

In the News : Using Streaming Audio Internet Broadcasting to Improve Listening Skills and Critical Awareness

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ABSTRACT

Thanks to ever-improving streaming technology for online audio and video, any Internet-equipped personal computer now represents a “personal language laboratory.” This paper offers an overview of current events-oriented websites suitable for learners of English that provide both streaming audio broadcasting and corresponding transcripts. Foremost among these Internet sites is the Voice of America (VOA) Special English news program, read at a slower speed using a limited vocabulary that is also available online. The BBC World Service site also features audio and text scripts, along with English vocabulary glosses, for a smaller number of stories. A CNN-related educational website provides questions for checking comprehension of news reports, which are accessible in either audio or video formats. The Daily Yomiuri newspaper maintains streaming audio files with online quizzes designed specifically for TOEIC test-takers. Other audio-with-text websites useful for students, involving content such as popular science and daily conversational situations, are surveyed more briefly. Strengths and weaknesses are discussed. After considering general aspects of the ESL listening process, the paper then describes specific classroom applications of these Internet-generated authentic materials in terms of pre-listening, listening, and post-listening activities. The ultimate aim of this approach is to demonstrate to students how they can empower themselves as autonomous, self-paced, lifelong learners of English by means of their own “personal language labs.” An appendix lists URLs relevant for educators exploring the diverse classroom uses of streaming multimedia, as well as for individual students accessing real-world news content from home.

KEYWORDS : RealPlayer, streaming audio, Internet, current events, VOA

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INTRODUCTION

Pioneered by the RealNetworks software company (www.real.com), the development of “streaming” multimedia during the late 1990s represents one of the most significant Internet innovations to date. RealPlayer streaming technology, free versions of which are always available, enables audio or audio-video files to be played during download from the Internet, thereby eliminating the need to save the space-intensive data to a local computer hard drive. A rapidly growing number of content providers of all stripes (news, entertainment, religion, etc.) now disseminate their information product via Internet multicasting and store it online in searchable archives. This allows end-users to access the files either in real time during initial broadcast or even years later. Never before have individual consumers of information had so much control over what programming they choose to consume and when they choose to consume it (Wood 2000). This revolutionary capability for “on-demand” access to a vast array of authentic native English speech, at near-CD digital quality, offers important applications for the teaching of ESL. These emerging multimedia resources are especially promising for learners in places like Japan, where the relative scarcity of native English speakers in the daily environment has always been a major obstacle to

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communicative competency.

The paper begins with a content overview of a small number of Internet websites, featuring streaming audio and corresponding transcripts, which may be most beneficial for university ESL students. Foremost among these is the Voice of America site, featuring the VOA Special English program and the Millennium Moments series. Other websites include the BBC's Words in the News program, Daily Yomiuri for TOEIC, Earth & Sky Radio Series, and Learning Resources (maintained by CNN's San Francisco bureau). Next, there is a brief general description of the ESL listening process, followed by a more detailed description of the classroom procedures employed during this project. This explains the rationale and purpose of the distinct pre-listening, listening, and post-listening phases. Although classroom activities primarily cultivate the receptive skills of listening and reading, the productive skills of speaking and writing are developed through oral and written discussion of news stories. As current events constitute the core subject matter, development of critical awareness is also a major aim. Appendix I, consisting of script excerpts from actual news reports, supplies examples of the lexical content involved. An extensive list of relevant web URLs comprises Appendix II. These should provide a useful starting point for classroom educators exploring the diverse possibilities of streaming audio, or for autonomous self-paced learning at home by sufficiently motivated students.

