

# Using internet-sourced podcasts in independent listening courses: Legal and pedagogical implications

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*This paper reports on the development of an independent listening course based entirely on podcasts freely available on the internet. The course was designed to allow graduate science students to improve their scientific English listening skills using a portable MP3 player whenever they had free time available, such as while waiting for experimental results in their laboratories. As materials were delivered to and used by students outside the classroom, several pedagogical and legal problems arose during the development of the course. These issues were dealt with by developing a novel approach to creating supporting materials that are designed specifically for remote self-study, and that at the same time do not infringe on podcast copyright.*

## 1. Introduction

Over the past decade, a steady decrease in the cost of digital devices such as MP3 players and cellphones has led to increasing interest in mobile-assisted language learning (Kukulska-Hulme & Shield, 2008). This, together with the rapid growth in internet connectivity, has spawned the growing popularity of the podcast, "an audio/video file that can be 'broadcast' via the Internet with sound files that are 'pushed' to subscribers, often at regular intervals" (Levy, 2009, p. 775). While the educational potential of this technology was recognized early on (McCarthy, 2005, among others), podcasting has until recently been seen mostly as a supplementary resource for language learning. However, podcasts are now increasingly being integrated into classrooms and curricula (O'Bryan & Hegelheimer, 2007). Developers of listening materials have

started to take an interest in the steadily increasing amount of audio and video content on every conceivable topic that can be found on the web, which offers them a rich source of authentic content on which to base their lessons (Rosell-Aguilar, 2007).

At the same time, the introduction of easily-administrated course management systems such as Moodle has finally made fully internet-based second language education possible (Brandl, 2005). Course designers are now able to give their students the freedom to access, carry out, and submit multimedia coursework outside the language classroom.

However, the intersection of these two trends has raised a number of problematic issues, including that of copyright infringement by instructors copying and redistributing the original creative works that podcasters produce. It is important that course developers clearly understand the issue of intellectual property rights so that they can avoid infringing on the copyright of podcast creators, and thereby avoid leaving themselves and their educational institutions open to legal action.

In this paper I review the main intellectual property statuses that podcasts can have, and introduce a method of designing podcast supporting materials that does not infringe copyright. I contend that this approach to materials design allows listening course developers working in the area of English for Specific Purposes (ESP) to design effective non-commercial educational materials for electronic distribution, while at the same time protecting the rights of the podcast creators on whom the production of these authentic listening materials depends. My discussion of these issues is drawn from the development of a listening course piloted at the University of Shizuoka in Japan, which was based on free podcast content sourced entirely from the web.

## 2. Outline of course development

As the pedagogical and legal issues arising from the creation of the pilot course are somewhat complex, I will first briefly outline in this section the chronological development of the course. Details of the pedagogical and legal issues will be discussed in separate sections below.

The Independent Listening for Scientists pilot course was developed for the Scientific English Program at the University of Shizuoka. The program is part of the university's Global Center of Excellence Program, which has the principle educational aim of integrating the pharmaceutical, nutritional, and food sciences into a single research area. For its part, the Scientific English Program aims to increase the English communicative competence of the university's science graduate students in essential skill areas such as conference presentations, academic journal writing, and laboratory interaction. Listening is one of the weakest skill areas of the program's students, so it was decided that a scientific English listening course should be added to the curriculum. As science graduate students are generally very busy carrying out research in their laboratories, most do not have time to attend more than one English class per week. Because of this, I decided to make the listening course available over the internet in the form of MP3 audio files and PDF documents. In this way, students would be able to practice their listening whenever they had time, such as while waiting in the lab for results from their experiments, or while commuting to and from the university.

Because there were no commercially-available materials that had sufficiently specific content for the specialized life science topics that my students study, I decided to use science podcasts that were freely available on the internet. While I found several podcasts with appropriate content, I also encountered a variety of pedagogical problems. These problems

stemmed mainly from the fact that most of the podcasts were too difficult for the students to understand unaided. It was obvious that supporting materials based on transcriptions of the podcasts would be needed.

