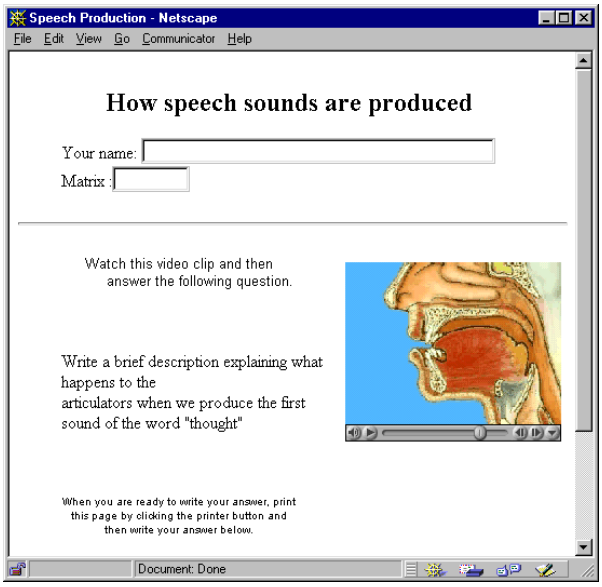

Figure 4: An exercise to practice answering essay question

The subjects of this study were 27 second-year ELS students who were taking VC1623 in the first semester 1998-99 session. These students were considered special, and would benefit from supplemental instructions using the Web for a number of reasons:

1. they failed "Introduction to Language and Linguistics" in their first year,
2. their proficiency in English was considered mediocre,
3. they had problems adjusting to the tertiary academic lifestyle.

For security and record purposes, each individual student was assigned a username and a password to access certain Web pages (Figure 5) at the main site. The use of the facility was not only encouraged but also graded. Access to the Web site was monitored through the Web server's log file. The researcher also made frequent visit to the computer lab to find out if the subjects encountered any problem using the facility, and to identify the patterns of difficulty faced by the subjects. Furthermore, three quizzes designed to test the subjects' knowledge and understanding of basic concepts in certain topics were designed.

Observations were also made to note how the subjects interact with the Web pages, and if they had problems with the documents. To facilitate online communication, the students were requested to obtain an e-mail address from one of many free e-mail service providers (FESP) including *Yahoo.com*, *Mailcity.com* and *Hotmail.com*. For this purpose, a hands-on workshop was conducted to help the students get an e-mail address, and become familiar with the virtual classroom.

The results of this study reveal a number of issues that need to be tackled first before WBL can prove beneficial to the ELS students.

