English Listening Courses: A Case of Pedagogy Lagging behind Technology

John Wong

(eljohnw@cityu.edu.hk)
City University of Hong Kong, Hong Kong KSAR

Abstract

Of the four English language skills that are often taught separately, listening requires more efforts from both course developers and learners. Unlike courses for other skills, which are mostly paper-based, listening courses are a combination of paper-based materials in the form of a course book, and sound-based materials in the form of audio on tapes/compact discs. However, learners get to keep only the course book, and can access the course audio only in class, which essentially prescribes teacher-centered lessons. Learner autonomy, if it is to take place at all, necessitates a different delivery mode. The web seems to be the perfect candidate for an alternative mode. Jakob Nielsen (2003) states that information technology is maturing. When it comes to the multimedia capabilities of the web, we can probably argue that the technology is mature. However, listening course developers are reluctant to venture to the web and are still clinging to traditional ways of conducting listening classes. This paper discusses issues behind educators' apparently slow uptake of advances in web technologies that can be incorporated into the teaching of listening skills in a straightforward manner, and attempts to propose interim approaches as solutions.

1 Introduction

Listening courses differ from other skills-based courses in a number of ways. Firstly, they were introduced to many curricula relatively late. While writing and reading are skills that need to be formally taught to native speakers, and so courses designed can be used as models for developing similar courses for use with ESL/EFL learners early, speaking and listening skills are informally acquired, and so there is a lack of formal models for use in ESL/EFL curricula. As a consequence, rather than having their own unique structures, listening exercises are based on written comprehension exercises (Brown & Yule, 1983). There is also a standard pattern in their classroom delivery. Students listen to a tape that usually lasts for a few minutes, with or without pre-listening activities on the topic, and then answer questions that test their understanding. Normally the follow-up activity is to check answers, at which stage teachers usually give some feedback. Individual teachers will do things slightly differently, but few depart from the pattern drastically.

Another main difference, from the point of view of learners, is that the challenge presented by listening course materials is felt clearly and immediately as soon as they get down to the listening tasks. Whether they are able to understand or accomplish something is more obvious when they have to listen to English than when they are reading or writing it. In this sense the teaching of listening skills can be very straightforward. The objective of a listening lesson can be as basic as helping students to understand an audio input. If the teacher can get students to hear (and understand) every word in a conversation or speech, for example, the teacher can feel that he or she has done the job. Even if they do not hear half of the content, the teacher still has a clear target

to aim at. This way of treating the teaching and learning of listening by focusing on identifying single words, phrases and sentences is usually classified as the bottom-up processing approach.

But that is the very basic objective of a listening lesson, and so it is probably considered more appropriate for lower level learners such as those in primary or secondary schools. University listening courses normally aim higher and require students to have higher levels of thinking and inference skills. There is a tendency to train students to develop listening strategies to get to the main ideas, or the gist, of listening materials, even when it is clear that learners have not been able to identify a lot of the speech sounds. This way of treating the teaching and learning of listening by focusing on the main ideas or meaning is often called the top-down processing approach.

This paper primarily addresses issues related to the design and delivery of listening courses in ESL/EFL contexts at university level. The writer has been teaching listening skills on the web for the past six years, despite the fact that listening course books and materials provided by his teaching department are all non-web based. He is a trained ESL professional, but by no means a computer programmer. He started learning the Hypertext Markup Language (HTML) ten years ago, and has been converting course materials (text and audio) to the web format wherever and whenever possible. He is certainly not alone, and his efforts are echoed by many. However, although it is obvious that many teaching professionals are doing the same, as evidenced by all the private websites dedicated to training the listening skills of ESL learners, university-wide efforts are a rarity. Yes, various university departments have digitized subject materials (e.g. legal and health audio clips) and put them online. But English listening courses offered in universities are delivered more or less the same way as thirty years ago. This state of affairs prompts him to ask the question of why it is taking ESL/EFL units so long to incorporate the web in their listening courses. He is therefore taking a few steps back to try to find out what the issues are, and to look further into the current methodologies and the possible roles of the web in bringing about changes.

As this paper focuses on the use of web technologies, the writer's discussion applies to mainly contexts where the availability of modern university facilities (e.g. classroom Internet connection, multimedia projector) is a norm. Brown and Yule (1983) further make the distinction between the interactional and transactional purposes of listening. The writer will choose to focus his discussion on transactional purposes, which refer to the communication of information and so fit neatly into the academic context, as opposed to the emphasis of the interactional purpose of listening on the creation and maintenance of harmonious interactions between the speaker and the listener, which is more relevant to social contexts. Therefore, references in this paper will mainly be made to listening activities that can be classified as transactional and requiring both the bottom-up and top-down processes. It will be argued that the top-down approach, while it is predominantly adopted by most university listening courses at the moment, has certain limitations and is based on pre-web contexts. The implication is that the advance of Internet and information technologies should have an impact on the delivery of listening courses, which are necessarily tied to the use of equipment, which, when extended to include computer hardware and software (and operating systems/ platforms), could bring about drastic changes in the implementation of listening pedagogy.

The medium of the web will be mentioned throughout the paper, and will be used as a general representation of and reference to Internet and information technologies, because of the fact that many such technologies can be, and are, seamlessly integrated into the web. The writer is making the assumption that a change of medium in the listening classroom from the traditional cassette recorder to the web (through its multimedia capabilities) does not necessitate a basic change in teaching pedagogy. In the sense that a computer connected to the web has many more audio (and video) related functions than a standalone portable media player, and that the new medium can do much more, and not less, than the old medium in the teaching and learning of listening skills, there need not be any fundamental change of methodology. English teaching professionals can continue with their top-down or bottom-up approaches after they have switched to the web when teaching listening. Or they can carry on with a combination of both approaches. If it can be assumed that most teaching professionals are comfortable using web browsers in their daily work and life, there is also no need for them to undergo any training so that they can use the web (from the end user's point of view) in their teaching. But the obvious implication is that should a methodological

change be desirable, it will be towards the direction of enhancing the quality of the teaching and learning experience brought about by the current practice.

As there have been great advances in the field of speech (recognition) technologies, such as text-to-speech, speech-to-text (e.g. HP SpeechBot), audio encoder and decoder software, specific examples will be given and possible applications of web technologies discussed.

2 The top-down processing approach and English listening courses

It has been argued recently by a number of researchers that listening has long been taught using top-down processing approaches, especially in the context of communicative language teaching, and that it is time to reconsider whether there needs to be a change of methodology. As claimed by these researchers (e.g. Ridway, 2000; Cauldwell, 2002; Wilson, 2003; Field, 2003), a problem with these approaches is that usually a large amount of class time is spent on pre- and post-listening activities, so much so that the time and efforts spent on the actual listening are reduced to a minimum.