As I began to develop these supporting materials, it quickly became clear that there was a potential for legal problems to arise in relation to the intellectual property status of the podcasts. One podcast, *Scientific American's* 60-Second Science, posed particular problems because its producers claimed traditional copyright protection for their work. The podcast's audio files and transcripts could not be redistributed to students from our university's computer network without permission, nor could its transcripts be altered to make supporting materials. Fortunately, examination of US copyright law revealed that it might still be possible to create supporting materials for the podcast based on the limited sampling of copyrighted works allowed for under the "fair use" guidelines of the law, together with a strategy of inserting into the supporting material clickable hyperlinks that provided direct access to the webpages of the individual podcasts. That way, students could access the podcast content themselves, doing away with the need to save audio files and transcripts on our university server.

It is important to stress that the supporting materials created were used strictly for *non-commercial educational* purposes. If the materials had been used for commercial purposes, two of the three podcasts used in the course could not have been used without the agreement of the podcast producers. The sections below discuss in more detail the key pedagogical and legal issues that have been raised in this section.

### 3. Pedagogical issues

#### 3.1 Podcast difficulty level and the "background music effect"

Earlier unpublished research carried out at our university on a previous cohort of graduate students revealed several problems with the free use of podcasts. In that study, students were allowed to freely experiment with their MP3 players for several weeks to obtain a general indication of their interests, difficulties, etc. Informal interviews afterwards revealed two major problems with free listening.

The first problem was that the great majority of science-based podcasts were simply too difficult for most students. Many complained that they could not understand the content of the podcasts. Further probing revealed that a major problem was posed by vocabulary. A considerable proportion of the words used in the podcasts was not known to students, and even when they listened to words that they did in fact already know (as revealed afterwards by reading the transcript), they often failed to recognize these words in spoken form. This is consistent with research indicting that many second language learners have trouble identifying words when their pronunciation has been reduced or elided in rapid speech (Flowerdew & Miller, 2005).

The second problem was the "background music effect" that arose when students failed to concentrate sufficiently on the content of the podcasts. A number of students reported that they would often simply play audio files without concentrating on what was being said. This tendency appears to have been related to the first problem of excessive difficulty, which frustrated students and left them open to distraction. One student summarized the effect succinctly, saying that after a while she gave up trying to understand what she was listening to and just let the sounds "wash over" her, hoping that somehow some of the

English would “sink in.” Needless to say, this is not a method of acquiring English that is supported by linguistic research.

These problems made it clear that students needed supporting materials that would introduce vocabulary, structure listening tasks, and encourage them to concentrate on what was being said.

### 3.2 Podcast selection

Three criteria were followed in selecting the podcasts. 1) *Topics closely matching students' areas of specialization.* Only podcasts covering pharmacy, nutritional science, food science, and environmental science would be used. 2) *A range of difficulty levels.* A variety of podcasts with differing difficulty levels, from low intermediate to low advanced would be used, reflecting the range of student English proficiency levels. 3) *Transcript availability.* To ensure that students would be able to check podcast content, only podcasts that provided transcripts were considered. The available transcripts were also very useful for materials development, saving the time and effort required for transcription. Based on these criteria, three podcasts were chosen – two audio-based, and one video-based:

1. **VOA Special English Health Report and Agriculture Report.** These audio podcasts intended for second language learners are produced by Voice of America, the international information service of the United States Department of State (VOA News, 2010a, 2010b). According to VOA, its Special English programs are based on a “core vocabulary” of 1500 words, its writers “use short, simple sentences that contain only one idea,” and the scripts are read more slowly, at “about two-thirds the speed of standard English” (VOA News, 2010c). The website’s Special English Reports provided ideal material for students with weaker listening skills. Topics such as obesity, Alzheimer’s disease, and the development of aspirin were chosen. Each podcast was approximately four minutes long.
2. **Scientific American 60-Second Science.** This audio podcast is produced by the US-based popular science magazine (*Scientific American*, 2010a). As the name suggests, it provides a one-minute-long summary of a current science news topic. It is read at an average-to-fast speed appropriate for more advanced students. Topics selected included psychiatric medication, sugar consumption, and microbial genetics.
3. **MIT OpenCourseWare, Introductory Biology Course 7.014.** This video podcast consists of biology lectures for first-year undergraduates at the Massachusetts Institute of Technology (MIT, 2010a). Each lecture is about one hour long, but only excerpts of approximately five minutes in length from an introductory lecture on biochemistry were used to make listening activities.