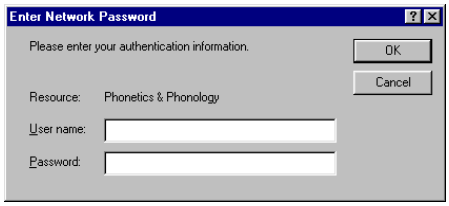

Figure 5: Username and Password required to access certain Web pages

Figure 6a: The mirror site at Geocities.com

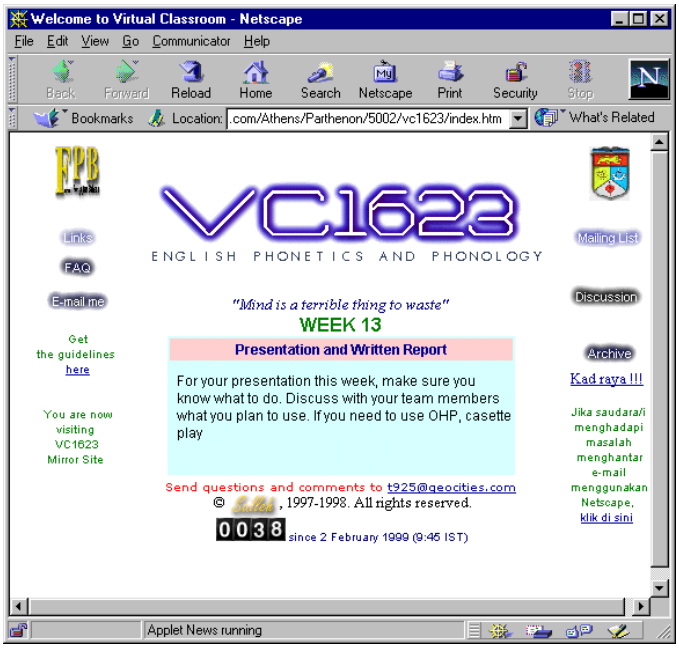

Figure 6b: How the Virtual VC1623 looks like

ISSUES IN USING THE WBL TO TEACH ENGLISH PHONETICS AND PHONOLOGY

1. Learner's knowledge about the computer, the network, and the software used.

Findings of this study show that basic computer literacy – how to turn the PC on and off, how to use Microsoft Word, how to use Netscape, does not guarantee that a student is ready to engage in WBL. Most subjects (77%) indicated that they needed more than basic computer literacy skills in order to function well in this kind of learning environment. The observations made revealed that many students had problems using Netscape, particularly when they are faced with:

1.1 Problems relating to the use of plug-ins and helper applications. Helper applications are basically programs that help the Internet browser to present certain audio and video files. Many students had problems with helper applications such as QuickTime Player, or Real Audio Player used to play QuickTime and Real Audio files respectively because they attempted to play the files using a PC which lacked these helper applications.

1.2 Problems with the interface. A number of Web pages were designed using "frames" to make the navigation easier for the students. Unfortunately, many students were stuck in frames and did not know hot to get out of it. Another example, the mirror site's Web page (Figure 6) looked almost exactly similar to the main site's Web page (Figure 1), and is displayed in a new browser window. Almost all students were not able to tell that they had reached the mirror site. Instead, they kept clicking on "go to the mirror site" until they were informed they "have arrived."

1.3 Problems with the hardware, particularly with the speakers. The study identified a number of factors that contributed to this problem : 1) the speakers were not connected; 2) the speakers were not turned on; 3) the speakers had no batteries, or the batteries were dead; and, or 4) somebody turned down the volume of the PC. The students observed experienced anxiety and frustration as they did not know what caused the problem, and let alone to rectify it.

Thompson et. al.(1998:179) describe learners' first encounter with this situation as "a daunting experience for first year students and so much energy is concentrated on mastering the interface that it interferes with the learning of new content." Therefore, there is no point in spending a lot of energy, time and money to prepare the materials when students cannot have access to the facility, do not know how to use the required software, or have problems interacting with the materials. Similar comments was also made by Cornell (1999:63).

2. Learners' level of linguistic competency.

It is easy to take for granted the level of linguistic competency of the learners when designing materials for on-line learning. The findings of this study show that the level of linguistic competency should be taken into account well before WBL materials are designed. Two things pertaining to the level of linguistic competency have been highlighted by the study: 1) listening skill, and 2) writing skill.

2.1 Listening skill – One of the tasks the learners were supposed to do was to answer multiple choice questions based on a short video clip on the how speech is produced (Figure 7). All learners involved in this study complained not being able to follow the narration in the video clip; Thus, not able to understand what was being discussed by the narrator (a native General American English speaker). As a result, the learners were not able to provide correct answer to certain questions in the exercise. From the discussion with the learners, a number of reasons giving rise to this problem were identified:

1. All of the learners were not accustomed to listening native speaker's speech,
2. the narrator was speaking at a relatively fast pace for the learners to follow, and
3. the appearance of textual information to complement the narration distracted many of the learners from their listening task.

2.2 Writing skill – Another task that the learners were supposed to do was to write a short essay based on a short animation (Figure 4) showing the movement of the articulators in the production of the speech sounds of the word "thought." The learners were required to write about the processes involved in the production of the first sound of the word "thought"; also known as voiceless inter-dental fricative. The task seemed too difficult for all of the learners who were not able to provide satisfactory answer. Most of these students lack the basic but necessary expressions to describe the processes/ the movements of the articulators in producing the speech sound. The following are some samples of their answers.

Sample 1:

The tongue at the back of the teeth. The mouth is open. There is tip of the tongue. The velum is rise. The air escape from the mouth. Labiodental.

Sample 2:

The lips are separated. Tip of tongue touching the front teeth (labiodental). The velum is opened. It is a vibrating sound. The air can be produced through the nose. Before the sound is produced the air been blocked at the dental and tongue.

