Creating Spoken eBooks using Microsoft Reader

Jean L. Ware, Asia University

INTRODUCTION

This article explains how to create spoken eBooks (electronic books), which can be used to provide listening practice for university students studying English as a Foreign or Second Language. The eBook reader that was used in this project was the Microsoft Reader. I selected stories written by students, and then transformed them into eBooks. This article explains this process, after providing some background information about eBook technology.

THE PROBLEM: PROVIDING EXTRA LISTENING PRACTICE

There is often not enough class time (especially in an integrated-skills course) to give students of English the listening practice that they need. Although there are many excellent listening courses, these courses tend to be expensive for students to purchase for their independent practice. Teachers need an inexpensive method of generating level-appropriate listening activities that are also perceived by students as interesting and related to their current studies. These activities should be something that students can do after class and in their own homes. One promising technology is eBooks with their Reader’s text-to-speech capabilities.

WHAT ARE EBOOKS?

EBooks are electronic books (and other documents) that can be read on desktop computers, laptops, handhelds and pocket PCs, as well as dedicated eBook devices. EBooks include everything from public-domain texts written in the 1600’s to the most recent best sellers.

EBooks are usually distributed via the Internet, as is the free eBook reader software. Some universities in the United States are using eBook textbooks so students need only to carry a laptop, rather than a foot-high stack of textbooks, to their classes. Reference books are also being made in eBook form. The main complaint people have about eBooks is that they do not like reading on a computer screen. I have not found this to be a problem when using the properly-sized font.
How many eBook titles are available?

There are thousands of eBooks, with new ones being released all the time. As of November 8, 2002, Project Gutenberg (a compiler of public-domain texts) has created a total of 6,267 eBooks (2002, p. 1). netLibrary.com has over 40,000 titles available in various academic disciplines and subjects (Help, p. 1). The University of Virginia Library has 70,000 digital texts, 10,000 of which are publicly accessible (2002, p. 1). According to Reid (2002), Random House now simultaneously publishes lead titles as both print books and eBooks (p. 1). OverDrive (a company that both converts printed books to eBooks and sells commercial software to create eBooks) reports that there are about 450 publishers offering commercial eBooks (Reid, 2002, p. 1).

Why do People Like eBooks?

Most of the things you do with paper books you can also do with eBooks. For example, you can highlight passages, make annotations, create bookmarks, and add simple drawings. eBooks have the advantage of allowing you to carry a whole library worth of books on your laptop or hand-held device. You can choose the size of the font that is used when reading an eBook. If you are near-sighted, you can make the font quite large. With some eBook readers you can also adjust how the type is displayed, selecting the display option that looks the best on your screen. Library books can be sorted not only by the title or the author, but also by the date they were last read. eBook readers remember how far you have read in a book and will automatically return you to that page. You can quickly look up a word in the built-in dictionary. It is also easy to search the entire book for a specific word or phrase. If you want to know the first place where someone (for example, Ernest) is mentioned, then you can quickly search the book starting with page 1. You can immediately download books when you want them rather than going shopping or waiting for them to be shipped to you.

Several eBook readers now include recent text-to-speech technology. This means that instead of reading a book or a document, you can now listen to the book read to you by the computer. For native (and near-native) English speakers, this also provides an excellent way of proofreading a written text. Listening to text read by a computer can help you detect those little errors that are so easy to overlook in writing that has become very familiar to you.
What is Text-to-Speech Technology?

Text-to-speech technology is a by-product of the U.S. 1998 Workforce Investment Act, which includes the Rehabilitation Act. Section 508 of the Rehabilitation Act requires that Federal agencies remove barriers to information technology access for those with disabilities (GSA, 2002, p. 1). One result of Section 508 has been the development of text-to-speech technology to assist the blind and visually impaired (ScanSoft, 2002, Creating Access..., p. 2).

Text-to-speech technology converts text into computer-generated speech using various algorithms. Advanced text-to-speech algorithms change text into "a phonetic representation with markers for stress and other pronunciation guides" (ScanSoft, 2002, ScanSoft RealSpeak..., p. 3). The result is then converted into sound using actual recordings of diphones, which contain all co-articulation and vocalizations (ScanSoft, 2002, ScanSoft RealSpeak..., p. 2). Depending on the sophistication of the software, the results can sound quite natural.