This tendency to spend time on aspects other than the actual listening itself seems to be logistically related. In most listening classrooms, where the teacher is probably using a cassette recorder, or MD or CD player to deliver the audio material, it is difficult to locate and inconvenient to replay a particular part of the material, especially when it has to be done repeatedly when certain utterances are not caught by students time and time again. (Many of us may still remember our own teachers rewinding or fast-forwarding a tape to look for a particular utterance to re-play and having to endure the annoying cassette squeaking all the way through.) Teachers are also concerned that students feel bored when something is repeated too many times. But a probably more significant and related problem is that the teacher is the only person who has a copy of the audio (and video) materials used in a listening course. Students have a copy of the course book but can practice course materials only in class time. However, as class time is limited, intensive listening drills over difficult sounds, even after they have been identified in the course of listening to a particular dialogue or speech (or clip, as we often say now), is usually considered impossible. A natural compromise is to focus on the communicative aspects of the listening materials, i.e. on developing listening strategies to get at the main ideas. For example, of the 24 suggestions on a standard listening comprehension exercise template published on a comprehensive personal website dedicated to all the four skills in English (see Gillett, n.d.), at most only 5 have anything to do with listening to hear the actual words, and all the rest are related to strategies and listening for gist. But as Ridway (2000) points out, strategies are difficult to learn and may even be useless for listening.

We have become so used to the established ways of running skills-based courses that we tend to neglect the fact that the teaching of listening will be and should be changed by the development of relevant technologies. We also seem to have overlooked the fact that listening is the only skills-based course that "heavily" involves the use of technology, i.e. a piece of equipment, for example, a CD player (and CD-ROMs), and all the necessary recording sessions in a studio. Obviously, we can think of innovative uses of the computer, or the web, when it comes to the teaching and learning of other skills. But the main difference between these other skills and listening is that the use of technology or equipment such as the computer is optional for the former, but essential for the latter. In the sense that listening course developers started with cassette tapes, moved on to MDs and CD-ROMs, they are sensitive to the development of technologies. However, it has been a biased use of technologies that are tangible and portable, which are, essentially, inflexible hardware. There is no real improvement in terms of the manipulation of content delivery. It is really an extension of the cassette recorder mentality, which means the teacher still has complete control of the learning situation. In other words, it is just the same old wine in new bottles. Things still taste more or less the same. Information and web technologies that do not cost much, in the sense that they are mostly generic technologies and software developed for use by the public, but much more versatile, ironically, do not get the attention they deserve. When dotcoms and private

individuals are tapping into the multimedia capabilities of the web and building highly interactive web listening activities, universities are largely indifferent.

Of course, there is the possibility that because listening courses have always engendered additional costs from the purchase of equipment, and a lot might have been acquired at different stages, universities may find it difficult to justify abandonment of equipment and all accompanying peripherals and accessories before they have run their natural course. But the fact is the justifications are really strong. Any teaching department that is turning a deaf ear to them is doing their students a huge disfavor and putting them at a big disadvantage.

3 IT and the bottom-up processing approach

This focus on the communicative importance of listening materials, however, is arguably justified in view of the lack of alternative sound listening approaches and the necessary technology to accompany them. Language teaching professionals and researchers in the past few decades might well be making the best use of the then existing facilities. Time has changed, though. The web has become much more sophisticated. It is offering new possibilities not even imaginable ten years ago. It is now much easier to deal with the physical, and not just communicative, aspect of speech sound. And, more importantly, researchers have become skeptical of the value of the communicative approach, not just in itself but more because of the fact that it has long been the only dominant one, and new ideas have sprung up. It is time we looked at and re-evaluated the current practice. At the same time, we should be open to new and maybe even drastically different approaches.

Cauldwell (2002) proposes a different approach to teaching listening when he describes the relationship between the phonology of English and the teaching of listening to ESL students. He claims that because traditional phonology is based on the tidy forms of speech, it has a negative effect on the teaching of listening. He argues that because everyday speech is "extremely messy", the traditional representation of speech sounds as phonemes and citation forms (i.e. dictionary forms, as when a word is pronounced in isolation) in the teaching of listening is inaccurate. He proposes new ways to teaching listening based on an understanding of fast speech, and on treating listening as a goal in itself rather than as a means to an end.

It seems that Cauldwell's assumption is that citation forms are easy to learn or identify, although in reality that is not always the case. The writer created web-based listening tasks to test students' ability to identify individually pronounced vocabulary items and found that even the citation forms of many relatively simple words can be difficult for university level ESL students (See Appendix A). Consider, for example, the inherent difficulties of English consonant clusters for language learners whose first language does not have a lot of them. But a very important point Cauldwell has tried to make is that teachers in listening lessons typically do not spend enough time with students on the actual listening materials. Too much time has been spent on pre-listening discussion tasks and post-listening activities.

Wilson (2003) promotes a discovery listening approach to strike a balance between the current focus on meaning in teaching listening and a focus on form. He recommends a discovery approach to target at both sound and word recognition by adapting the dictogloss method, a text reconstruction technique. He argues that the much advocated top-down processing (listening for gist and listening strategies) should not be adopted at the expense of bottom-up processing, which is what most ESL students primarily have to struggle with when exposed to listening tasks. He further argues that "learners' ultimate aim is to rely less on contextual guesswork, and more on hearing what was actually said" (2003, p. 336), which obviously pinpoints the current lack of efforts and interests in the physical sounds of speech. His ideas in fact concur with what Cauldwell has been promoting.

Field (2003) argues that two of the most common perceptual causes of breakdown in understanding are the difficulty of lexical segmentation, i.e. the identification of words or word boundaries, and the fact that standard citation forms are often modified in connected speech. He identifies five aspects of modification, which are reduction, assimilation, elision, resyllabification

and cliticization, and suggested ways for learners to deal with these problems, often involving the time-honored dictation approach, though modified to a great extent to employ basic auditory phonetics. In essence, he believes that many high level breakdowns in communication originate from low-level listening problems and, therefore, it is not appropriate to focus most of the class time on top-down processing approaches. Rather, we should concern "ourselves more than we do with speech as a physical phenomenon" (2003, p. 325), and reduce the time spent on teaching listening strategies. Listening teachers may have to first familiarize themselves with the five aspects of modification before they can introduce a different approach in their teaching. But any trained professional will find them easy enough to handle.

4 The web as the perfect medium

Jakob Nielsen (2003) states that information technology was maturing, a comment which naturally included the web. In fact, he observes that "investments in new technology have slowed and productivity has surged because companies are focused on making existing technology work rather than chasing the latest fads" (2003, Making IT Work section, ¶ 2). What it means to educators or anyone interested in incorporating information technologies in their teaching is that if we indeed want to embrace the IT wave, there is no need to wait for the next one. There is already more than enough for use. If one wants to add interactive learning tasks such as automatic answer checking or mouseover gloss to their webpages, for example, a good resource to go to is a website that offers free javascripts (e.g. JavaScript Source, http://javascript.internet.com), which are client-side programming scripts that non-programmers can learn to use relatively easily without having to worry about server-side complications. One of the most popular ones has a script count of 2188 at the time of writing. Any one single script there can possibly be used and customized for use in very different ways.

Text-based interactivity aside, the multimedia capabilities of the web render it the perfect medium for the delivery of course materials that involve audio and video. Bandwidth is becoming less and less of a concern in recent years. Downloading time of audio and video files from streaming servers has vastly improved. There is not much difference between playing a video file from a streaming server (which is itself a computer) and a stand-alone computer or a CD player, with the exception that maybe the latter outperforms the server with its audio quality, which is, however, not the most significant concern for academic listening practice. Although Nielsen (2003) also argues that web browsing "sorely needs improvement", for the purpose of delivering listening materials online, the web has become probably the best medium.