VOA SPECIAL ENGLISH

Government-funded and commercial-free, Voice of America began short-wave radio broadcasting in February 1942, less than three months after the U.S. entry into World War II. Today, while VOA programming is beamed via global satellite to 91 million radio listeners in 53 different languages, there has been a strong push toward cyberspace with the continuous netcasting of VOA "News Now." (The information in this section comes mainly from the VOA website, www.voa.gov. See also Lewis 1999; Barber 2000.) Begun in 1959 and relied upon on by educators in numerous nations, VOA's separate "Special English" (VOA SE) program differs from standard broadcasts in content and delivery. Stories are written using a limited vocabulary of 1,500 words that describe basic objects, actions and emotions. In an email to the author, the Special English news editor stated that the VOA SE Word Book, online at www.voa.gov/special/sevocab.html, is compiled and updated through "sort of a continuous human-mediated corpus analysis. ... We have a fairly good sense of which words we need to write our stories" (Arditti 2000). Linguistically, the active-voice declarative sentences tend to contain only one idea, expressed using straightforward grammar and syntax, without culture-specific idioms. Just as significantly, Special English announcers read stories at a slower pace, about two-thirds the speed of standard spoken English, allowing for precise enunciation. Although originally criticized as unworkable "baby English" by some American universities, VOA SE has since proven to be a popular and effective vehicle for enabling non-native speakers of English to understand complex news and feature topics. A number of English textbooks based on VOA SE have been published (most recently, Nishimoto 2000). The obvious problem with all current events-based textbooks, however, is that by the time they reach the classroom their news content is no longer fresh. The use of streaming audio overcomes this problem.

The largest VOA audiences are in Asia, Africa and the Middle East. In the view of one university educator in South Korea, VOA is "perhaps the most teacher-friendly listening resource in Asia" (Dickey 1999). VOA Special English's recently revamped Internet website (www.voa.gov/special) archives the transcripts of feature stories indefinitely but, due to the large volume of information provided, streaming audio files remain available online only during the 24-hour period of actual broadcast. Each half-hour SE program consists of 10 minutes of world news, followed by 20 minutes of feature segments that vary according to the day of the week. Feature topics include science, development, environment, history, society and entertainment. For this project's purposes, the most suitable content comes from "American Mosaic," the Friday feature that answers listener-learners' questions about American culture. In recent months, American Mosaic has aired stories on getting a driver's license in the United States, actor Tom Cruise's latest hit movie, the role of firearms in American society, the U.S. electoral process, and golfer Tiger Woods. In response to listener inquiries from several different countries,

in September 2000 the “Foreign Student Series” began offering practical “how-to” information about entering American universities.

Figure 1 (all figures are grouped together in Appendix I) shows a script excerpt from a Special English piece that ran earlier this year. Such topics are timely and rich in global human interest. But the main advantage of using VOA SE as a streaming audio resource, especially as an introduction to L2 English news listening, is the non-intimidating nature of the slower speed and controlled vocabulary. A Chinese university educator (Hu 1997) has used both VOA Special English and the full-speed VOA News Now for the same listening topic in a single class period, with the former serving as a confidence-building bridge into the latter. (Similarly transitioning students into independent news listening environments represents a longer-range goal of this project.) On the downside, drawbacks to Special English must be conceded. As the SE vocabulary list does not contain relatively infrequent words like “trillion,” for example, highly awkward constructions such as “one million-million dollars” become inevitable. (Observed SE’s news editor via email, “I’ve heard similar complaints from writers in other fields that use controlled Englishes, like aerospace documentation” Arditti 2000.) Additionally, the slower Special English cadence does sacrifice some of the language’s natural rhythm and intonation patterns.

“Millennium Moments” is a different series produced by Voice of America that “looks back at some of the people, events, and ideas that shaped our world during the past 1,000 years.” The 90-second “popular history” segments, read at normal speed using standard vocabulary, were broadcast on weekdays last year as part of the general media run-up to the year 2000. Presented in a lively manner with upbeat background music, both the text scripts and audio files remain archived online at www.voa.gov/moments. Among the eclectic Millennium Moments subjects are the modern Olympic movement (ideal for September 2000 classes during the Sydney Olympics), Genghis Khan, JFK, the moon landing, the Bubonic Plague, the Taj Mahal, Alfred Nobel, Columbus, and the piano. Such intriguing topics would seem to hold greater potential for stimulating student discussion than the usual conversation textbook scenarios. The Millennium Moments soccer episode (Figure 2) might be of special interest to students in Japan and South Korea, as those two nations will co-host the 2002 World Cup.

