

# Effective implementation of interactive podcasting for the Web 2.0 generation

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*Podcasting has become a popular medium for teaching and learning in modern universities and schools worldwide. Most often used podcasts are developed by instructors to broadcast content information for their students to access at leisure. This article explains how podcasts have been developed by students to support their learning and share with fellow learners. In addition, the students' podcasts are furthered by adding multimodal interactivity with text, quizzes, images and links to websites. This article details the development of the interactive podcasts and provides quantitative and qualitative evidence of their efficacy.*

## Introduction

Research on technology implementation in education supports the claim that the development of autonomous learners needs to be facilitated by a social constructivist approach to teaching and learning (Luke *et al.*, 2005). A constructivist approach is about constructing knowledge, not receiving it; thinking and analyzing, not accumulating and memorizing; understanding and applying, not repeating back; and being active, not passive (Marlowe & Page, 2005). With particular reference to Japan, Prefume (2007) argues that the implementation of a constructivist approach enhances the ability of foreign language educators to develop better communicators. Web 2.0 and its emphasis on social communication and collective intelligence fits well with the constructivist approach to teaching and learning.

Web 2.0 envisages the World Wide Web as a strategic platform in which data inserted by users leads to collective intelligence (O'Reilly, 2005). The Apple iPod is an example of the intersection of computing and Web 2.0 (Bull & Ferster, 2005) as podcasting harnesses the power of the Web platform through user participation in developing content with text hyperlinks to images stored on an iPod (or to Web pages if online). It is reasoned here that student-generated podcasts can be an effective medium and resource for learning.

## Procedure

This section describes the initial development of a podcast using Apple's *Garageband* software. Before introducing podcasting to students, it is vital the instructor prepares the task aims, determines the specific language focus, has a clear vision of the intended outcome, and has a means of evaluating both the process and product (see Figure 1).



Figure 1. Podcast process

In this example, the topic of Paragraph Writing has been presented in a Communications Skills, Strategies class. The creation of a podcast is undertaken in the Communication Skills, Practices class. The aim of this podcast is to reinforce the components of a paragraph (Topic sentence + supporting ideas + concluding remarks) through oral production. An affective aim is to encourage students to practice speaking via the podcast rehearsals. A handout is provided for the podcast conversation but the focused components of paragraph construction are deleted for student completion (see Figure 2). The podcast is then ready to begin. The outcome will later be exported to *iTunes* and the *iPod*, complete with text links and Web links. A rubric will be used to assess the students' work.

**Student A:** Good morning/ afternoon. Welcome to Communication 2 at Future University here in beautiful Hakodate in Japan. My name is \_\_\_\_\_ .  
Today I have with me..  
*Student B:* Hello, my name is \_\_\_\_\_  
*Student C:* Hello, my name is \_\_\_\_\_

**Student A:** In today's podcast we are going to talk about Communication 2 Strategies. Tell me <name of student B> what are you studying now in your Strategies class?  
*Student B:* We are reviewing paragraphs \_\_\_ with Professor \_\_\_\_\_  
*Student C:* Yes, it is very interesting. Paragraphs convey one idea or one explanation.  
*Student B:* Yes. And a paragraph contains different parts.

**Student A:** Tell me <name of student C> what are the parts of a paragraph?  
*Student C:* They are \_\_\_\_\_ .

**Student A:** Thank you. <name of student B> , you studied paragraph writing with Miss \_\_\_\_\_ also. What topics did you write about?  
*Student B:* I wrote about \_\_\_\_\_

**Student A:** Thank you. <name of student c> , you also studied paragraph writing with Miss \_\_\_\_\_ also. What topics did you write about?  
*Student C:* I wrote about \_\_\_\_\_

**Student A:** Thank you. <name of student B>, what words connect sentences inside a paragraph.  
*Student B:* They are called \_\_\_\_\_ words. For example, AND, BUT, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
*Student C:* Yes. ALSO, \_\_\_\_\_ , \_\_\_\_\_ are more examples.