A CD player or even a stand-alone computer can play only audio and video materials that the teacher has brought with him/her to the classroom. While it is also possible and in fact easier to play, fast-forward or rewind a CD with a computer program such as the Windows Media Player, it is not possible to do the same things with a tape or MD. Few teachers will argue for the use of cassette recorders in this day and age, although it is obviously a case of habits die hard and it may be many more years before they are eventually phased out. But even with a stand-alone computer, the CD-ROM drive is useful only when the teacher is there to use it. After class, it is just an empty drive. However, a computer connected to the web can easily tap into the multimedia resources there mostly free for the taking. One may need to install plugins in the computer such as the Real Player (see Fig. 1) or the Quicktime Movie player (see Fig. 2) before certain audio or video clips can be played. But again they can be downloaded free of charge.

Fig. 1: Real Player Audio Control Panel

Fig. 2: Real Player Image Window Control Panel

Due to the blossoming of digital media and portable devices, there are indeed many new and exciting possibilities when it comes to feasible applications in the listening classroom. One common complaint about the teacher's use of a cassette recorder in the classroom is that students usually do not have control over it. But mobile devices such as mini MP3 players, personal digital assistants, various kinds of Bluetooth enabled devices and any devices that support various types of memory cards or memory sticks, have opened up whole new ways of distributing audio (and video) clips for use in the classroom. For example, instead of taking powerful audio equipment such as a Coomber cassette recorder to the classroom, it may in fact be easier to carry twenty plus mini MP3 players, which definitely weigh less. And they can even be pre-loaded with different audio clips for information gap listening activities. Every student will have control over their own learning pace. It can almost be compared to a mobile Language Lab. However, it will be an expensive way of using technology. It is certainly hoped that this use of technology will not create another wave of equipment purchase in the next few years.

And the use of such specifically designed commercial products should be tied to sensible pedagogical theories, which will need to be developed first. The web, on the other hand, is an open field. Because it can seamlessly embed and integrate various generic technologies, it is a highly flexible platform that can be exploited for educational purposes. It is not tied to pedagogical design issues faced by educators using CALL programs, as in the case of the use of computer-aided pronunciation (CAP) software, which Pennington (1999) claims to have serious pedagogical limitations, as they are mostly not based on any particular theory of pronunciation.

5 The new listening classroom

The writer makes the basic assumption that this shift of delivery medium from one of analogue and tape-based format (cassette or video tape and Minidisk) to one of digital and "webified" format in teaching listening skills does not necessitate any pedagogical changes and, therefore, justifications. After all, it is only the medium that is fundamentally changed (old wine in new bottle). It does not require a simultaneous change in any teacher's favorite teaching methodology. Instead of turning on the cassette recorder and inserting the tape, and then pressing the play button to play a recording, while learners get ready with their textbook and study the listening comprehension questions, the teacher will have to turn on the computer, open the webpage that has the audio/video material and then click on the play button on the control panel, which in fact has a very similar look to that on a cassette player. If we conduct an experiment and create a webpage that has a control panel to play the audio, turn off the multimedia projector, and ask students to turn to a certain page in their textbook to study the questions, they may not even know the audio comes from the web (or the computer) when they are not paying attention. Alternatively, if we just project a webpage which has a number of listening comprehension questions, but which has a hidden control panel, and the audio clip is set to start automatically, so that the teacher does not have to click on the play button to start a clip, students may not even know the sound comes from the webpage.

Of course, a new medium facilitates a change of teaching methods. With a web-based control panel, which is usually made visible on webpages to give learners control over the listening, it is much easier to rewind or fast forward to locate a certain point in the clip to replay than with any cassette recorder or MD player. In fact, it is simple enough to specify different starting and ending times in a clip, so that questions related to different parts of it can be written to correspond with the specific starting and ending times built into different control panels. That will spare learners the "trouble" of having to find the relevant parts of a clip when answering questions. And tapescripts can also be set to scroll up the screen when a clip is being played to help learners check their listening accuracy. If short sounds, for example minimal pairs, are being used to train learners' listening, and the play buttons (instead of whole control panels) are all visible on one screen, learners can randomly try different sounds and re-try any sounds they desire. This freedom gives learners complete control over their learning, and leads to a truly learner-centered learning experience. This great manipulability of the web is a strength that cannot be over-emphasized.

Pennington (2004) argues that "the quality of input provided by IT resources is in some respects superior to that of other media in its potential for highly focused and salient instructional presentations, such as for pronunciation instruction" (2004, p. 9), or, in our case, listening instruction. No matter how we look at it, teachers will be able to do more, and not less, with the web medium. In fact, it seems to the writer that educators who insist on using the traditional mode of delivery when teaching listening skills would need to justify their preference, when audio/video materials for their courses become available on the web, which will inevitably happen in the near future for many educational organizations.

Learners so obviously benefit from the multimedia capabilities of the web that a number of websites have since a few years ago begun to invest coordinated efforts into building up websites wholly dedicated to the training of English listening skills. While we can understand why dotcoms have tapped into this market, it doesn't mean educators cannot take this up. In fact, if we use a search engine and enter key words such as "ESL + listening", it won't be difficult to find educational websites that offer listening practice on the web. For example, Sarieva (2004) gives a list of example sites. The fact that listening is considered primarily a receptive and passive skill renders it even more suited to be delivered online and practiced via the highly-interactive medium of the computer than some other language skills. Noblitt (1995) argues about ten years ago that "interactivity is extremely important, for students must have control of the rate of information presentation if they are to maintain comprehension when using authentic materials" (1995, Multimedia and Listening Comprehension section, ¶ 1). Processing listening materials top-down or bottom-up, learners are bound to benefit from being able to manipulate course audio on their own. Although Noblitt rejects the notion that listening was a passive skill, he agrees that "information technology provides an excellent medium for balancing the analytic of form-focused study of language with a synthetic or content focused learning environment" (1995, Multimedia and Listening Comprehension section, ¶ 4).

Language teachers, particularly on their way to a listening class, are often seen carrying more than a handful of teaching materials and student copies, and a cassette player. When course audio and video materials are on the web, it will no longer be necessary for language teachers to take any equipment to class. The audio can be broadcast much more loudly with standard speakers mounted on the wall. Listening activities that are designed to go with the audio/video can easily be converted to web-compatible formats, which will cost a teaching department very little unless it aims to create highly interactive learning tasks. A web-based listening unit can be clearly projected onto the screen, which easily captures students' attention. The usually clumsy looking listening teacher will be able walk into the classroom empty-handed.

6 The burning question

As easily accessible and therefore beneficial as web-based listening courses seem, and as ready and mature as Internet technologies are, web listening courses are not yet common practice in most universities. Take Hong Kong as an example, where the writer is located. Individual teaching staff

may have created personal web pages that host listening materials for their students' use, but as far as department-wide initiatives are concerned, only one local university has made web-based listening materials publicly available on its self-access learning page.