OTHER AUDIO RESOURCES

Geared toward L2 learners of English, the BBC World Service’s weekly “Words in the News” program archives scripts and audio files dating back to 1998 at www.bbc.co.uk/worldservice/learningenglish/words/index.htm. With reports lasting roughly one minute each, Words in the News is read at normal speed but provides English vocabulary glosses for words highlighted in bold type. Figure 3 shows the script of a recent BBC Words in the News story, minus the vocabulary glosses. The user-friendly RealPlayer audio archives are the strong point of this site, most appropriate for higher-level students interested in British English, but more modest in scope than VOA Special English. (In fact, the BBC at one point produced its own “Slow News” program that has since been discontinued.) The main disadvantage is that program content is typically quite Euro-centric, making it relatively unfamiliar to the average Japanese. This could result in a schematic deficit, meaning that information cannot be fully understood due to an inadequate base of existing knowledge about the world. Words in the News is found at the BBC website’s “Learning English” section, which offers well-presented support materials for learners and educators alike, including study tips and lesson plans.

Each Monday, the “Daily Yomiuri for TOEIC” posts five streaming audio files at its website, www.yomiuri.co.jp/stream/english. The minute-long narrations originate from Japan-related stories carried on page one of the previous week’s Daily Yomiuri English newspaper, meaning that the newsprint reports can serve as scripts for the following week’s audio netcasts. As these topics mirror the top stories in the Japanese-language media, schema should be well developed. Figure 4 contains text from a Daily Yomiuri online report, intended to promote learning of TOEIC-level vocabulary. L1 Japanese glosses are provided for a small number of English words. Each of the five stories checks comprehension using three multiple choice questions in JavaScript format. It seems probable, however, that these online quizzes are intended for private

home study, not for group use in the classroom. This brings up the important question of using copyrighted materials in educational settings, a question which the rapid evolution of information technologies has made increasingly confusing. “The issue of copyright, and the education / fair-use exemption from copyright restrictions, is one of the most misunderstood, and vociferously debated, issues in teaching” (Dickey 1998). The replaying of previously broadcast news reports, for example, is plainly very different from the reproduction and classroom use of more elaborate quizzes and study aids created by someone else. Therefore, the safest and simplest solution will be for educators to contact individual content providers directly by email, requesting express permission for specific uses of their copyrighted materials. VOA does not restrict copyright of its broadcasts or scripts, although as a matter of principle sources should always be acknowledged.

Popular science, frequently involving astronomy and the environment, is the mainstay of the “Earth & Sky Radio Series,” funded by the National Science Foundation and online at *earthsky.com*. With American high school students comprising its target audience, this two-minute program tackles listener-chosen topics ranging from dinosaurs to the human genome, answering questions such as, Why is ocean water blue? and What causes hiccups? Earth & Sky also has excellent text-with-audio archives dating back to 1998; shows can be heard on the Internet prior to their radio broadcast date. Figure 5 is the partial transcript of an Earth & Sky program about bamboo. Lastly, “Learning Resources” (*literacynet.org/cnnsf*) is a superb website jointly maintained by the Western Pacific Literacy Network and CNN’s San Francisco bureau. Likely intended for individual rather than classroom use (although the author has not yet contacted the provider), this current events site is ideal for self-paced ESL learning and should be brought to the attention of highly motivated students. Learning Resources archives both RealPlayer audio and video versions of local CNN news reports, scripts, and both full-length and condensed story outlines. Comprehension is thoroughly measured using five separate online question formats, while learners can post their own opinions in an interactive discussion area. Reports are occasionally of an overly parochial Northern California nature, though. The above sections were intended to provide a snapshot of the ever-expanding variety of streaming multimedia resources available on the Internet today.