**Student A:** Well that is very interesting. You are learning how to write good paragraphs in your Communication Strategies class. Thank you. That concludes today's podcast. Goodbye.  
*Student B:* Goodbye.  
*Student C:* Goodbye.

Figure 2. Controlled practice text

On the Apple computer open the *Garageband* software and select Create New Podcasts Episode.



Figure 3. Create a new podcast in *Garageband*

The main functions to note when using *Garageband* for podcasting are the Record button, the Tracks, the Track Editor, the Loop browser, and the Media browser (see Figure 4).

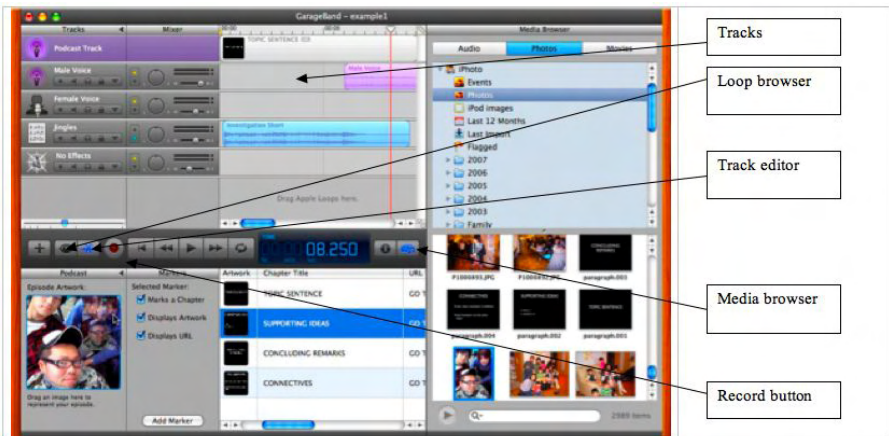


Figure 4. *Garageband* interface

Once the students have prepared their content from the handout provided, they can rehearse their podcast numerous times in *Garageband*. Select the appropriate Track (Male voice or Female voice), press the Record button and speak into the computer's microphone. To stop, press the Record button once again. To delete the recording simply select the track and press the delete key on the keyboard.

The advantage of this podcasting strategy is that while all students are rehearsing (speaking), the instructor can walk around and coach students on pronunciation and prosodic features of their English. The students, when satisfied, can then save their recordings (File - Save).

Before and after voice recordings in a commercial podcast is music. These are called jingles. Jingles are accessed by pressing the Loop browser button, selecting Jingles, and dragging an appropriate jingle to the Jingle track (see Figure 5). The jingles can be repositioned by dragging them horizontally along the Track. To normalize the sound so that both spoken audio and music are more or less at the same volume, use the track volume sliders.