Nearly all classrooms at the university where the writer is teaching are equipped with a multimedia projector with powerful speakers and a computer with a high speed Internet connection. Any teacher who is capable of using any traditional equipment skillfully and effectively in the classroom can easily switch to the computer when teaching listening in class. And the university has a number of powerful streaming video servers which teaching departments can make use of. Without doubt, many staff members are using them in their teaching of their content subjects. But as a language teacher, the writer is interested to find out how many language teachers indeed make use of the available resources. No research has been done about this. But from personal communication and observation, it is clear that very few have been doing that.

The obvious question is: "Should we language teachers play a part in making this happen sooner?" Language teachers are known for having heavy teaching and marking loads and therefore too busy to take up any extra work, although creative professionals have certainly tried to come up with interesting ways to teach listening, maybe relying minimally on course materials. For example, Poon (2004) reports on a study which used an integrative-narrative method to arouse students' interest in English listening through children's stories and to teach them how to use listening strategies. But most ESL instructors are probably simply using course books and audio/video materials designed by course developers.

Pennington (2004) argues that we should, and that we should "make sure that we are major players among those determining the course of IT in the teaching of language. ... We simply cannot afford to stand back and let IT happen to us or without us." (2004, p. 30) Many have known about popular listening websites such as Randall's ESL Cyber Listening Lab, or have made use of the BBC website in their teaching. But why are university language centers not taking advantages of the potential of the web?

The writer ventures a guess. A possible reason is that most language teachers are simply not aware of the fact that developing web-based listening materials does not require a lot of technical expertise. Even when a listening task is web-based, meaning it makes use of an audio or a video on the web, and therefore has to be a computer file, it can be a simple plain text file using minimum Hypertext Markup Language (HTML) code. But as most language teachers have been using only Microsoft Word as their default text editor, which normally generates binary files, many may not even be familiar with the concept of plain text files.

Naturally, for a whole listening course to be delivered on the web takes a lot of time and effort and few language teachers can afford that themselves, even if they have the technical expertise. The writer spent about three years of his own time and resources to develop one for his own students' use before. But it was by no means a complete web course. He is at the moment developing a new website, named Interactive Online Listening Assistant (Wong & Martyn, 2005), which offers interactive listening tasks for students taking the Spoken Language course at the English Language Centre of the City University of Hong Kong. Although these students come from different disciplines and have had at least fifteen years of English instruction, their listening skills remain relatively weak. This is a funded project. But the writer would like to argue that to make use of the web when one teaches listening does not necessarily mean one must have received some kind of funding. A good example is a new website named English Language Listening Lab Online, created by Beuckens (2005), who claims that all the costs are covered by himself. HTML, the building blocks of most webpages, may look daunting, but it is in fact not difficult. Unless one is ambitious and aims at building sophisticated webpages, the number of HTML tags one needs to use to start a simple webpage is very small. In fact, there are often complaints from web designers that there are not enough HTML tags for use.

## 7 A marriage of the bottom-up approach and web-based listening

The writer would like to argue that the web is the perfect medium for bottom-up listening approaches. Mills (2000) also claims that the medium is highly suitable for form-focused language learning. Whether an audio clip is embedded on a webpage or is played by launching a helper program, the fact that it is very convenient to locate specific or difficult parts of it by just dragging the sliding bar to the problematic parts or by using the pause and rewind buttons make all listening materials on the web excellent candidates for bottom-up approaches which encourage learners to hear what is actually said, and not just to make guesses. The traditional approach of checking answers with learners to see if they have understood difficult aspects of listening materials comes very much alive when learners know that they can always repeatedly try out the difficult parts and compare what they have heard, or misheard, with the model answers, a process which is in fact more meaningful and rewarding than just knowing the answers themselves. Given that fast or connected speech can be extremely difficult for learners, these features of media player programs and the web offer learners important experimentation with course materials they did not have before.

If we can put listening lessons on a continuum of focuses, with extremely top-down and bottom-up activities standing at opposite ends, it will be obvious that the closer we move to the bottom-up end of the continuum, the more use we can make of the multimedia capabilities of the web. The closer we move to the top-down end, the less difference it makes whether we use a cassette recorder or the web. An example of an extremely bottom-up activity can be one that focuses on the phonemic level of speech sounds, or the minimal unit of sounds. The screen capture in Fig. 3 is an exercise that trains learners to be more sensitive to the sounds of /n/ and /ŋ/. Each column has play buttons that are linked to the pronunciation of two contrasting words. Learners click the play buttons for the word pairs at the top to listen to their pronunciations first, and then they click the buttons next to the blanks to test their ability to distinguish the contrasting sounds. This is a very difficult sound pair for Cantonese students, despite the fact that there is a similar contrast in their L1. But the fact that they can repeatedly click on all the sounds to compare them will make it easier for them to hear the difference in the end.

Fig. 3: A Minimal Pair Listening Exercise

To stretch the point even further, let's consider another example of a bottom-up activity. Teachers of listening and speaking skills often face the problem of learners being unable to hear the difference between voiced and voiceless consonants, when voicing is not a significant feature in their L1. And of course there is no way they can SEE the difference. It is only fair that they are not completely convinced there is a significant difference in the sounds despite teachers' repeated attempts to demonstrate the distinction. However, that also means they will not make an effort to pronounce the significant feature of the sounds as instructed by teachers. But with the help of a sound editor or encoder and the web, the listening teacher can help learners analyze simple acoustic data and actually "see" the different sounds. The following wave forms (see Fig. 4) of the two minimal pairs of "advice" / "advise" and "close" (adjective) / "close" (verb) are captured to "prove" the existence of voicing in the phoneme /z/, which is indicated by the greater vibration towards the tail of the wave form (as enclosed by the curly brackets) for both the verbs "advise" and "close" (close2.wav), compared with their voiceless counterparts, "advice" and the adjective form of "close" (close1.wav).
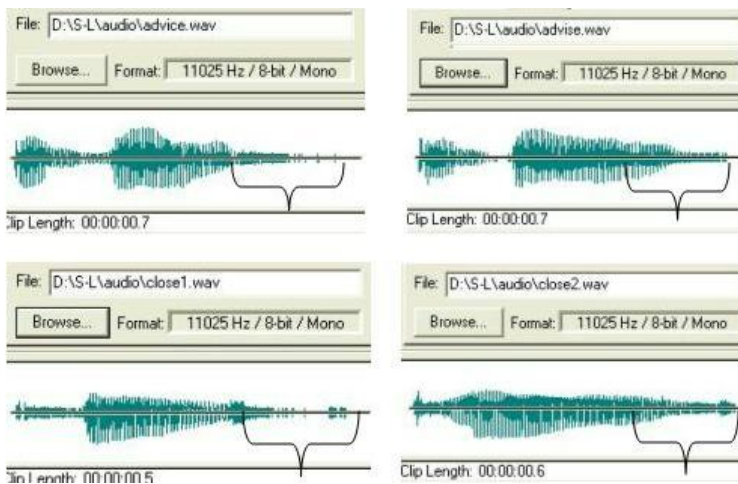
Fig. 4: Wave Forms Comparing the Voiced /z/ and the Voiceless /s/ (source: Wong, 2005b)

Though learners may genuinely fail to hear the distinction between these minimal pairs, being able to "see" it may give them more motivation to pay attention to this significant difference. To give more input to learners, one can add mouse over or on click sound effects to the wave forms so that learners can hear and see the difference at the same time. It is certainly possible to add animation effects, such as simulating the voiced and voiceless parts of the pronunciations differently, though it will require more effort and skills from the teacher or the creator of the web page.