### 3.3 Design of supporting materials

The design of the supporting materials was in line with what Flowerdew and Miller (2005) call an “integrated approach,” based on the widely-accepted view that listening comprehension is a complex, multi-dimensional process. Listeners do not merely passively absorb a message, but actively reconstruct it in their minds. Listening consists of both bottom-up processing – from words to ideas – and top-down processing – from ideas to words (Rost, 2002). Both of these processes were included in the design of the supporting materials, drawing on Rumelhart’s (1975, as cited in Flowerdew & Miller, 2005) “interactive model”

activating the learners' schema about the topic prior to starting the actual listening activity, and task-based principles of actively engaging students by, for example, having them fill in key ideas tables and summarize the main points of a talk (Flowerdew and Miller, 2005). These latter task types are especially useful for training in the "micro-skills" required to deal with the more complex ideas presented in academic listening contexts (Richards, 1983).

The use of the above approaches can be seen in the example listening activity for the 60-Second Science podcast in the Appendix. The design includes a top-down-bottom-up cycle, alternated through the seven sections of the activity. The title of each section makes that section's purpose explicit. 1. *Think...* aims to activate students' prior knowledge of the topic. 2. *Listen for main ideas...* encourages top-down processing through concentration on the main ideas and short note taking. 3. *Listen for key words...* focuses on bottom-up processing by checking off key words in a checklist. 4. *Listen for key ideas...* moves back to top-down processing by filling in a chart of key ideas. 5. *Read the script...* allows for checking answers and looking up vocabulary that was not understood. 6. *Listen again, without the transcript...* returns again to top-down focus on the overall message. Finally, 7. *Summarize the podcast* attempts to ensure that students have adequately understood the main message.

The developed supporting materials were distributed in **PDF** form. This had three advantages: 1) it allowed for flexible distribution and storage of the materials online and in students' computers; 2) clickable hyperlinks could be easily inserted into the text, giving students direct access to the podcast websites when they were connected to the internet; and 3) students could print out the **PDFs** and then complete the exercises while listening to the podcasts.

## 4. Legal issues

While all of the supporting materials were distributed to students in **PDF** format, the legal status of each particular podcast determined the method that students accessed the audio files and transcripts, and the amount of the transcript that could be sampled in the activities. The **VOA** and **MIT** podcasts had less restrictive statuses, allowing for their audio files and transcripts to be stored on our university computer network and redistributed to students, and for the entire text of their transcripts to be sampled. However, 60-Second Science was covered under conventional copyright, the most restrictive status, so its audio files and transcripts could not be distributed or extensively sampled. As that podcast had the most complex reproduction restrictions, it will be discussed last in this section. Note that, because the podcasts used in the course were produced in the United States, the discussion of copyright law in this paper is based on **US** law. However, most countries have similar laws offering protection to creative works.

### 4.1 Public domain: VOA Special English

The **VOA** Special English podcast had the least restrictive legal status. It could be used completely freely because, as a work produced by the United States government, it is part of what is called the "public domain" in **US** law. Materials in the public domain do not have copyright protection, and therefore can be copied by anyone. Most works produced by the **US** government are in the public domain, as are creative works for which the copyright protection term has expired (in current **US** law, this term is the author's lifetime plus 50 years) (Bunnin & Beren, 1998). Works in the public domain can be used freely even for

commercial purposes, and there is a growing number of listening textbooks based on the **VOA** podcasts, such as **DHC** Corporation's (2006) *Science Report Listening: VOA Science News English*. As there are no restrictions on these works, they could be freely altered, stored in, and redistributed from our computers.

#### 4.2 Creative Commons licensing: MIT OpenCourseWare

The Massachusetts Institute of Technology's OpenCourseWare podcast could also be used relatively freely as it was covered by a Creative Commons license. The Creative Commons (2010a) website describes the organization as being "dedicated to making it easier for people to share and build upon the work of others, consistent with the rules of copyright", by providing "free licenses and other legal tools to mark creative work with the freedom the creator wants it to carry, so others can share, remix, use commercially, or any combination thereof." The great popularity of the licenses – there were an estimated 130 million Creative Commons-licensed works as of 2008 (Creative Commons, 2010b) – may be a reflection of what Forsythe & Kemp (2009) describe as "the increasingly common perception that copyright, at least in the **US**, is so broadly applied that it threatens the progress of science and the useful arts, rather than promoting it" (p. 346). Katz (2006) calls it "one of the most significant recent phenomena related to the production and distribution of culture" (p. 391).