ESL LISTENING PROCESS

The listening process, particularly with respect to ESL education, is singularly complex. However, a few aspects may be considered in brief, as they form the basis for this project’s listening exercises and related classroom applications. Teacher choices play a major role in the success or failure of listening activities, and the length of a listening selection is the first matter to be addressed. Shorter is better, especially for lower-level students, so listening selections of three minutes or less are most effective. “Long tapes on subjects which students are not interested in at all will not only be demotivating, but students might well ‘switch off’ - and once they do that it becomes difficult for them to tune back into the tape. Comprehension is lost and the listening becomes valueless” (Harmer 1998; 98). As for subject matter, listening models and common sense dictate that content should be interesting, relevant and at least generally familiar. “Students often tell me they can’t understand reports because they do not know anything about the content. They feel more comfortable listening to content that is familiar and that they can make predictions about. In linguistic terms, they need to have schemata available to help them comprehend the information presented” (Mackenzie 1997). For this reason, news reports involving Japan, or global stories being simultaneously spotlighted by the Japanese media, are most schematically accessible to Japanese students. (L1 media coverage may further serve to reinforce newly acquired knowledge.) Reports that answer email questions from university students elsewhere in the world make for engaging topics, too. Showing learners in more independent settings how to individually choose their own online listening content would maximize interest and relevance.

Discussion of ESL listening models often hinges on the concepts of top-down and bottom-up language processing. By one succinct definition, “Top-down processing refers to utilizing schemata (background knowledge and global understanding) to derive meaning from and interpret the message. ... Bottom-up processing refers to deriving the meaning of the message based on the incoming language data, from sounds, to words, to grammatical relationships, to meaning” (Van Duzer

1997). In real-world listening, obviously enough, both processes are indispensable and simultaneously operative. For this reason, classroom procedures should encompass a balanced range of listening exercises requiring both top-down and bottom-up listening skills and strategies. Dictation activities, for instance, primarily involve bottom-up processing, while prediction-type activities tend more toward top-down. Also, the goals and purposes of a given classroom listening lesson vary according to three distinct stages: pre-listening, listening, and post-listening. Schema activation is key during the pre-listening stage; task engagement is central to the listening stage; productive follow-up is the focus of the post-listening phase. Restated, the overall sequence movement is from schema activation to general comprehension to detailed comprehension to productive follow-up. This sequence will now be described more concretely.

CLASSROOM PROCEDURES

Pre-listening activities are vital because if students do not possess the schematic grounding necessary for understanding a news report, or if their existing knowledge base is not activated, the remainder of the listening sequence is negatively affected. "Lack of sociocultural, factual, and contextual knowledge of the target language can present an obstacle to listening comprehension" (Saricoban 1999). Through activities such as brainstorming, students can be prompted to share and discuss what they already know about a topic. This places them in a better position to predict and infer in a top-down fashion, to make linguistic sense of the new information they are about to encounter. For the "I Love You" computer virus story, covered extensively by Japanese media and VOA Special English (Figure 1), students could form small groups and brainstorm factoids about the case. Pooling this information together on the blackboard creates a cooperative teamwork atmosphere. Students could then answer more personalized questions like these: How often do you use email? With whom and for what do you use it? What are some advantages and disadvantages of email? What problems have you experienced with email or the Internet? This pre-listening phase of schema activation is also important for clarifying at the outset the purpose of the listening experience as a whole, for priming students for maximum engagement in the various tasks to follow. "Having a purpose provides students with a reason to actively listen. ... Students without a purpose for listening will exhibit less motivation for succeeding" (Tuzi 1998).