An example of an extremely top-down activity can be one that focuses on only the discourse level of an audio input. For example, learners listen to a conversation between two speakers and decide what the topic of the conversation is, what mood they are in, how they are related, etc. To accomplish the tasks, there is no need to identify any exact words, phrases or sentences. Rather, learners need to construct the schema of the discourse, focus on the speakers' intonation, and infer their roles. Such an activity may not benefit very much from the use of the web medium. Since the focus is not on discrete details, the conversation can be played non-stop while learners exercise their knowledge of the world to get to the answers. Of course, it should be noted that the web will still be the superior medium with the support of animated visual input. While paper-based course books can give visual input as well, it will be of the static kind. What is more, the phonemic to the discourse ends of the continuum does not have to be a linear one. There can probably be different

combinations of bottom-up and top-down activities for one listening lesson. However, while the web functions well at both ends, the non-web approach is primarily a one-sided affair.

It is one thing to move from tape to file, but it maybe a wholly different issue to move from paper to the web. Although one can easily just copy whole units from a paper-based course book and create identical soft copies and put them on the web, this would be making the least use of the medium of the web. To make better and more sensible use of the web, we need to draw on the capabilities of the medium and add interactivity to the paper-based learning materials. While the tape to file process can be somewhat mechanical, the paper to web conversion could require a lot of creative thinking. Much of the learning which can now take place on the computer is not possible on paper. As they put it, the possibilities are limited only by our imagination. Holmes (2001) discusses the future development of language learning exercises and comes up with amazingly innovative ideas when he talks about rich and distributed exercises, which contain "a wide variety of media types (text, audio, video, etc.) Distributed exercises search out and include this type of content from a variety of sources all over the planet (and beyond)" (2001, Rich and Distributed Exercises section, ¶ 1). All this should only add fun and challenge to a teacher's job, who should be delighted to see the potential for improving the ways students can learn.

Mills (1999) claims that "the CALL competent instructor must also know how to help language learners make effective use of computers to improve their language abilities" (1999, p. 14). However, the writer would like to ensure language teaching professionals that it doesn't take a fully CALL competent instructor to create and produce web-based listening materials. Certainly, with more practice and experimentation with web technologies, one may well be heading towards becoming a CALL competent instructor as defined by Mills, who also explains that "this knowledge is founded on realistic expectations and relevant experiences" (1999, p. 14).

8 Some thorny issues

An understandable reason as to why listening teachers are clinging to their ways of teaching is probably that language teachers are usually not comfortable with computer technologies. It is possible that there are still many language teachers who do not own a personal computer. Many still do not even have exclusive access to one computer and are still just sharing computers in the workplace. They may be, therefore, still not very comfortable with having to rely heavily on computers in their teaching.

In addition, there are often no concerted efforts to make sure that the web-based materials are maintained well and made known to teachers. For example, the writer looked at the listening section of the web-based materials provided by a self-access centre of a local university a few months ago. The webpages were well-designed and laid out. The writer clicked on thirty or so links. But most of the hyperlinks pointing to various webpages of in-house materials supposed to have been put on the web all brought up a HTTP 404 error saying "The page cannot be found".

Besides, there are a number of digital formats when it comes to producing audio and video materials. Not only do they differ greatly in file size and quality, (au, wav, ra/rm, wma, wmv, mov, avi, MPEG etc.), the different formats are supported by different computer programs. There are various kinds of software, or encoders, to convert files from one format to another. But generally speaking, video quality is sacrificed to a large extent if greatly compressed in the process of conversion, which is often the case, as otherwise the very large file size of video files will take up a lot of disk space. For example, a 180MB MPEG movie file, which the writer converted to the realmedia format using a software program called Helix Producer Basic 9, is reduced in file size to just about 8MB. A lot of disk space is saved. But the video quality suffers. For the purpose of allowing learners to practice their listening outside class time, this is a good and affordable compromise as the sound quality is still good.

If the video is converted with Windows Media Encoder, the file size can be reduced to about 18MB of streaming video. And the video quality is satisfactory. But one needs to have a streaming server to store the file. If the file is converted for progressive download, the streaming server

requirement is not relevant. A regular web server can play the clip. But users then need to have a fast connection to make good use of the video.

To add to the complication of the issue, different interfaces need to be created to play these audio and video files on the web. Embedding these materials on webpages is one of the best ways to do it. Providing users with the control panel puts total control in users' hands, or, in other words, renders the exercise highly interactive. They can pause, rewind and play the clip again as many times as they want, while they are looking at the questions at the same time. If the web exercise is more than one screenful of information, which is often the case, one may need to embed the audio/video control panel in a frame, making sure that users can always have access to it when attempting the questions (See Appendix B).

This makes navigation much easier for learners. But it also means more collaboration between webpage designers and materials developers, as not only do different interfaces serve different audio formats, e.g. wav, ra, wma, wmv, au etc., interfaces serving different video formats are also different (See Appendix C).

A simple compromise to this problem/requirement is to provide plain hyperlinks to each bit of audio or video. This will make things a lot simpler for materials developers, as all they need to do is to maintain a list of links, or URLs, of where the files are located. Users just click the links and a helper application to run the file will be launched, assuming that users' computers are installed with all the common programs to play audio and video. However, learners are "sacrificed" at the expense of teachers' administrative convenience, as they will have to switch between the window showing the comprehension questions and the window playing the audio/video file, adding some unnecessary burden to their learning efforts.

Then there is the sensitive issue of copyright. That a teaching department has obtained permission to use certain multimedia materials via the medium of a cassette tape or MD or VCD does not automatically imply permission to deliver the materials in a different medium, for example, the web. That probably explains the unwillingness of teaching departments to make the extra efforts to gain permission to broadcast multimedia materials via a different medium when they already have permission to do it in one medium. But this resistance is probably going to be short-lived, as the trend of digitization of "old" materials is not going to be reversed.

Language teachers who are highly motivated, and have tried hard to understand the technical explanations of free HTML tutorials on the web, may still be frustrated by the fact that they are not very familiar with the Windows and UNIX operating systems. This makes it difficult for them to understand every technical detail or solve problems when they make mistakes in trying to create their own HTML files. Very often, these mistakes are non-HTML related. They may just be general computer problems. For example, a common problem for some beginning teachers is that having saved an HTML file using the NotePad editor, they end up not being able to locate and open the file with a browser, and they do not have the skills to search for it. Or if they are learning to edit with a user-friendly UNIX editor such as Pico, having created a file, they forget to change the access mode, resulting in it being inaccessible on the web. There is also a common misconception that to create web-based materials for use in the classroom, one must put them on the web. Many teachers have probably shied away from the web because of that.