The Expected Answer:

In order to produce the first sound in the word "thought," the velum is first retracted (raised) to block the air passage to the nasal cavity. At the same time, the tip of the tongue is positioned between the upper and lower front teeth. Part of the tongue touches the upper teeth to form a small gap. The vocal chords are held apart so that when air, exhaled from the lungs, passes through them, no vibration is produced. When the air stream passes through the small gap between the tip of the tongue and the upper front teeth, a hissing sound can be heard. This is how the articulators collectively work to produce the voiceless inter-dental fricative sound.

Very few students were able to provide a satisfactory answer to this type of question. Quite a large number of students were only able to give answers similar to Samples 1 and 2, despite the fact that they had had guided exercises in tutorials. From the samples, it is evident that the ELS students lack the necessary writing skill to enable them to come up with a satisfactory answer. A number of factors might have contributed to this problem:

1. limited stock of vocabulary,
2. inability to use proper sentence constructions necessary for describing processes,
3. inability to write imaginatively, and
4. inability to link basic concepts (terminology) introduced in lectures and tutorials with the task.

3. The use of special symbols.

One of the things that students learn in VC1623 is the use of the International Phonetic Association (IPA) symbols. A phonetic symbol is used to represent a speech sound. In VC1623, students do not only learn to read phonetic transcription, but they also learn to transcribe using the symbols, many of which are very different in appearance from the normal English orthographic symbols. In addition to this, they are also introduced to the description for each of the English speech sounds. Figure 8 shows some samples of the IPA symbols.

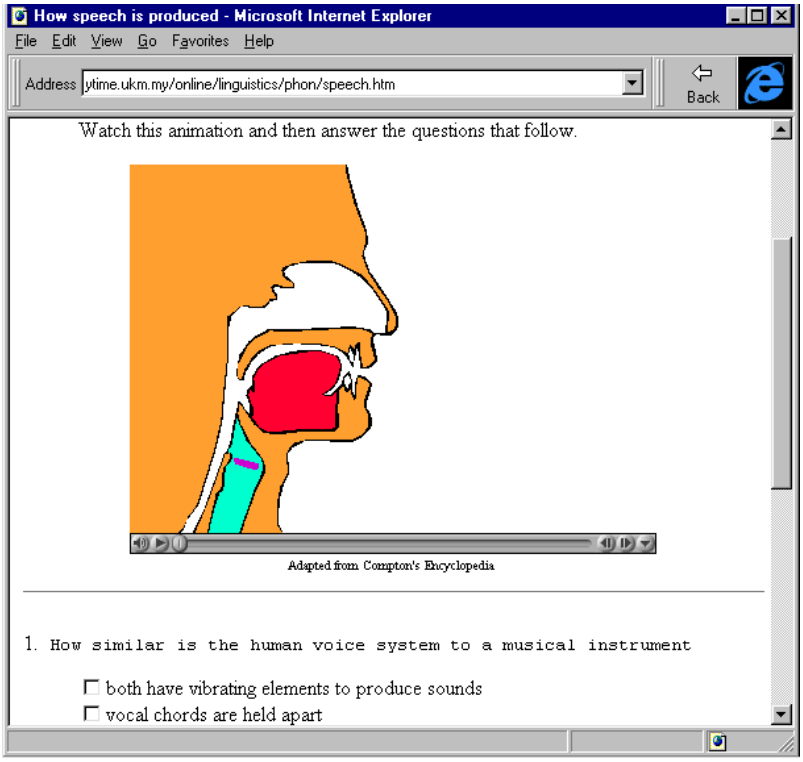

Figure 7: How speech is produced

The last sound in the word	IPA Symbol	Phonetic descriptions/ technical name
"ring"	[ŋ]	Voiced velar nasal
"bathe"	[ð]	Voiced inter-dental fricative
"cash"	[ʃ]	Voiceless post-alveolar fricative
"bath"	[θ]	Voiceless inter-dental fricative
"judge"	[ʤ]	Voiced post-alveolar affricate
"she"	[ɪ]	High front lax vowel
"key"	[i:]	High front tense vowel

Figure 8: Some examples of International Phonetic Symbols

Unfortunately, there were some problems associated with the use of the symbols in WBL.