The Creative Commons license chosen by **MIT** was *Attribution-Noncommercial-Share Alike*, which allows for considerable freedom in the use of the institute's podcast materials. According to the **MIT** terms of use webpage (**MIT**, 2010b), if you use the institute's creative works:

You are free:

- to *Share* – to copy, distribute, display, and perform the work
- to *Remix* – to make derivative works

Under the following conditions:

*Attribution.* You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).

*Noncommercial.* You may not use this work for commercial purposes.

*Share Alike.* If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

For producers of educational materials, this intellectual property protection offers almost as much freedom as the public domain status discussed above, with the major exceptions that the material cannot be used commercially, and that any materials prepared based on it must also be open to the same free treatment. This licensing agreement was quite acceptable to our program.

#### 4.3 Conventional copyright: Scientific American 60-Second Science

*Scientific American* claimed conventional copyright status for its 60-Second Science podcast. According to Fishman (2008), "copyright is a legal device that provides the creator of a work of art or literature, or a work that conveys information or ideas, the right to control how the work is used" (p. 6). Under **US** law, copyright is automatically given to such works

when they are created, with no registration process required. Copyright owners have “the exclusive right to reproduce, distribute, prepare derivative works based upon, display, and perform their work” (Fishman, 2008, p. 139). In general, the use of copyrighted works by other parties requires the permission of the copyright holder.

However, under what is known as the “fair use” doctrine, **US** law does allow for the limited use of a portion of a copyrighted work *without seeking the permission of the copyright holder* (similar laws are referred to as “fair dealing” in other countries, but may have much more restrictive conditions) (Fishman, 2008). Fair use guidelines are based on four questions regarding 1) the kind of use that the borrowed part of the copyrighted work is being put to, particularly whether or not it is commercial use, 2) the nature of the copyrighted work, 3) the proportion of the copyrighted work that is being used, and 4) the effect on the commercial value of the copyrighted work (Bunnin & Beren, 1998). Interpretation of these questions can become quite complex, but from the point of view of creators of non-commercial educational materials, the relevant factors are fairly straightforward. These factors are succinctly summarized in the online copyright test offered by The Copyright Site at the University of Alabama College of Education (The Copyright Site, n.d.), which has been reproduced in flowchart form in Figure 1. Taking the example of the 60-Second Science podcast, in order to use this copyrighted work safely, the flow (in **bold**) must lead to the last element at the bottom of the chart.

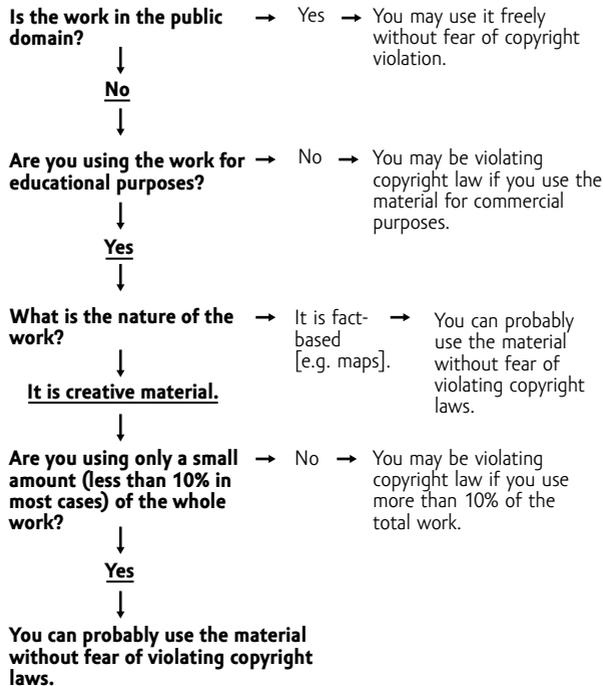


Figure 1. Copyright test flowchart. Adapted with permission from The Copyright Site (n.d.).

In short, to safely use part of a creative work, only 10% or less of that work can be sampled, and only for non-commercial educational purposes.

To confirm that *Scientific American* was indeed claiming traditional copyright over its podcasts and transcripts, I wrote to the publisher and asked the questions below. The publisher's answers are included under each question (*Scientific American*, personal communication, April 2, 2009). I began with a question related to a key conventional copyright issue, that of distributing paper copies in the classroom.