The actual listening phase unfolds by allowing students to initially "simply listen" to the audio selection, perhaps even with their eyes closed, without the distraction of text scripts or the pressure of comprehension checks. (It should be noted at this point that when using Internet-generated audio materials, I have found it most practical and efficient to record the news reports onto standard cassette tapes for later classroom playback.) While a variety of diverse listening tasks should be employed during this stage, the slogan "gist first, details last" reflects a logical order for introducing activities. Preliminary questions should confirm overall understanding of an audio report (i.e., questions about a story's main topic or central theme); trying to immediately pick out detailed information like dates or numbers, before the broader context is internalized, can be especially overwhelming for novice news listeners. "They must get into the habit of letting the whole tape 'wash over them' on first hearing, thus achieving general comprehension before returning to listen for specific detail" (Harmer 1998; 99). Activities focusing on selective listening skills can be carried out next, after supplying students with the story script. Single-page, double-spaced scripts are best, with paragraphs lettered rather than numbered for reference, as this avoids confusion with numbered blanks within the text itself.

Next, students can "simply read" the script in silence for a timed period of perhaps four minutes, using the strategies of skimming and scanning to quickly circle words they do not recognize. They then compare unknown words with other students and attempt to jointly negotiate meanings, and to guess based on lexical clues what sorts of words or phrases might go into the blanked-out portions of the text. (Ideally, this process would unfold in English, but the use of Japanese is permissible, as the task is not fluency-oriented and the use of L1 may be appropriate.) The lesson might then proceed to a cloze activity using the script, requiring students to process incoming data in a bottom-up way as they fill in missing words while listening. To make clozes easier, possible choices can be listed in a word bank, or the first letters of blanked-out

words can be provided as hints. Wrong-word clozes require students to identify words in the text that are not spoken on the tape and to correct them. It is unnecessary to go into detail here about the numerous other varieties of open- and closed-ended listening comprehension activities. (Sequencing, true-false, multiple choice, and matching are among the question types found at CNN San Francisco's website, *literacynet.org/cnnsf*, although the actual exercises there are not assumed to be for classroom use.) Suffice it to say that a mixture of different question types cultivates a balance of the receptive abilities of listening and reading, making for a balanced experience of task engagement. The listening phase concludes with a final playing of the tape, accompanied by group choral reading of the script. While choral reading has become unfashionable in the era of communicative ESL, students are encouraged by their ability to narrate the report along with the professional news announcer, albeit at a slower speed in the case of VOA Special English.

Productive follow-up is the primary purpose of the listening lesson's third stage, post-listening. As it stresses the productive skills of speaking and writing, and requires independent creative thinking, post-listening is the most challenging aspect for teachers and students alike. Possibilities are numerous. Students, assuming the role of journalist, could be asked to write a descriptive headline for the news report they just heard, and to compose an original paragraph retelling it in their own words. Relying on the script indirectly, they could perform guided oral summaries in small groups, with each student responsible for one lettered paragraph. Learners might also formulate follow-up questions addressing their own lingering knowledge gaps about the topic, and try to resolve unclear points among themselves. They could imagine all-new scenarios picking up where the taped report left off, continuing to answer for as long as possible the repeating question, "What will happen next?" One such scenario might have the computer virus culprit eventually landing a high-paying job with an IT company, or becoming the next Bill Gates. Role-playing in pairs offers related opportunities. One student could be the perpetrator of the computer virus crime, the other a person whose expensive new laptop was ruined. Meeting in jail, what would they say to each other? What would be an appropriate punishment for the crime?

By means of such post-listening techniques, "it is possible to increase learner involvement by providing extension tasks which take the listening material as a point of departure, but which then lead learners into providing part of the content themselves" (Nunan 1997). This student-supplied content may be of a critical or interpretative nature, involving individual reactions to the listening material. What is the tone or slant of the report? Does the student personally agree or disagree with the reporter's conclusion? After an Earth Day 2000 report, students were assigned the following homework: "Think of three environmental problems, one on this campus, one in Japan, one globally. Suggest solutions. Who might oppose your solutions, and why? How might this opposition become overcome?" With higher-ability classes, a full-blown debate could ensue, between students representing corporate manufacturing and environmental activist perspectives. Clearly, many university students lack experience with such relatively time- and labor-intensive production activities, and the critical thinking skills they entail, even in their native Japanese language. Patience is required; it will require several attempts before students (and teachers) get the full hang of it.