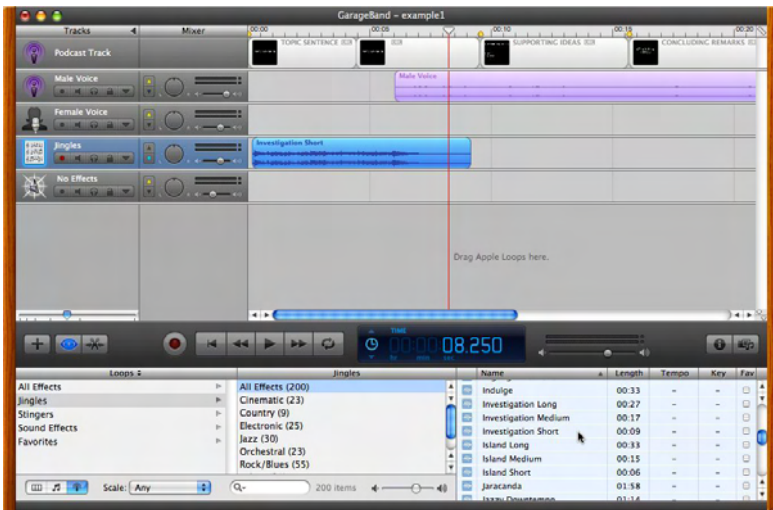


Figure 5. Add a jingle

The podcast currently contains the students' spoken audio plus some music before and after the speaking. Next, images that appear at predetermined times can be added. To do this, students can use a digital camera and upload photos to iPhoto. Alternatively, large font text can be typed into PowerPoint slides and then these slides exported as JPEG images to iPhoto. To view the images in *Garageband*, select the Media browser button and drag the appropriate image to the uppermost podcast track (see Figure 6). The duration of the image can be altered by making the image length longer or shorter. To add a Master image of the students, drag their picture to the Episode artwork box on the far left of *Garageband*.

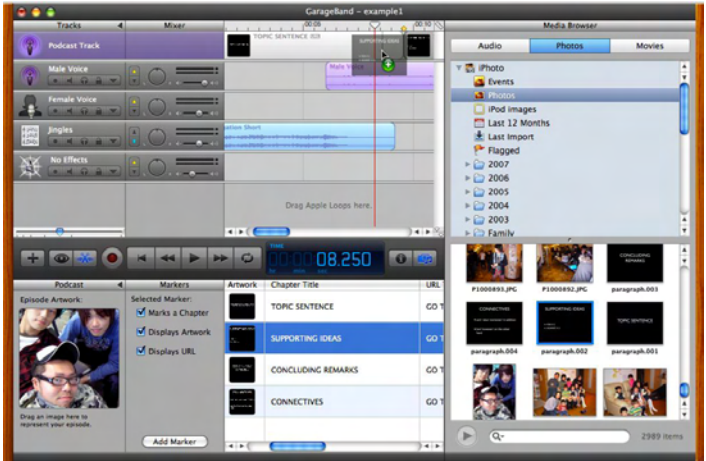


Figure 6. Add images

The images within this enhanced podcast can be linked to relevant Websites. Select an image in the podcast track. The Chapter title, URL title and Web page address (URL) can be typed in (see Figure 7). This means that when the podcast is opened in iTunes on a computer connected to the World Wide Web, one can click the link within the podcast and the computer's Web browser will open at the selected Website. This is an opportunity for students to seek and negotiate appropriate Web pages for linking.

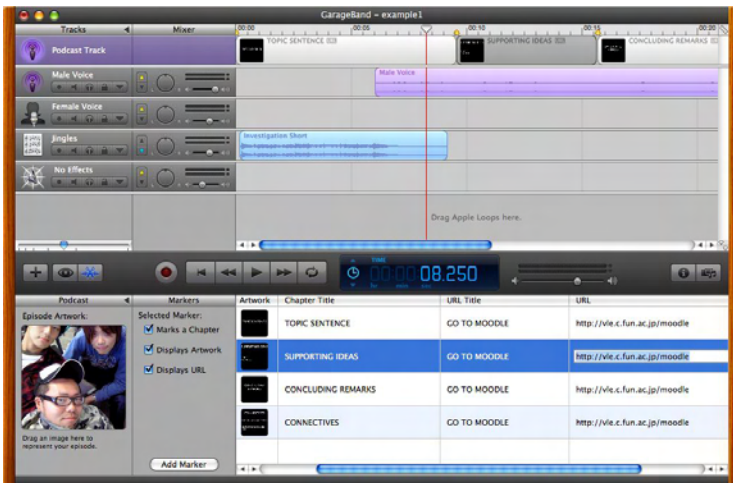


Figure 7. Add Web links

The podcast is now ready to be exported as a 'mp4a' file to *iTunes*. Simply choose the Share menu and Send podcast to *iTunes* (see Figure 8). The podcast will automatically open in *iTunes* (see Figure 9).



Figure 8. Send to *iTunes*



Figure 9. *iTunes*

To add value and interactivity to podcasts, text links can be developed. To do this the *iWriter* software is highly recommended (see Vallance, 2006 for details of using *iWriter* for interactive stories called *iStories*). *iWriter* allows students (and instructors) to add text and links which can be viewed on an iPod. One example is to create some background text for a podcast and then link to listening quizzes which become viewable on the iPod. Open *iWriter* and choose the Quiz template (see Figure 10).