The text-to-speech algorithms included with Microsoft Reader are not the most sophisticated, but they are comprehensible. I have noticed only a few instances where English words were mispronounced. In all cases, the words were homonyms and their function within the sentence had been misinterpreted. For example, the Microsoft Reader mispronounced the verb, "live," in the sentence: "So, now James and Grace live by themselves." It obviously interpreted this verb as an adjective, but properly interprets (and pronounces) it in other contexts. Uncommon foreign words (such as Japanese names) are pronounced using standard English phonetics, so actually, they will be mispronounced.

WHY USE SPOKEN EBOOKS WITH EFL/ESL STUDENTS?

Spoken eBooks can help students associate sounds from spoken words with their written counterparts. Although electronic dictionaries are useful for learning the pronunciation of words in isolation, spoken eBooks provide the pronunciation of those same words within the context of a sentence. As an eBook is read, each word is highlighted to help the students associate the sounds being heard with individual written words. For more information on using spoken eBooks with students, see Ware (2003).

The Microsoft eBook Reader

There are several providers of eBook reader software. Web addresses and notes about some of them are included in the appendices. For this project, the Microsoft Reader was
chosen for the following reasons. It is a widely available eBook reader with free eBook authoring software. It uses ClearType technology, which makes it easier to read text on an LCD or TFT monitor. It has a text-to-speech add-in, making it possible to listen to eBooks. I thought that it was highly likely that the administrators of Asia University’s computer labs would allow the software to be installed there. Finally, it also has an eBook reader for the pocket PC.

CREATING EBOOKS FOR USE BY STUDENTS

Stories written by students were used because:

- Students should generally be able to comprehend other students’ writing. In other words, both the vocabulary and grammar used by other students should be comprehensible. Of course, since students’ abilities differ, the grammar and vocabulary used by some students will be challenging to others.
- Students should have a high interest in reading their own and their friends’ stories.
- Hopefully, students would begin to realize that they can communicate using English.

The following summarizes this process:

1. The stories were typed into separate Word documents and the pictures that students used while writing their stories were included.
2. After downloading and installing the “Read in Microsoft Reader” add-in, the eBooks were created by simply clicking on the Microsoft Reader icon (See Appendix A for details.).

A 343-word story took about 10 seconds to convert from a Word document into an eBook. A 3,000-word document with a number of graphic images required only 20 seconds to be converted. Once converted, it is easy to play and listen to the eBooks (see Appendix B for details). EBooks created on an English computer play well on a Japanese Windows ME computer; however, there are problems when they are transferred to a Japanese Windows 2000 computer.

PROBLEMS ON A NON-ENGLISH WINDOWS 2000 COMPUTER

Instead of sounding like English, eBooks that are played on Japanese Windows 2000 computers are read with a katakana-like pronunciation. I contacted Microsoft about these problems via their Online Support website and learned that starting with Windows 2000, the text-to-speech engine has been embedded in the operating system. Apparently, the
pronunciation algorithms are altered to match the native language of the operating system. Thus, under the Japanese Windows 2000 (and later) operating systems, the number 90 will be pronounced as “kyu-ju” and “internet” will sound like “in-ta-netto.” Similar results would take place on other non-English operating systems.

A SOLUTION: USING “AVI” MOVIE FILES

The solution I chose was to make “movies” of the eBooks being read on a computer with an English operating system. I used TechSmith’s Camtasia Studio to record an English desktop computer reading the eBooks (See Appendix C for details.). The resulting movies (“AVI” files) were then copied to a CD-ROM and transferred to the computer lab. There, a hyperlinked document was created to make it easier for students to access the different stories (Hyperlinks can easily be added to Word documents by highlighting the words to be hyperlinked and then right-clicking. Choose the “Hyperlink” menu option, then browse to the source file, and click [OK]).

“AVI” files can be played using the Microsoft Windows Media Player or other multimedia players such as the Real Player. (See Appendix D for details about using the Microsoft Windows Media Player.)

EXTENSIONS

Another way of creating spoken eBooks would be to change the eBook movies’ sound using an option available with the Camtasia Studio. The Microsoft Reader software could be used for the video portion of the movie and then one or more native English speakers could read the text at the same speed as the Reader’s highlighted words.
References


Creating eBooks using Microsoft Word

To create an eBook using Microsoft Word, first download and install the “Read in Microsoft Reader” add-in (See Appendix F for the web address.). Then, for best results when reading eBooks on a flat screen monitor, format your Word document using ClearType fonts. The ClearType fonts that are used on the PC are Berling Antiqua, Frutiger Linotype, and Lucida Sans Typewriter (Microsoft, 2000, Layout Guide..., p. 8). Add any images after they have been appropriately sized (Microsoft, 2000, Source Materials..., pp. 10 & 39).