3.1 **Phonetic Fonts Not Available.** Most PCs do not come with the phonetic fonts (The reseacher used SILDoulosIPA, SILManuscript, and SILSophia). For students who had their own PC, they could have the fonts installed for them. However, for students who depended on PCs in the computer lab, this is not normally the case. Scheduled maintenance of the PCs in the lab called for the removal of unwanted files and folders left by the users. This is to ensure that the PCs are always in their peak

performance. Often, this caused the phonetic fonts to be "uninstalled." Consequently, when a student opened a document, normally a Microsoft Word document containing phonetic text, downloaded from the VC1623 Web site, the content appeared gibberish and unreadable.

3.2 **UnQWERTYing the keyboard.** Even if the students were able to use PCs with the phonetic fonts installed, another issue that needs highlighting is the fact that the students need to be trained to use the fonts. The normal QWERTY layout does not show the layout for the phonetic fonts. Therefore, students need to be trained to use the keyboard, and the keyboard short cuts in order to get the right phonetic symbol.

3.3 **IPA fonts in HTML documents.** Basic HTML documents do not normally display phonetic fonts as they would with other fonts. A number of problems arise as a result:

3.3.1 The number of activities that can be carried out in the virtual class may be limited, and may not involve the use of phonetic fonts. For example, an exercise may not contain questions that require the students to respond using phonetic symbols.

3.3.2 Sometimes students need to use phonetic symbols to represent / symbolize a speech sound being discussed. The possibility of using the symbol with the traditional HTML document is almost non-existent. If it even exists, students may have tough time figuring out how to get the symbol. Even then this does not guarantee that the same symbol would appear when the instructor receive the answer from the student.

3.4 Another alternative to the phonetic symbol is to use the technical name to represent the speech sound being discussed. Unfortunately, all students had problem remembering the technical names for many speech sounds of English. Figure 9 shows some samples of their answers taken from Quiz 1.

The sounds	Subjects			
	55921	*55917*	*60382*	*55947*
[iː]	Open,front,unrounded	mid central spread vowel	Tense, high not rounding	High front tense unrounded vowel
[ʃ]	Fricative, voiceless, palatal	Fricative, alveolar, voiceless	Lax, low, not rounding	Fricative voiced velar
[θ]	Voiceless, fricative, alveolar	Fricative, interdental, voiced	Lax, low, rounding	Fricative voiceless interdental
[ŋ]	Voiced, nasal	Nasal, velar, voiced	Lax, centring, not rounding	Nasal voiceless velar
[dʒ]	Affricate, alveolar, voiceless	Fricative, palatal, voiced	Lax, low, not rounding	Affricate voiced velar

Figure 9: Samples of students' answers indicating problem remembering technical names for English speech sounds.

4. Support System

On-line learning is not just a matter of translating conventional lectures and course materials into HTML documents; it also means making sure that "a thorough and insightful support structure" accompanying those documents are available (Thomas et. al.,1998:150). According to Warschauer and Whittaker (1997) the support:

> *"... can take numerous forms: creating detailed handouts that students can refer to when class is finished and the teacher's personal help is not accessible, not only in the beginning but on an ongoing basis; working with the computer center to set-up log on systems and other procedures which are simple and intuitive as possible; assigning students to work in pairs or groups, both in and out of the lab ... providing details to the students about how and when they can get assistance from technology specialists or others on campus outside of the class; and being available to help students at times when they are most likely to need it."*

Watson and Rossett (1999) explains 3 reasons why the necessary support is critical: 1) to motivate the learners, 2) to show how the learners can benefit from online learning, and 3) to encourage voluntary social learning and involvement in the learning process. The findings of this study revealed some issues pertaining to the support system:

4.1. Printed Guideline on how to get e-mail address is necessary.

The subjects were instructed to get an e-mail address from one of the FESPs. Presuming that the subjects understood English, and would be able to follow the instructions provided by the FESP, no guidelines were made available. As it turned out, this was a mistake. Many subjects complained of having problems and were not able to get an e-mail address on their own. Among the factors that contribute to this problem include the tendency to skip reading on-screen instructions. This suggests that a printed guideline providing simple instructions on how to get an-email address is necessary to ensure a successful start. However, this finding is far from conclusive, and needs further study.