CONCLUSION

The present project is not without its weaker points. Referring to listening comprehension activities as a whole, Saricoban (1998) states: "This type of listening exercise does not present the redundancies, the colloquialisms, the hesitations, the gestures and the facial expressions that are an inseparable part of the spoken language. They emphasize informational content and fail to provide the signals used to communicate information and meaning." Nonetheless, careful administration of the three-stage classroom procedures should approximate Saricoban's ideal to a reasonable extent, given the reality of learning English in places where the spoken language is simply not widespread. Indeed, the Internet holds the potential for creating a virtual place where English, in just such a multifaceted holistic sense, can be said to truly exist. Streaming audio-video can provide various visual hints to aid comprehension, and thus represents this perhaps utopian state of "virtual natural English" more closely than audio alone. "Some teachers, however, think that video is less useful for teach-

ing listening than audio tape precisely because, with the visual senses engaged as well as the audio senses, students pay less attention to what they are actually hearing” (Harmer 1998; 108). It may be concluded, then, that this project’s approach is appropriate in light of its immediate objective: to provide current events-based ESL listening opportunities within a structured classroom setting. This has required a substantial teacher commitment in terms of materials preparation and remaining engaged with the project over the course of its implementation and fine-tuning.

Classroom use of streaming Internet content, and of audio-video news sources like VOA and CNN, is well established (Lewis 1999; Tuzi 1998; Dickey 1998; Mackenzie 1997; Hu 1997; Koster 1994). There were several paper and poster presentations on related topics at the Fourth Conference on Foreign Language Education and Technology (FLEAT IV), held in Kobe in July 2000. In addition to the benefits and advantages of structured ESL listening practice in general, authentic materials are held to correlate positively with increased learner motivation. While the use of audio news in this project does not constitute an entire course curriculum, students do appear to be enjoying the current events reports as supplements to the frequently stilted listening passages in standard four-skills course books. Potential applications also exist for teaching theme-based courses other than English conversation. Current BBC news stories could enliven a British cultures course; Earth & Sky reports could complement science courses. For an American government class during the recent U.S. presidential election, both audio and text of speeches by candidates Al Gore and George Bush were readily available online. Students also benefit from greater critical awareness in their native language, as they are encouraged to actively follow Japanese news media. For some younger students, this project may even represent a partial introduction to the vast wealth of Internet itself, which they are urged to explore on their own. Transcript handouts always list the web addresses of the news providers, along with the URL for downloading the free RealPlayer software, conveniently available in a Japanese version.

This approach is ultimately a roadmap, pointing students in the direction of autonomous, self-paced, lifelong learning of real-world English by means of their own Internet-connected personal language laboratories. The end goal recalls the well-known proverb, “Give a person a fish and she eats for a day. Teach a person to fish and she eats for a lifetime.” The ideal educational outcome would be for each student to say in discovery, “I don’t need my teacher. I don’t even need school. I can do this by myself, at home.”

APPENDIX I — Transcript excerpts from streaming audio content providers

Figure 1 : VOA Special English

[*“I Love You” Computer Virus* ... May 19, 2000 ... written by Paul Thompson]

“Our VOA listener question this week comes in an e-mail from Curitiba, Brazil. Claudio Joao Zubek asks about the “I Love You” computer virus that has caused serious problems for millions of computers around the world. Computer viruses are electronic programs that destroy information on a computer or cause the computer to stop working. Computer experts say the “I Love You” virus is one of the most dangerous they have ever seen. It began spreading May Fourth and quickly attacked computers in more than twenty countries. ... The virus got in each computer as electronic mail that appeared to be sent from a friend. Its title was ‘I Love You.’ ...”

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Figure 2 : VOA Millennium Moments

[*“History of Soccer”* ... June 1, 1999 ... written by Albert Sieber]

“In the past one hundred years, soccer has achieved a level of worldwide popularity unrivaled by any other sport. ... International superstars known for their great skill and artistic flair have become popular folk heroes around the world. The premier international soccer tournament, known as the World Cup, was first held in 1930 and won by host team Uruguay in front of 90,000 enthusiastic fans. The 1998 World Cup final, won by France, attracted an estimated worldwide audience of

1.7 billion people. And the sport is still growing in popularity: More countries now belong to the governing body of international soccer than belong to the United Nations.”