<table>
<thead>
<tr>
<th>Recommended eBook Image Sizes</th>
<th>Width x Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum image within an eBook</td>
<td>400 x 600 pixels</td>
</tr>
<tr>
<td>Custom Cover Page</td>
<td>510 x 680 pixels</td>
</tr>
<tr>
<td>Bar Image, standard Title Cover Page</td>
<td>82 x 680 pixels</td>
</tr>
<tr>
<td>Thumbnail</td>
<td>99 x 132 pixels</td>
</tr>
</tbody>
</table>

Images can be sized within Word by right-clicking on the image and selecting “Format Picture....” Images that are ten to eleven centimeters tall within a Word document seem to convert well to the eBook format, leaving several lines of text to go with the image. If you select the Size tab and enter one of the dimensions, then the other dimension will change automatically.
Images that will be displayed in spoken eBooks should also have an “Alternative text” description entered on the Web tab. Otherwise, the eBook reader will say: “Graphic, no description available” as it comes to each image.

I found that having a tab character followed by a new paragraph marker at the end of a Word file confused Microsoft Reader. Make sure that you have no more than two new paragraph markers at the end of your document.

To convert the Word document, click on the “Read in Microsoft Reader” icon.

Enter the title, author, and eBook filename in the textboxes provided, and click OK. You can allow the output “.LIT” file to be stored in the standard Microsoft Reader Library directory or specify a different directory. After about 10 seconds (for short documents), the eBook’s creation will be completed and a completion message will be displayed.
Using the Microsoft Reader

1. Start the Microsoft Reader by clicking on the Reader icon (JL). The Microsoft Reader will open and display the Library view (See the left half of Figure 2 below.).

2. When using the text-to-speech component of the Microsoft Reader, use the Settings menu (on the lower left of the window) to make sure:
   a. that the Voice settings (on page 4) do not have “Verbosity” checked, and
   b. that “Highlight text as it is read” is checked.
   c. It is also nice to have the Visual guides on page 3 checked.
   d. (See Figure 1.)

3. From the Library view, click on the title of the desired eBook. That eBook’s title page is then displayed. (See the right half of Figure 2 below.)

4. You can either click on the title or use the “Go to” menu to start reading the eBook. (See the right half of Figure 2 below.) The “Begin playing” menu option tells the Reader to start reading the eBook using the text-to-speech component of the Microsoft Reader.
EBooks can also be controlled using the arrow keys at the bottom of the window (See Figure 3). As the text is read, the Microsoft ReaderTM automatically turns the pages and highlights the words as they are being read. To change to a different eBook, click on the eBook title at the top left of the window and select the Library menu option.

Figure 3 shows the complete student-written eBook (displayed as two pages) that was referenced at the beginning of this paper.
This is Tome and Chika. Tome is 90 years old and lives in a small city. She lives in an old house that was built 33 years ago. Tome was married for 70 years. Her husband, Takeshi, has been dead for 3 years. So, she now lives alone. She has 6 grandchildren, 3 boys and 3 girls. Everyday, Tome works in a rice field. She spends a lot of time working there.

On this day, Chika came to meet her grandmother. Chika is 6 years old. Tome is very happy and welcomes her. Tome wants to live with Chika. She likes to spend time with Chika while on vacation.

Did Chika come to Tome by herself?
Yes, she did. She traveled there by train and by bus.

Would Tome like to get married again?
No, she wouldn't. She will love Takeshi forever.

Figure 3 – Reading an eBook (the current word on each page is highlighted)
Appendix C

Using Camtasia Studio to Record the Microsoft Reader

(A free, fully functional version of TechSmith’s Camtasia Studio is available for trial use for 30 days. It costs about $120 with their educational discount.)

Criteria for selecting Desktop Recording Software

The software needs to be able to
1. Capture the computer screen at 100% video resolution, and
2. Play the resulting movies using Microsoft Windows Media Player without installing any additional software.

Setup

(Once the settings are made, Camtasia will remember them for the next session.)
1. Start Microsoft Reader. Then, run the Camtasia Studio and select the Camtasia Recorder.
2. Select Capture → “Input” → “Fixed Region...”. Then click on Select to set the Image capture region.

(I set the capture region below the eBook title and above the navigation bar at the bottom of the window.)
This allows the Windows Media Player to display the eBook at about 100% resolution, which provides a clear view of the text.)