1. Is it acceptable to print podcast transcripts for distribution in our university's classrooms?  
"Distributing transcripts [is] sometimes **OK**, following fair use guidelines. But generally will require permission."
2. Is it acceptable to alter podcast transcripts to make educational activities, such as fill-in-the-blanks listening exercises, etc?  
"Altering the content is not **OK**."
3. Is it acceptable to save podcast audio files and transcripts on our university's computers for students to download and use?  
"Posting on your website is not **OK**, unless you receive permission."
4. Is it acceptable to link to podcasts from our university website or from electronic documents such as **PDFs**?  
"Linking is always **OK** and appreciated."

As expected, the publisher's responses were in line with standard copyright and fair use principles. This confirmed the difficulties that I had anticipated regarding the development of support materials for the *Scientific American* podcast.

At the same time, however, the publisher's willingness to allow direct linking to its podcast webpages suggested a way around these difficulties. Figure 2 shows the solution that I developed to avoid potential copyright violation, using the example of a 60-Second Science podcast called "Yeast Does **DNA** Tricks to Live in Us" (Intagliata, 2008).

First, as redistribution of audio files and transcripts was not allowed, links to the podcast webpage were inserted into the **PDF**, allowing students to download the **MP3** files and to check the transcripts at the webpage themselves. On the **PDF**, a copyright notice was included under the podcast title, together with a hyperlink (underlined) to the individual podcast webpage and another to the website's terms of use page: "The audio file and transcript for this podcast can be found at this *Scientific American* webpage. The podcast is a copyrighted work of Scientific American, Inc. Terms of use for the podcast can be found here."

Second, fair use guidelines indicated that my support materials should contain no more than 10% of a podcast's text, so it was not possible to produce long activities like cloze exercises. However, it was still possible to create activities involving minimal portions of sampled text, such as vocabulary checklists, key idea charts, and questions (see Appendix). I had found a solution to the copyright problem.

In order to confirm whether or not my supporting materials would be considered acceptable to *Scientific American*, I later sent the publisher an example of the materials and asked for an assessment, making it clear that the exercises would be used strictly for non-commercial, educational purposes. The publisher responded that "*Scientific American* does

Name:  
 Student number:

### Independent Listening for Scientists **Listening Activity 7:**

Scientific American **60-Second Science** podcast  
**"Yeast Does DNA Tricks to Live in Us"**

The audio file and transcript for this podcast can be found at [this Scientific American webpage](#). The podcast is a copyrighted work of Scientific American, Inc. Terms of use for the podcast can be found [here](#).

**1. Think...**

Before you listen, think about these questions.

- a. What is yeast? What kinds of yeast live in or on humans?
- b. How does yeast reproduce?
- c. Read the title and subtitle of the podcast on the webpage (**but don't look at the transcript yet!**). Check the meaning of any words you don't know. What is the main theme of the podcast?

Figure 2. Title section of supporting material for a 60-Second Science podcast, including a copyright notice, and hyperlinks to the podcast and to the terms of use webpages (underlined)

not object to the development and distribution of the teaching materials for educational purposes in the form that you have communicated your efforts to us through this email" (*Scientific American*, personal communication, October 3, 2009). Based on the publisher's response, it seems likely that this method of developing supporting materials for podcasts without infringing copyright may be acceptable to other podcast producers as well. When in doubt, however, it is always best to ask the individual producer for confirmation and/or permission to use their materials.

## 5. Pilot course execution and outcomes

The non-credit pilot course was carried out during eight weeks of the summer holidays, when no other English courses were offered to students. Details about the participants, course delivery, and pre- and post-course test are given below.

### 5.1 Participants

The participants in the pilot course were master's and doctoral degree students in the life sciences, with specializations in pharmacy, nutritional science, food science, and environmental science. All of them took the course voluntarily. A total of 30 students began the course, but only 24 took the post-test (a typical drop-out rate for the graduate students in the Scientific English Program, who are often too busy to complete its optional courses despite their best intentions).

The average English level of the students was quite low. Among the total population of graduate science students at our university who had taken the **TOEFL** test, the majority had scores of 48 points or less on the listening section of the paper-based test, a level that the producer of the test describes as "low" (Educational Testing Service, 2007) (based **227**

on a conversion from the equivalent score of 13 points on the TOEFL internet-based test (Educational Testing Service, 2005)).