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Figure 3 : BBC Words in the News

[“*Japanese PM criticised for describing Japan as a divine country*” ... May 18, 2000 ... written by Charles Scanlon]

“Mr. Mori was addressing politicians with links to Japan’s native Shinto religion. He described Japan as a divine country with the Emperor at its core and said the people of Japan should recognize it. Shinto was promoted as the national religion by Japan’s militaristic rulers in the first half of the 20th century and at that time it honoured the Emperor as a god. The leader of the opposition Democratic Party, Yukio Hatoyama, described Mr. Mori’s comments as dangerous and said they were a throwback to the days of Imperial Japan. ... Mr. Mori later qualified his statement, saying that he meant that the country’s history and culture should be treasured.”

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Figure 4 : Daily Yomiuri for TOEIC

[“*Mudflows engulf buildings at the foot of Mt. Usu*” ... April 12, 2000 ... written by Yomiuri Shimbun]

“Mudflows from Mt. Usu in Hokkaido have partially buried houses and other buildings in a local hot spring resort. Hot mud has been flowing intermittently from a crater on the Konpira peak. Earth and sand have poured over waterway levees and settled up to two-and-a-half meters deep at the Toyako Onsen hot spring resort. A local primary school building was half buried, and hot spring inns, residences and shops were buried almost to their roofs. Sporadic volcanic activity was observed in craters on the Konpira peak and on the western foot of the Nishiyama peak on Tuesday, spewing mud and volcanic ash as high as 200 meters into the air. ...”

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Figure 5 : Earth & Sky Radio Series

[“*Bamboo*” ... March 26, 2000 ... written by Marc Airhart]

A : “... From one day to the next, a bamboo plant can grow more than a meter. And because its roots can hold soil together, bamboo also helps stabilize easily eroded land.

B : “The timing of life and death for bamboo is complex. All bamboos of one variety live and die at the same time, no matter how far apart or in what climate they live. So, suppose you take a cutting from a Chinese bamboo, and plant it in France. Separated from the original plants of this variety, it will grow exactly as long as the others. Then, in perfect unison, all of these plants around the world will bloom and die at the same time.

A : “You’ll find more on bamboo and other Earth and Sky subjects at our web site at earthsky.com. With thanks to the National Science Foundation ... ”

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APPENDIX II — URLs, in descending order of relevance to this project

RealPlayer streaming software ... current free versions ... www.real.com/player/index.html?src=404

[News-Related Sites with Streaming Multimedia and Text Scripts]

VOA / Special English ... slower speed, controlled vocabulary ... www.voa.gov/special

[VOA / Millennium Moments](http://www.voa.gov/moments) ... popular history ... www.voa.gov/moments
[BBC / Words in the News](http://www.bbc.co.uk/worldservice/learningenglish/words/index.htm) ... teacher, learner support ... www.bbc.co.uk/worldservice/learningenglish/words/index.htm
[Daily Yomiuri for TOEIC](http://www.yomiuri.co.jp/stream/english) ... quizzes based on past week's news articles ... www.yomiuri.co.jp/stream/english
[Earth & Sky Radio Series](http://earthsky.com/Shows) ... popular science for students, extensive archives by date ... earthsky.com/Shows
[Learning Resources](http://literacynet.org/cnnsf) ... maintained by CNN San Francisco ... ideal for self-paced learning ... literacynet.org/cnnsf
[California Distance Learning Project](http://www.otan.dni.us/cdlp/education/education.html) ... similar to CNN SF site ... www.otan.dni.us/cdlp/education/education.html
[National Geographic / Pulse of the Planet](http://magma.nationalgeographic.com/pulseplanet/ax/feature_index.html) ... magma.nationalgeographic.com/pulseplanet/ax/feature_index.html
[Japan Times / Shukan ST](http://www.japantimes.co.jp/shukan-st/audio.html) ... well-designed, but weak audio ... www.japantimes.co.jp/shukan-st/audio.html
[CNN Newsroom](http://turnerlearning.com/newsroom/index.html) ... teacher support ... turnerlearning.com/newsroom/index.html
[CNN audio, video](http://cnn.com/audioselect) ... cnn.com/audioselect ... cnn.com/videoselect
[PBS / Online News Hour](http://www.pbs.org/newshour/newshour_index.html) ... in-depth news and analysis ... www.pbs.org/newshour/newshour_index.html
[Family Research Council / Washington Watch](http://frc.org/radio) radio show ... political content, vast archives ... frc.org/radio
[History Channel / Great Speeches](http://www.historychannel.com/speeches/index.html) ... audio archives (no text) ... www.historychannel.com/speeches/index.html
[Drew's Script-O-Rama](http://www.script-o-rama.com/table.shtml) ... archives of popular movie scripts (no audio) ... www.script-o-rama.com/table.shtml