Change the Video Options as follows. Select Tools \rightarrow “Options…” and then the AVI tab. Uncheck the Auto Configure option, and then click on Video Setup. As the compressor (the video compression code), select “Microsoft Video 1,” and adjust the Compression Quality to 100%.

3. Make sure Capture \rightarrow “Output” is set to “File.”

4. Insert a stereo “Y-connector” into the “audio out” jack.

5. Connect the speakers to one side of the “Y.”

6. Connect a patch cord to the other side of the “Y” and back into the microphone jack.

7. Set the microphone volume to a low level to keep the recorded audio from being excessively loud.

8. Disable any automatic microphone gain control.

**Recording**

Press the red button to start the recording session and the square button to stop the recording. You will then be asked to name the new movie file.
Appendix D

Watching Movies using the Windows Media Player

The Windows Media Player operates like a VCR. Use the larger \[ pause button to stop the video. Use the play button \[ to resume playing.

The square slider can be used to quickly move to any where within the movie.
Appendix E

Notes about eBook Readers

Although Adobe’s publisher protections were initially stronger than Microsoft’s, the current version of Microsoft Reader (2.1) now has equivalent protections.

Both Microsoft’s Reader and Adobe’s eBook Reader require you to “activate” or “certify” your reader before you can purchase copyrighted books. The different readers then limit the number of computers or hand-held devices on which you can read that book. It is not necessary to go through the activation process for non-copyrighted eBooks.

Microsoft’s Reader activation system allows you to purchase an eBook and download it or move it among your activated devices. You can do this by activating the Reader on the different devices using the same Microsoft Passport. Microsoft allows you to activate Microsoft Reader on up to eight different devices using the same Microsoft Passport account. Microsoft Reader is associated with your Passport account and a unique Hardware ID (This ID is generated based on your device’s operating system and key hardware components such as the amount of memory and hard disk space). The information from your Passport is combined with your Hardware ID to create an encrypted "Activation Certificate," which is downloaded to your device during the Activation process. The Activation Certificate is required to purchase eBook titles packaged for secure distribution, and is automatically used by retailers to secure your content for you. If you run out of activations, you can request additional activation via their website (Microsoft, n.d., Activation FAQ). If you have significantly upgraded your computer, you may also need to re-download your eBook (Microsoft, 2002, KBA #272949). If you change your Microsoft Passport, then you will have to contact the vendor where you downloaded the eBook and re-download it in the new configuration.

According to the “Open an eBook” website (see their Devices and Software web page) both Microsoft’s Reader and Adobe’s eBook Reader allow you to download the same book up to 4 times.

Adobe does not provide free eBook authoring software. You must purchase Adobe Acrobat to create Adobe eBooks. Adobe’s eBook Reader will let you read a purchased eBook on only one computer. To prevent unauthorized reading and copying of eBooks, the Acrobat eBook Reader does not allow you to read the same eBook from more than one computer (using a network) or to copy eBooks from one computer to another. In addition, if you
change your computer’s configuration (e.g., by adding a new hard drive, more memory, or changing the processor), then your purchased eBooks that were once readable become unreadable. You have to contact the vendor where you downloaded the eBook and re-download it in the new configuration. The publisher of each book determines whether you can print or copy portions of the book, whether you can lend or give the book to someone else, and whether you can use the “Read Aloud” button to listen to the text of the book. For more information, see Adobe’s Web site at www.adobe.com/products/ebookreader/support.html.

Purchased Palm Reader eBooks may be encrypted using your name and credit card number and can only be opened using that data.
Appendix F

Web Addresses for Reader Software and eBooks

This appendix gives some Internet addresses for eBook Reader Software. It is followed by Internet addresses for purchased and free eBooks.

Summary of Software Web Addresses

The software used in this project is listed at the top of the following table. It includes those provided by Microsoft, TechSmith, and Hyperionics. Other providers of eBook readers are listed towards the bottom.