## 5.2 Course delivery

Students were provided with Apple iPod Nano<sup>®</sup> (3rd generation) MP3 players. Each week, two listening activities were e-mailed to them in PDF form. Students were encouraged to complete both listening activities each week, and were asked to report which activities they had completed on a formatted spreadsheet. As all of the students were taking the course voluntarily, this self-reporting was considered sufficient.

## 5.3 Pre- and post-course test

In order to provide a basic indication of changes in students' listening ability, a pre- and post-course test was developed. As there were no commercially-available tests that adequately matched the domain of the scientific listening course, an original test was written. To avoid the problem of differences between tests, the same test was used both before and after the course. With the same test used before and after, the results were left open to the possible influence of the "practice effect" (Field, 2005), but as eight weeks of course time separated the two tests, this was considered less problematic than the likelihood of test variation. To maximize test validity, the listening passages used in it were designed to be as similar in style as possible to the selected podcasts. The test passages obviously could not be based on available podcasts, as students could easily find them online. Therefore, new passages were written and recorded based on science news stories that did not have related podcasts. The test consisted of seven listening passages and a total of 20 multiple-choice questions, and took approximately 25 minutes for students to complete.

24 students took both tests. However, only students who had completed at least 50% of the listening activities were considered to have completed the course, so the final analysis included only 23 students. The difference in mean scores between the tests was an increase of 1.86 points, or 9.3%, with a maximum increase of 9 points, or 45%. Descriptive statistics for the test results are summarized in Table 1.

Table 1: Descriptive statistics for pre- and post-course tests

	Number	Mean score	Mean score %	Median score	Standard deviation
<b>Pre-test</b>	23	9.57	47.85%	10.0	2.573
<b>Post-test</b>	23	11.43	57.15%	12.0	3.203
<b>Difference</b>	-	1.86	9.30%	-	-

As the test scores did not have normal distributions, the Wilcoxon signed-rank test was used to evaluate statistical significance. The medians of the pre- and post-tests were 10.0 and 12.0, respectively. The statistical test showed that post-test scores were significantly higher than the pre-test scores ( $T = 45.5$ ,  $z = -2.44$ ,  $p < 0.05$ ), and revealed a medium effect size ( $r = -0.36$ ) (Cohen, 1992).

However, the positive results of this pre-test-post-test comparison must be treated with caution. At just under 10%, the difference between the test means is relatively small. In addition, the practice effect may have played a role in the increased scores, as may the fact

that all of the students were volunteers, who tend to be more enthusiastic participants. Also, unfortunately it was not possible to recruit a matched control group for comparison purposes, due to the small number of science graduate students at our university. Finally, the non-parametric statistical test used in this study is less powerful than its parametric counterpart, and therefore its results need to be interpreted more cautiously (Hatch & Lazaraton, 1991). In short, the study's positive results are suggestive of improvement in student listening abilities, but more rigorous testing procedures are needed for a conclusive evaluation.

#### 5.4 *Current course format*

The pilot course has since been adopted as a credit course in the university's Scientific English Program. Materials are now distributed through the program's Moodle course management site. Students are evaluated based on the completed listening activity forms that they submit to the instructor.

## 6. Discussion and conclusion

### 6.1 *Pedagogical issues*

This paper has argued that, for the lower-proficiency learners in our Scientific English Program, the use of supporting materials based on transcripts was necessary to solve the two problems associated with free-form use of available podcasts: excessive difficulty, and the "background music effect." While advanced learners may be able to cope with podcasts about complex topics like science without such materials, basic and intermediate level learners clearly need more support. The supporting materials developed for the course forced students to concentrate on the podcast content, and encouraged them to listen to it both from a top-down perspective focused on overall meaning and from a bottom-up perspective focused on vocabulary. The introduction of key words in checklist form helped students to hear words that they may already have known but failed to recognize because they were not used to the pronunciation of rapid speech. The use of transcripts allowed them to check their solutions to concept-based tasks such as filling in key idea tables. The online transcripts used in the course were also very useful for materials design, saving the many hours of labor required to produce such transcripts.