9 Possible interim solutions

There are no simple solutions to the problems. Language teachers are usually not highly computer literate. Many have come a long way from the early days of "I don't want to deal with email or word processors" (we were all fond of our typewriters). Those days are long gone. But when it comes to the web, many firmly believe that they have nothing to do with it. They like to surf the web and recommend useful websites to students and even use them in class. But they are definitely not creating webpages themselves. Understandably, they do not have the time to deal with all the technical complications of creating a website and maintaining it. Many are already devoting personal time to learning new ideas, techniques and even stand-alone software programs for use in their teaching. But when it comes to Internet technologies, where things have to fit into a
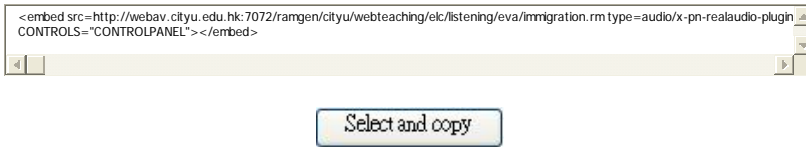
large and complicated platform, or network, however, their efforts are often slowed down because there are usually no coordinated efforts to guide them through the reader unfriendly aspects of technical tutorials. It will still be a long while before most English teaching units are ready to incorporate the web in their listening courses. Many will be able to do that in the next few years but many more will still want to take a wait and see approach. The question is what can we do in the interim.

First and foremost, the writer believes that it is necessary to correct the misconception that to create web pages, one needs to know how to put them on the web as well. This makes good sense only as far as multimedia resources are concerned. Whatever audio or video materials to be delivered on the web need to be first uploaded to a web (streaming) server. And before they are uploaded, they need to be captured and converted to web-compatible formats. But all of this is becoming centralized, as more and more universities are moving courses to online platforms such as WebCT or Blackboard. There are probably university units that can help teaching departments with these first steps, after which all one needs is a list of hyperlinks pointing to these files. But whether the rest of the learning tasks that go with these files should be uploaded as well is optional. Before something is put on the web, it is often created 'locally' and saved on one's computer hard drives. To upload it to the web is the next step, which makes it accessible to everyone who has an Internet connection. But this next step is not a must, if we are aiming to create something only for our students. We can easily access multimedia resources on the web by creating listening tasks to go with them and saving them on just a floppy disk or memory stick.

The simple suggestion here is that language teachers can start with creating simple web-based materials and put them on their floppies or memory sticks and then take them to class. By building a hyperlink in a local file to an audio or video clip, for example, on a university server, one can start the clip by opening the file with a browser in the classroom. There are in fact just a few HTML tags one will have to learn to create simple web pages, and the hyperlink syntax is one of the more complicated tags, as there are probably a large number of ways to implement it. However, a plain hyperlink is simple enough. One can learn it easily from websites such as W3 Schools and HTML Code Tutorial, both well-designed and learner-friendly websites. Unless one aims at creating sophisticated web pages, there is no need to learn to use powerful web authoring tools such as Dreamweaver and FrontPage, which hide all the HTML code behind the web page creation process. This is particularly so for beginners, as they need to develop an understanding and appreciation of the HTML syntax, which is much easier to learn than the powerful editing tools, and which will eventually give them the flexibility to design web pages that suit specific needs and the knowledge to adopt and adapt various programming languages.

In order to encourage more language teachers to use the web in their listening lessons, it is necessary to run workshops that use approaches that do not require participants to have a lot of computer skills in the first place, that facilitate their attempt to create their first HTML documents as much as possible, which will give them more confidence in using multimedia resources on the web. For example, the code to generate the interface of a control panel to play an audio clip may look daunting. An approach the writer has taken in a workshop is to put the code of a number of interfaces in text boxes such as the one in Fig. 5, and provide a "select and copy" button which, when clicked, will copy the associated code onto the computer clipboard.

Participants can just paste it to a plain text file (by pressing Ctrl/v), save it with the htm/html extension, and open it with a browser. They will then see the interface in Fig. 6. Clicking on the play button on the webpage, they will hear the audio clip and get the feeling that they have indeed "created" a simple webpage, which may just be what it takes to get them started. The writer has given a few workshops, both overseas and in the department where he is teaching, and participants have found this to be an easy approach to follow. He believes that teaching departments should organize such workshops regularly for staff so that interested English teaching professionals can develop their professional skills in this area.

```
<embed src=http://webav.cityu.edu.hk:7072/ramgen/cityu/webteaching/elc/listening/eva/immigration.rm type=audio/x-pn-realaudio-plugin
CONTROLS="CONTROLPANEL"></embed>
```

Select and copy

Fig. 5: A JavaScript Button for Copying and Pasting HTML code

Fig. 6: Real Audio Control Panel Generated by Code Above

For teachers who are not satisfied with creating only local HTML files and intend to upload them to the web, a simple approach they can take without having to worry about the steep learning curve of the UNIX system is to learn to use a Windows-based FTP program. FTP stands for File Transfer Protocols. What it does, as its name implies, is to transfer files from a local computer drive to a web server, or vice versa. While the old DOS-based FTP commands may be difficult to learn and remember, most Windows-based FTP programs are very user-friendly. They usually display two lists side by side, as shown in the screen capture in Fig. 7. On the left, one can display any directory on the local computer one chooses to display. One the right, after logging in, one can open one's web directory on the remote computer (web server) to move files to and from. The default settings usually do not require one to set access mode. And transferring files is just a matter of drag and drop, which anyone familiar with the file management system of the Windows operating system should have no problems with (for more technical details, see Computing Services Centre, 2004).
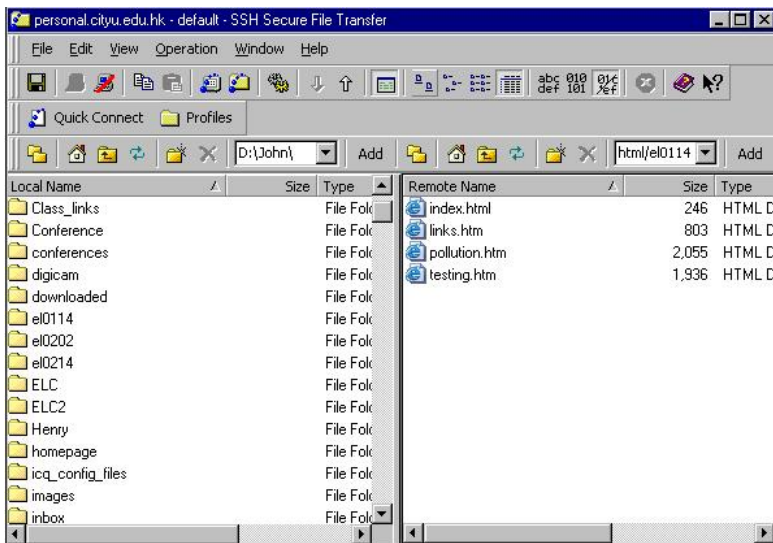

Fig. 7: A Secure File Transfer Program

Concerning the issue of copyrights, if one wants to use materials which are copyrighted, the only approach is to get the permission of the copyright owner. One may be surprised how easy it is to get it. In the early days of Randall's ESL Cyber Listening Lab, he allowed users to download his listening lessons for personal use only. But because bandwidth was still a concern and most people were using modem dialups, the writer emailed him to request permission to upload ten of his lessons to a server at the City University of Hong Kong, so that Hong Kong students could

easily benefit from his work. He promptly gave the permission. For other sources such as TV programs which can be adapted for educational purposes, getting the permission to digitize them for broadcasting on the web is often just a matter of sending an official request.