[ESL-Related Sites with Streaming Multimedia and Text Scripts]

[English as a Second Language \(Rong-Chang Li\)](http://www.rong-chang.com) ... click on listening menu ... www.rong-chang.com
[Randall's ESL Cyber Listening Lab \(University of Utah\)](http://www.esl-lab.com) ... remarkable audio archives ... www.esl-lab.com
[Everyday English in Conversation \(UC Riverside\)](http://members.xoom.com/_XMCM/learningESL/Conversation_main.htm) ... members.xoom.com/_XMCM/learningESL/Conversation_main.htm
[The ESL Wonderland \(University of Florida\)](http://grove.ufl.edu/~ktrickel/activity.html) ... grove.ufl.edu/~ktrickel/activity.html
[LinguaCenter \(University of Illinois\)](http://deil.lang.uiuc.edu/lcra) ... deil.lang.uiuc.edu/lcra
[The Comenius Group](http://www.comenius.com/idioms/index.html) ... English idioms, Netscape wave files ... www.comenius.com/idioms/index.html
[EFL.NET](http://www.efl.net) ... Microsoft's Advanced Streaming Format ... www.efl.net
[Takako's Great Adventure](http://www.studint.net/takako) ... uses Shockwave plug-in ... www.studint.net/takako
[The English Listening Lounge](http://www.EnglishListening.com) ... pay site with free guest areas, Japanese menus ... www.EnglishListening.com
[Daily Yomiuri / "Web pages for English Learners"](http://www.yomiuri.co.jp/wp4el-e/wp4eltop.htm) (column archives) ... www.yomiuri.co.jp/wp4el-e/wp4eltop.htm

[Online ESL journals with full-text articles]

[Language Learning & Technology](http://llt.msu.edu) ... llt.msu.edu
[TESL-EJ](http://www.kyoto-su.ac.jp/information/tesl-ej) ... www.kyoto-su.ac.jp/information/tesl-ej
[The Internet TESL Journal](http://www.aitech.ac.jp/~iteslj) ... www.aitech.ac.jp/~iteslj
[CALL-EJ Online](http://www.lerc.ritsumei.ac.jp/callej/index.html) ... www.lerc.ritsumei.ac.jp/callej/index.html
[C@lling Japan Online / JALT CALL SIG](http://jaltcall.org/main/archive.htm) ... jaltcall.org/main/archive.htm
[The Language Teacher / JALT](http://langue.hyper.chubu.ac.jp/jalt/pub/tlt) ... langue.hyper.chubu.ac.jp/jalt/pub/tlt
[On CUE / JALT CUE SIG](http://www.wild-e.org/cue/oncue_archive/preva.html) ... www.wild-e.org/cue/oncue_archive/preva.html
[English Teaching Forum](http://e.usia.gov/forum) ... e.usia.gov/forum
[American Language Review](http://www.alr.org/ahome.html) ... www.alr.org/ahome.html

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