Figure 10. iWriter

Text can be typed into the main pages. Quiz questions with corresponding answers are added to the template pages as shown in Figure 11

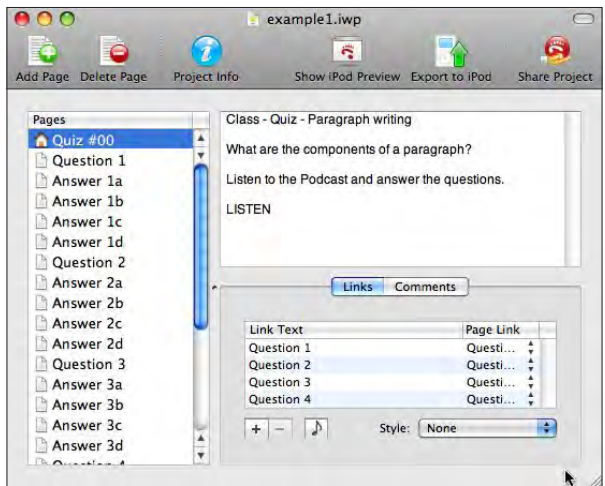


Figure 11. iWriter interface

The podcast is linked by selecting the audio icon (music notation symbol). The Link to song button needs to be checked and the correct audio chosen. Changing the caption is also advised (see Figure 12).



Figure 12. Add a Podcast

The development of the quiz can be viewed by selecting the Show iPod Preview button (see Figure 13).

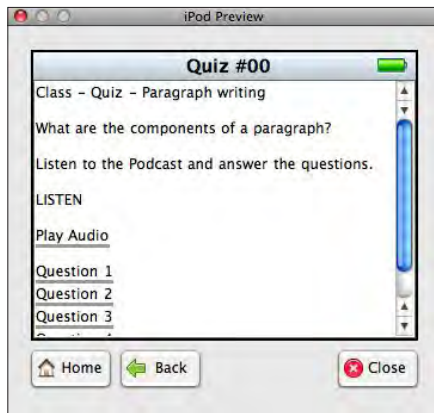


Figure 13. iPod preview

Once completed the Quiz and Podcast can be synchronized to a connected iPod by selecting the Export to iPod button (see Figure 14).

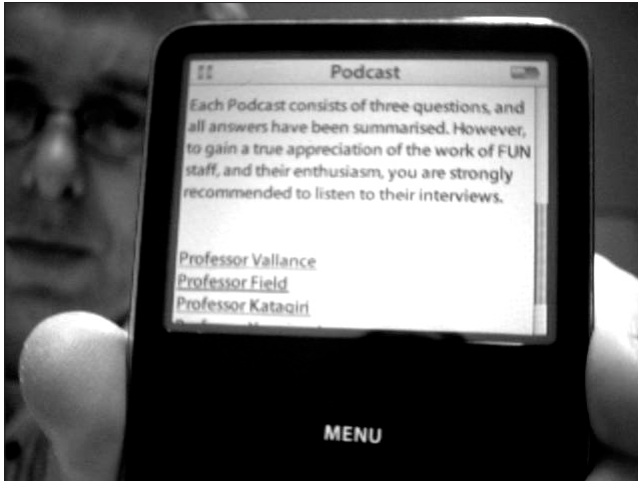


Figure 14. iPod

## Discussion

Instructors using technology should always be asking, "Is IT worth it?" How can we determine whether the efforts and time of instructors and students are spent effectively? The academic literature, at best, suggests no significant difference in gains from tests between technology using students and those not using technology (Cox *et al.*, 2003). That is not to say using IT in teaching is not worthwhile. Towndrow & Vallance (2004) provide clear guidance for language teachers through a focus upon surrounding issues of informed use and a technology influenced pedagogy. Towndrow (2007) particularly focuses upon task design. For individual teachers all working with unique students in unique settings under unique circumstances, a suggested strategy is Action Research. Quite simply, this means collecting data about the students and determining if technology did in fact make any difference. This can be done in a number of ways. One suggested procedure is to use a pre and post test format. The results will not only reveal any impact but also help teachers reflect and act upon their existing pedagogies for better teaching.