<table>
<thead>
<tr>
<th>Company or Organization</th>
<th>Software</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft®</td>
<td>Reader Activation</td>
<td><a href="http://www.microsoft.com/reader/info/activation.asp">http://www.microsoft.com/reader/info/activation.asp</a></td>
</tr>
<tr>
<td>Microsoft®</td>
<td>Text-to-Speech 1.0 (add-in)</td>
<td><a href="http://www.microsoft.com/reader/downloads/tts.asp">http://www.microsoft.com/reader/downloads/tts.asp</a></td>
</tr>
<tr>
<td>Benetech Bookshare</td>
<td>Daisy Reader &amp; Victor Reader Software</td>
<td><a href="http://www.bookshare.org/web/MembersDownloads.html">http://www.bookshare.org/web/MembersDownloads.html</a></td>
</tr>
<tr>
<td>Global Mentor Inc.</td>
<td>Mentoract™ Reader (Java based)</td>
<td><a href="http://www.globalmentor.com/software/reader/">http://www.globalmentor.com/software/reader/</a></td>
</tr>
<tr>
<td>ION eMonocle</td>
<td>eMonocle</td>
<td><a href="http://www.ionsystems.com/emonocle/">http://www.ionsystems.com/emonocle/</a></td>
</tr>
<tr>
<td>OverDrive</td>
<td>Palm Reader</td>
<td><a href="http://ssl.overdrive.com/partners/palm/Des">http://ssl.overdrive.com/partners/palm/Des</a> ktopReader.asp</td>
</tr>
<tr>
<td>OverDrive Inc.</td>
<td>ReaderWorks Standard 2.0 (creates Microsoft eBooks)</td>
<td><a href="http://www.overdrive.com/readerworks">http://www.overdrive.com/readerworks</a></td>
</tr>
</tbody>
</table>

Places where eBooks may be purchased

http://www.amazon.com
http://www.barnesandnoble.com
http://www.cokesbury.com
http://www.palmdigitalmedia.com
http://www.galaxylibrary.com
http://www.toptwentychristian.com
Sources of Free text & eBooks

Most of the eBook sellers above have a selection of free eBooks. The following are additional sources of free eBooks.

<table>
<thead>
<tr>
<th>What</th>
<th>Where</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alex Catalogue of Electronic Texts</td>
<td><a href="http://www.infomotions.com/alex">http://www.infomotions.com/alex</a></td>
</tr>
<tr>
<td>Bibliomania - A collection of literary classics</td>
<td><a href="http://www.columbia.edu/acis/bartleby">http://www.columbia.edu/acis/bartleby</a></td>
</tr>
<tr>
<td>GlobalMentor Publishing (OEB versions of the Project Gutenberg texts)</td>
<td><a href="http://www.globalmentor.com/bookstore/">http://www.globalmentor.com/bookstore/</a></td>
</tr>
<tr>
<td>Globusz Publishing</td>
<td><a href="http://www.globusz.com">http://www.globusz.com</a></td>
</tr>
<tr>
<td>Internet Public Library</td>
<td><a href="http://www.ipl.org">http://www.ipl.org</a></td>
</tr>
<tr>
<td>ION Systems &amp; Galaxy Library</td>
<td><a href="http://www.ionsystems.com/emonocle/OeB_books">http://www.ionsystems.com/emonocle/OeB_books</a></td>
</tr>
<tr>
<td>Project Gutenberg (public domain books, generally published before 1923)</td>
<td><a href="http://www.promo.net/pg">http://www.promo.net/pg</a></td>
</tr>
<tr>
<td>Public Domain Reader</td>
<td><a href="http://pdreader.org">http://pdreader.org</a></td>
</tr>
<tr>
<td>Sunsite Berkeley Digital Library</td>
<td><a href="http://sunsite.berkeley.edu">http://sunsite.berkeley.edu</a></td>
</tr>
<tr>
<td>The Humanities Text Initiative part of the University of Michigan's Digital Library.</td>
<td><a href="http://www.hti.umich.edu">http://www.hti.umich.edu</a></td>
</tr>
<tr>
<td>University of Pennsylvania Online Books</td>
<td><a href="http://onlinebooks.library.upenn.edu">http://onlinebooks.library.upenn.edu</a></td>
</tr>
<tr>
<td>University of Virginia Library</td>
<td><a href="http://etext.lib.virginia.edu/uvasonline.html">http://etext.lib.virginia.edu/uvasonline.html</a></td>
</tr>
</tbody>
</table>

Sources of Useful Information about eBooks

In addition to the websites by the developers of eBook reader software, the following websites are particularly informative.

<table>
<thead>
<tr>
<th>What</th>
<th>Where</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open eBook Forum</td>
<td><a href="http://www.openebook.org">http://www.openebook.org</a></td>
</tr>
<tr>
<td>Open an eBook</td>
<td><a href="http://www.openanebook.org">http://www.openanebook.org</a></td>
</tr>
</tbody>
</table>