4.2. Help and Frequently Ask Questions (FAQ) files

In addition to the necessity for printed guidelines, this study also identified the necessity for help and FAQ files. A number of general categories, in which the problems experienced by many ELS students in the Virtual Classroom fall into, are outlined below:

4.2.1. problems joining the virtual classroom
4.2.2. problems with the hardware and the software
4.2.3. problems with the basic concepts discuss in the course.

The availability of the help and FAQ files would certainly reduce the anxiety experienced by the subjects, and reduce the amount of time needed to master the interface. This will result in the students spending more time on the content rather than on the interface.

5. Feedback and Virtual Professorship

Online tutorial is most effective when it is interactive and students can get feedback, especially if it is instantaneous. Thus for this study, a number of methods were employed to provide feedback to the students.

5.1. Java Script

The first required the use of Java script to provide instantaneous feedback for Web- based exercises. Figure 2 shows an example of this type of exercise, and part of the Java script is shown in Figure 10. The findings of this research reveal that familiarity with Java script is a must for those who plan to design Web-based exercises that provide immediate and automatic feed back. Those who are not familiar with the script had better get help from computing personnel before spending too much time experimenting, and to avoid unnecessary frustration.

5.2. Internet Relay Chat

Another method is by using synchronous communication, or better known as Internet Relay Chat (IRC). In order for two parties to communicate using IRC, they need to log in to the same IRC server, and be in the same chat room. This study found that this method was not effective for a number of reasons:

5.2.1. All the subjects were not familiar with the use of the IRC,
5.2.2. During the first four weeks of the study, none of the subjects made any attempt to enter the chat room where the researcher was "waiting,"
5.2.3. The researcher was not always able to be in the designated chat room as he had lectures and tutorials to conduct.

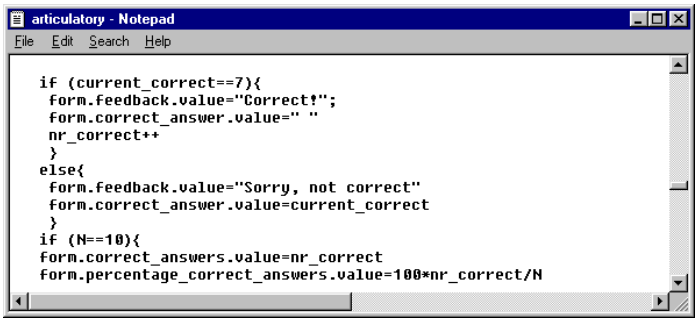

Figure 10: Part of the Java Script used to provide automatic feedback for Multiple Choice Questions

5.3. Internet Relay Chat

The third method required the use of e-mail. The good thing about e-mail is that a student can send a message to his instructor, and get a reply later on. However, as this study found out, among the disadvantages of using e-mail are:

5.3.1. The instructor needs to allocate time to read, and to reply all messages from his students. Often, depending on the number of e-mails received, the researcher had to allocate more than an hour a day for this purpose.

5.3.2. Depending on time constraint, sometimes the researcher took more than two days to respond, and by the time a student got his long-awaited response, it was no longer needed, or had become redundant.

The second and the third methods bring us to another issue--"perpetual professor" (Hiltz, 1995) – one who believes that teaching is an ongoing process, and who is not "confined to a few specific hours during the week" (Hiltz, 1995). The readers may agree with the writer that not many of us belong to this "perpetual professor" category. How many of us are willing to sacrifice family commitment, research and publication time, and conferences for perpetual professorship? One of the main reasons why educators turn to the technology in the first place is to reduce workload, so that they can concentrate on other things – research, publication, or administrative work.

CONCLUSION

WBL is an interesting new development in education today. It is undeniable that instructional Web pages can be beautifully designed, and multimedia elements can be embedded in them. There are differences between WBL and the traditional classroom that make WBL an attractive alternative to complement and supplement an on-campus course. The application of this technology to provide supplemental instructions for English Phonetics and Phonology has highlighted a number of issues—learners' level of linguistic competency, special fonts, support system, feedback and virtual professorship. They need to be taken into account in the designing process of a WBL to supplement an on-campus course. Careful planning, selection of topics and preparation of materials will ensure success in its implementation. Otherwise, it only "doubles the faculty workloads" (Hiltz, 1997:8), and causes unnecessary anxiety and frustration because all these, especially the publishing of the course materials on the Web, do not come with awards and remuneration. Neither are they considered as part of publication in certain universities.