The data in Figures 15 and 16, Graduate Study results, show students' pre and post text scores using iPods in a first year Communication Skills course at Mirai Daigaku, Hakodate, Japan. Podcasts were developed by different students. The tests involved recognition of facts that were discussed throughout the podcasts. Some podcasts were in Japanese and English but the emphasis was not always on language but often upon topic content. Students' general knowledge would have been tagged in the pre test. The results indicate an increase of 15% and 10% for Groups 1 and 2, respectively. The higher scores in the post tests suggest a recognition and recall of the information gleaned from using the iPods. A 't' test confirms that the results are indeed statistically significant and that the use of the iPods did have a positive impact on retention of information. A further detailed study will be conducted in the next academic year using a control group and an experimental group.

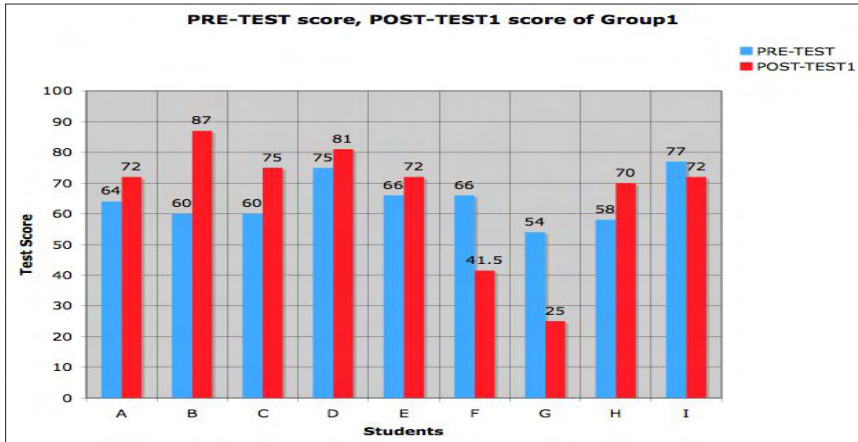


Figure 15. Graduate Study results- Group 1

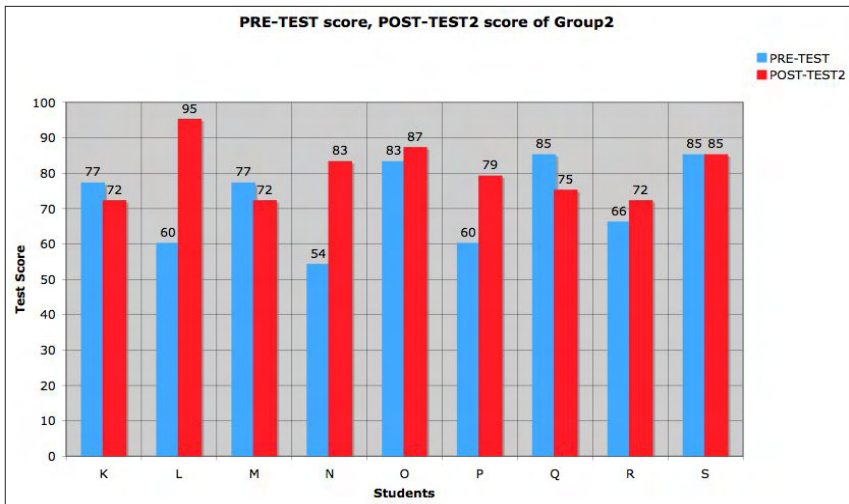


Figure 16. Graduate Study results- Group 2

Percentage differences indicate most students increased their post test scores (see Figure 17).