### 6.2 *Legal issues*

This study has also stressed that, in the age of the internet, materials developers need to be more aware than ever of the importance of intellectual property issues. Developers incorporating freely available podcasts into their courses are dependent on the producers of those podcasts for their authentic materials, and it is therefore in their own interest to ensure that the producers' copyright is respected. The copying and distribution of copyrighted podcast materials by course designers deprives the podcast producers of the internet traffic to their sites that generates the advertising and other revenues used to pay the writers and announcers creating the podcasts. It also reduces the chances that students will explore the podcast website to discover additional interesting and useful materials for themselves.

The first step to responsible use of a freely available podcast is to determine the legal status of the work. If the podcast is public domain like the VOA Special English podcast, it **229**

can be used with complete freedom. If it has a Creative Commons license like the MIT biology lectures, care should be taken to carefully follow the terms of the license. The popular Attribution–Noncommercial–Share Alike license used by MIT allows for the free alteration and distribution of the materials, but it also requires that the producer be credited and that the remixer adhere to the same license and not-for-profit motives. Finally, if the podcast is protected by conventional copyright, like *Scientific American's* 60-Second Science is, great care should be taken in using its materials. It will not be possible to redistribute the podcast's audio files or transcripts from a course website, nor will it be possible to alter the transcripts to make supporting materials.

However, as the case of the 60-Second Science supporting materials developed for this pilot course makes clear, if proper care is taken, it is indeed possible to make supporting materials which do not infringe on copyright. The fair use guidelines of US law allow for sampling of up to 10% of a creative work if the sample will be used for non-commercial educational purposes. This can be sufficient for creating activities such as vocabulary checklists and key idea tables. In addition, in order to avoid the problem of illegal redistribution, clickable hyperlinks can be inserted into electronic text files such as PDFs. When students click on these links, they are taken directly to the podcast's website to access the audio files and transcripts themselves. Furthermore, it is also good practice to place a copyright notice in the supporting materials to indicate the owner of the copyright. Finally, if there is ever any doubt about whether a part of a creative work can be used or not, the safest and most responsible thing to do is to contact the podcast producer directly and ask for permission.

If developers of podcast support materials follow the principles described above, they should be able to create interesting activities in electronic form that give their students access to the ever-growing volume of authentic listening materials available as podcasts. They should also be able to avoid bringing legal action against themselves and their educational institutions, and at the same time bring increased exposure and commercial value to podcast producers' creative works. That would clearly be a win-win situation for all concerned.

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**3. Listen for key words...**

Read through the words below. Check any words you don't know in your dictionary. Then listen again and check off  each word as you hear it. The words are spoken in the same order in the podcast, but in the list there are **two extra dummy words** that are not spoken – don't check them! You may need to listen several times to make sure you have checked off the correct boxes.

immune  → customized  → reproductive  → cold   
 chromosome  → meiosis  → mates  → double  → toss off   
 circle  → useful  → trashes  → grab bag  → diverse  → strains  →  
 resistant  → antifungal  → sexual  → spores  → dispose  →  
 getting busted

**4. Listen for details...**

Listen again to the section of the report from **0:24 to 0:45** for details about **differences in reproduction strategy between humans and *Candida albicans***.

	Humans	<i>Candida albicans</i>
Number of chromosomes		
Method of reducing number of chromosomes		

Now listen to from **0:45 to 1:08** and write down the **two reasons that *Candida albicans*' reproductive cycle is useful in helping it survive**.

Reason 1: \_\_\_\_\_

\_\_\_\_\_

Reason 2: \_\_\_\_\_

\_\_\_\_\_

**5. Read the script...**

To check your answers to the questions above, read along with the transcript. When you've finished, check the words that you don't know in your dictionary. (Ideally, you should check every word, but be sure to check at least the words that seem to be most important.)

**6. Listen again, without reading the script...**

Concentrate on the words. If there are many that you still can't understand, return to number 5. (Ideally, you should listen and check again and again until you can understand every word.)

**7. Summarize the podcast**

To make sure that you have understood the podcast, write a one or two sentence summary of its main message in English. If you're not sure about the main message, return to number 5 above.

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## Author biodata

**Philip Hawke** is Global Center of Excellence Associate Professor at the University of Shizuoka. He develops and instructs the university's Scientific English Program (<http://goeenglish.u-shizuoka-ken.ac.jp/>). His principle research interests are in **ESP** program and materials development, particularly in the areas of academic writing and academic presentations.