References:

Barron, Ann. (1998). Designing Web-based training. *British Journal of Education*. 29(4) October. 355-370.

Brett. Paul. (1996). "Using Multimedia: An Investigation of Learner's Attitudes." *Computer Assisted Language Learning*. 9.2-3. 191-212.

Cornell, Richard. (1999). The onrush of technology in education: the professor's new dilemma. *Educational Technology*. 39(3) May-Jun 61-64

Harasim, Linda. (1989). "On-Line Education: A New Domain" In Robin Mason and Anthony Kaye. Eds. 1989. *Mindweave-Communication, Computers and Distance Education*. Oxford: Pergamon Press.

Hiltz, Starr Roxanne. (1995). Teaching in a virtual classroom. Paper presented at the 1995 International Conference on Computer Assisted Instruction ICCAI '95, National Chiao Tung University, Hinshu, Taiwan. http://www.njit.edu/Virtual_Classroom/Papers/Teaching.html. 19 May 1999.

Hiltz, Starr Roxanne. (1997). Impacts of college-level courses via asynchronous learning network: some preliminary results. *The Journal of Asynchronous Learning Network*. http://eies.njit.edu/~hiltz/workingpapers/philly/philly.htm. 19 May 1999.

Kaye, Anthony. (1989). "Computer-Mediated Communication and Distance Education" In Robin Mason and Anthony Kaye. Eds. 1989. *Mindweave-Communication, Computers and Distance Education*. Oxford: Pergamon Press.

Kearsley, G., Lynch,W., & Wizer, D. (1995). The effectiveness and impact of online learning in graduate education. *Educational Technology*. 35(2) Nov-Dec. 37-42.

Mowrer, Donald E. (1996). A content Analysis of student/instructor communication via computer conferencing. *Higher Education*. 32(2). 217-241.

Newton, Robert, Rita Marcella and Ian Middleton. (1998). NetLearning: creation of an on-line directory of Internet learning resources. *British Journal of Education*. 29(2) 173-176.

Oliver, R., Omari, A., & Herrington, J. (1998). Investigating implementation strategies for WWW-based learning environments. *International Journal of Instructional Media*. 25(2). 121-138.

Ortega, Lourdes. (1997). "Processes and outcomes in networked classroom Interaction: Defining the research agenda for L2 Computer-Assisted Classroom Discussion." *Language Learning & Technology*, 1.1. July. 82-93.

SallehHudin Abdul-Rashid. (1998). Using Web-based learning to help ELS students. Fakulti Pengajian Bahasa, UKM. An unpublished paper.

Soh Bee Lay & Soon Yee Ping. (1991). English by E-mail: Creating a Global Classroom via the medium of Communication technology. *ELT Journal*. Vol. 45(4). 287. Oxford University Press.

Stivers, J. (1996). The writing partners project. *Phi Delta Kappa*. 77 (10). 694-695.

Thomas, P., Carswell, L., Price, B., & Petre, M. (1998). A holistic approach to supporting distance learning using the Internet: transformation, not translation. *British Journal of Educational Technology*. April. 29(2) 149-161.

Thompson, R., Winterfield, J., & and Flanders, M. (1998). Into the World of electronic classrooms: a passport to flexible learning. *British Journal of Educational Technology*. April. 29(2). 177-179.

Turoff, Murray. (1995). Designing a virtual classroom. Paper presented at the 1995 International Conference on Computer Assisted Instruction ICCAI '95. From www.njit.edu/Virtual_Classroom/Papers/Design.html. 19 May 1999.

Warschauer, M., & Whittaker, P.F. (1997). The Internet for English teaching: guidelines for teachers. *The Internet TESL Journal*. www.aitech.ac.jp/~iteslj/Articles/Warschauer-Internet.html. 14 April 99.

Watson, J.B. & Rosett, A. (1999). "Guiding the Independent Learner in Web-Based Training." *Educational Technology*. 39.2. 27-36.