Another bandwidth related issue is the use of video. Often video materials are primarily used for listening purposes in the sense that the video images do not significantly facilitate the understanding of the information. In such cases, it is more sensible to use only the audio. For example, the writer's department recorded a video of a colleague interviewing people in a bar about the topic of love. It was a 180MB MPEG file. After being converted to the Windows Media Video (WMV) format, it is reduced to only 18MB. But because the scenes in the bar are not related to the opinions expressed by the interviewees, the writer decided to capture only the audio and converted the video into a 2MB Real Audio file, which greatly facilitates users' download of the file. The web abounds with free software that can be used to capture audio. For example, Audacity is a good program that is highly recommended. As a last touch, still shots from the video were captured as well to match the voices with the faces (see Fig. 8).
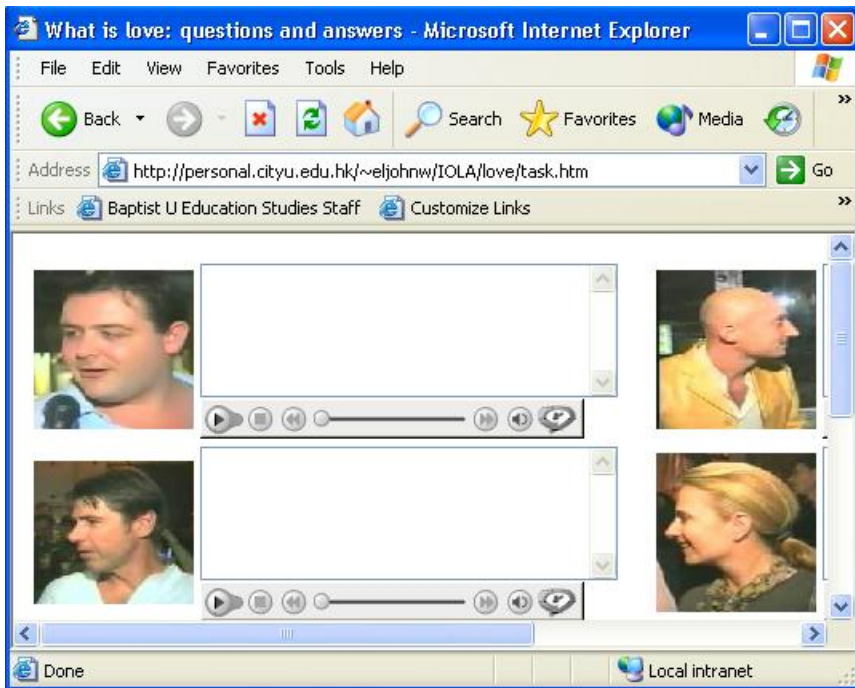
Fig. 8: Still Shots and Audio Captured from a Video Recording (source: Wong, 2005a)

10 Conclusions

Universities are normally expected to take the lead in teaching methodology and pedagogy, and to serve as role models for primary and secondary schools. But when it comes to listening courses which heavily involve the use of technologies, this might not be the case, a relatively obvious reason being that not all university professors are fully convinced of the value and effectiveness of the incorporation of IT in their teaching yet. Therefore, although universities are supposed to have more resources and to be in the vanguard of educational research, because the development of listening courses requires a large amount of effort from at least a team of people and any change to the established pattern of doing things may incur additional costs, there is a general reluctance to venture far from the existing state of affairs.

However, with or without the lead of universities, school children are learning in a new environment which makes greater use of computer technologies in the form of CD-ROMs, VCDs, DVDs, and highly entertaining websites. The next generation of young learners may be so accustomed to learning with these technologies that they will expect to be educated in a similar way on entering university. Imagine, ten years from now, how shocked or disappointed a first year university student who has never been exposed to a cassette player or even a CD player in his previous school life may feel, when admitted to university, where he finds that educators in tertiary education are still resorting to 'old' equipment in their teaching. Primary and secondary schools have started to collaborate with dotcoms to produce IT-based learning programs. School children will rightfully expect to see similar programs at university.

The writer is not arguing that the use of web technologies is going to revolutionize the teaching of listening. Maybe it will. But that is not the point. The trend of digitization of existing audio and video materials is not going to stop, while many new ones are going to be created in digital forms in the first place. Listening course developers cannot turn a blind eye to the trend and cannot afford to keep doing things in the old ways. Web technologies are probably much less expensive when compared with how much has already been spent on inflexible hardware. The fact that listening courses can be accessed by all learners at anytime anywhere and that web-based listening tasks can be as interactive as our imagination permits can guarantee that learners are going to prefer working on their listening on the web to using course books and relying on their teachers to play tapes or CDs. What's more, the move to the web format motivates teachers to add new interactive elements to their paper-based teaching materials and to rethink their teaching approaches. It will take time to invest in new technologies, but it will be time well spent.

It would not be fair to end the discussion without pointing to some limitations of the web. As pointed out by Mills (2000), the web is a great medium for form-focused learning. But that also implies that when it comes to open-ended questions, the reliability of the web medium in checking the accuracy of the answers is low. The current practice, as in the case of the use of WebCT to deliver quizzes that require, for example, one sentence answers, is to look for key words in users' answers to match those pre-selected by the quiz writer. However, it is very likely that some equivalent words will be left out. If a learner has in fact answered a question correctly but has not used key words specified in the answer script, the computer will not be able to recognize it as correct. For the time being, the teacher will still be the more reliable authority to judge the correctness of such answers.

In addition, there is the issue of browser compatibility. The most popular browser at the moment is Internet Explorer (IE). And most webpages are created with it in mind, to make sure that they display properly on this browser. But one may see some very different effects when the same webpage is opened with another browser, for example, Netscape Navigator, which used to be the competitor of IE. In fact, there are many more browsers, and different versions of the same browser may perform differently. There is also the issue of plugins, which, though all free to download, need to be installed by users themselves, when they visit webpages containing multimedia content. This may cause problems to users not familiar with the concept or unwilling to take the trouble to install them. Fortunately, for many users, these are not urgent problems to deal with, as they usually have access to the necessary technical support on campus.
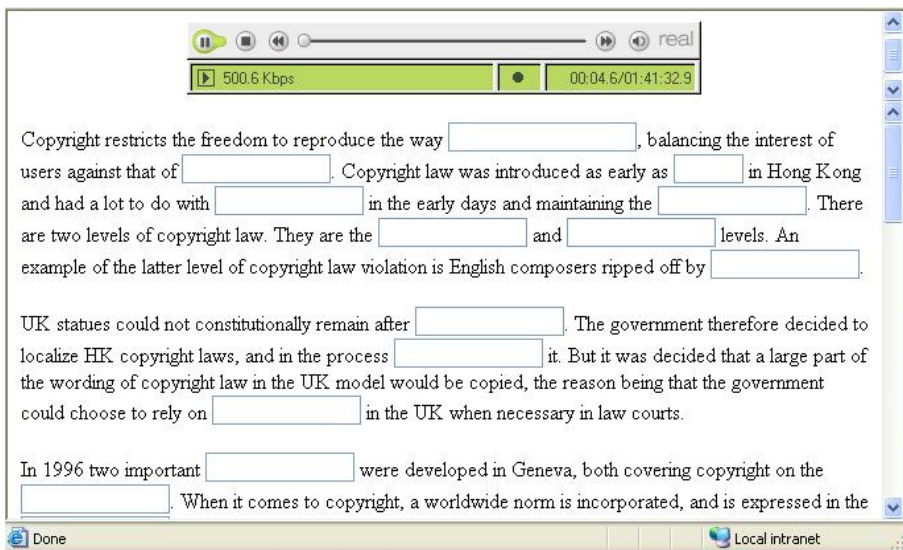
Appendices:

Appendix A

Interface of a web-based dictation task (source: Wong, 2002; N.B.: This page takes a while to load because of the large number of sound files.)
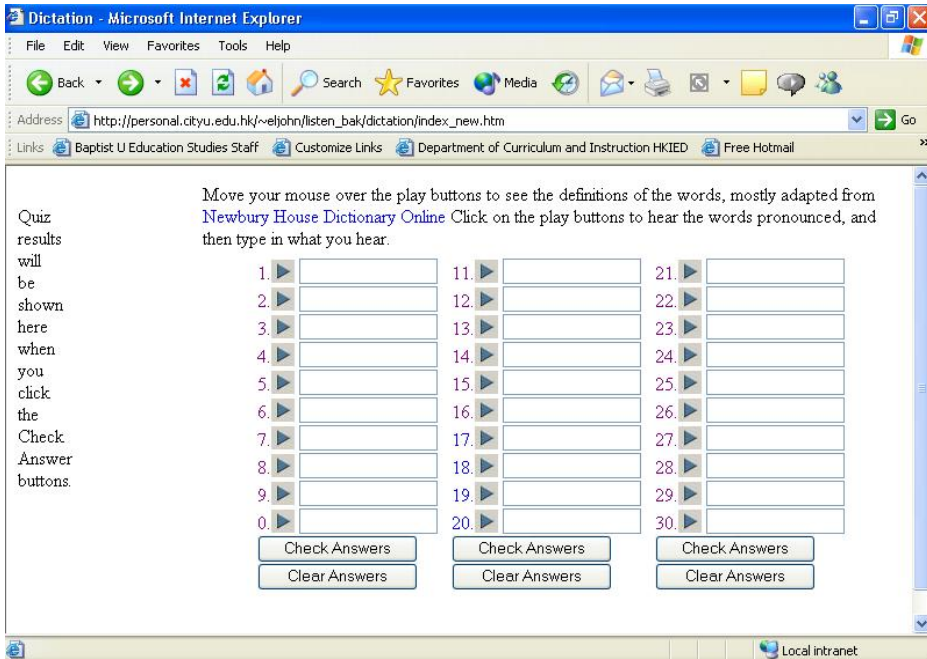
Appendix B

A two-frame structure webpage (source: Wong, 2003)

Appendix C

Interfaces for different audio and video formats

References

Audacity (n.d.). [Computer software] Retrieved from http://audacity.sourceforge.net/

Beuckens, T. (2005). *English language listening lab online*. Retrieved April 26, 2005, from http://www.elllo. org/

Brown, G., & Yule, G. (1983). *Teaching the spoken language*. Cambridge: Cambridge University Press.

Cauldwell, R. (2002). *Phonology for listening: Relishing the messy.* Retrieved February 1, 2003, from http://www.speechinaction.com/

Computing Services Centre, City University of Hong Kong (2004). *Concise user guide to university personal web pages*. Retrieved May 3, 2005, from http://personal.cityu.edu.hk/UserGuide/

Davis, R. (n.d.). *Randall's ESL Cyber Listening Lab.* Retrieved September 2, 2004, from http://www.esl-lab.com/

Field, J. (2003). Promoting perception: Lexical segmentation in L2 listening. *ELT Journal, 57*(4), 325-334.

Gillett, A. (n.d). *Listening comprehension and note-taking*. Retrieved October 10, 2004, from http://www.uefap.co.uk/listen/exercise/standex/standex.htm

Holmes, M. (2001). *The future of the exercise*. Retrieved September 8, 2004, from http://web.uvic.ca/hrd/eurocall2001/FutureExercise/

HP SpeechBot (2004). Retrieved May 3, 2005, from http://speechbot.research.compaq.com/

JavaScript Source (n.d.) Retrieved September 2, 2004, from http://javascript.internet.com/

Mills, D. (2000). Web-based technology as a resource for form-focused language learning. *TESOL Quarterly, 34*, 603-615.

Mills, D. (1999). What constitutes CALL competence? *TESOL Matters, 9*(1), 14.

Nielsen, J. (2003). *Time to make tech work.* Retrieved October 16, 2003, from http://www.useit.com/alertbox/20030915.html

Noblitt, J.S. (1995). *Cognitive approaches to listening comprehension.* Retrieved February 17, 2005, from http://www.unc.edu/cit/iat-archive/publications/noblitt/noblitt3.html

O'Sullivan, M. (n.d.). *HTML code tutorial*. Retrieved April 8, 2004, from http://www.htmlcodetutorial.com/

Pennington, M. (1999). Computer-aided pronunciation pedagogy: Promise, limitations, directions. *Computer Assisted Language Learning*, *12*(5), 427-440.

Pennington, M. (2004). Cycles of innovation in the adoption of information technology: a view for language teaching? *Computer Assisted Language Learning, 17*(1), 7–33.

Poon, A. (2004). *HKBU Communication & Public Relations Office.* Retrieved September 6, 2004, from http://www.hkbu.edu.hk/~cpro/pr_03/pe20040830.htm

Richards, J. (1990). *The language teaching matrix*. Cambridge: Cambridge University Press.

Ridway, T. (2000). Listening strategies – I beg your pardon? *ELT Journal, 54*(2), 179-85.

Sarieva, I. (2004). *Web resources for teaching listening*. Retrieved June 11, 2004, from http://www.cas.usf.edu/eliteachers/listening.html

W3Schools online web tutorials (n.d.). Retrieved May 3, 2005, from http://www.w3schools.com/

Wilson, M. (2003). Discovery listening – improving perceptual processing. *ELT Journal, 57*(4), 335-343.

Wong, J. (2002). *Dictation I.* Retrieved from http://personal.cityu.edu.hk/~eljohn/listen_bak/dictation/index_new.htm

Wong, J. (2003). *Copyright issues*. Retrieved from http://personal.cityu.edu.hk/~eljohn/listen_bak/copyright/index.htm

Wong, J. (2005a). *What is love: questions and answers.* Retrieved from http://personal.cityu.edu.hk/~eljohnw/IOLA/love/task.htm

Wong, J. (2005b). *Minimal pairs: /s/ vs. /z/.* Retrieved from http://personal.cityu.edu.hk/~eljohnw/IOLA/sounds/se-ce.htm

Wong, J., & Martyn, H. (2005). *Interactive online listening assistant*. Retrieved from http://iola.cityu.edu.hk/