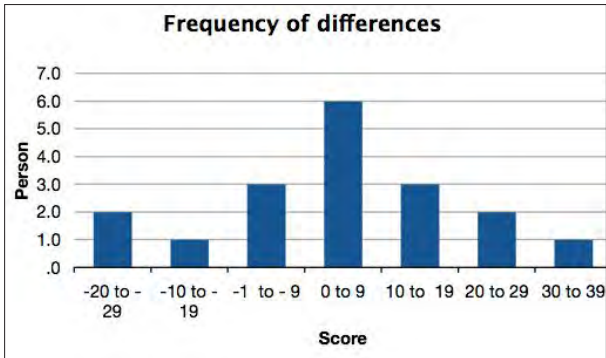


Figure 17. Frequency of differences

Students generally enjoyed using the iPods for study: 84% of students stated that iPods should be used by the university in future. A summary of comments are provided in Figure 18 and Tables 1 and 2.

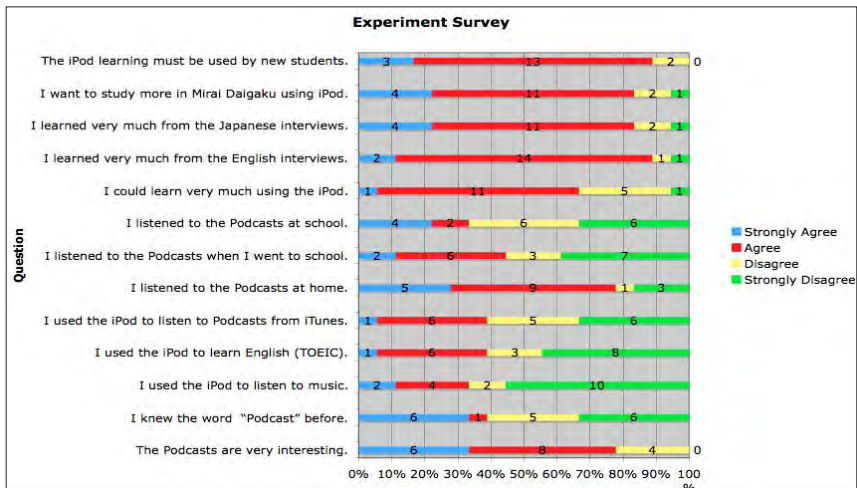


Figure 18. Graduate Study survey

Table 1. Positive comments about iPod study

Japanese	English
iPodを使って楽に勉強できた。	I could easily learn using iPod.
Podcastという言葉は知っていたが、実際にどのようなものかは知らなかったので貴重な経験になった。	I knew the word of "Podcast", but I didn't actually know anything. It was a precious experience for me.
iPodを使った学習は効果的だったと思う。学習もスムーズにできた。iPodを使うことに興味を持ったし、多様な使い方ができる機械だと思った。	Pod learning is practical. So I could learn smoothly. I could be interested by iPod, and I thought that iPod is a variety of machine.
iPodを使ったことがなかったので、楽しかった。	As I had not used iPod, so I enjoyed it.
何度も繰り返し聴けるので、勉強のためにはなると思った。	As iPod can be listened over and over again, it is very useful for learning.
今度、自分のiPodが手に入ったら、それで音楽を聴いてみたい。	I will want to listen to music by iPod when I get my iPod in tune.
Podcastはとてもおもしろいと思う。	Podcast is very interesting.
Podcastはとても楽しいものだとおもう。	Podcast is very nice.
iPodに、学習教材をいれて持ち歩けば、いつでもどこでも学習することができるので、時間があまりない人が、移動時などに聴くと効率がいいと思った。	If I put the learning teaching materials in iPod and carried it, I can learn anywhere anytime. So I think that iPod is an efficient for the busy person to listen at the time of movement.
TOIECの問題を、MoodleのiPod quizに出題すれば、より一層理解度が深められると感じた。	I felt that understanding degree was deepened still more if I made questions for a problem of TOIEC in iPod quiz of Moodle.

Table 2. Negative comments about iPod study

Japanese	English
iPodはとてもなじみ深くなく、突然、iPodを渡されてもまどうばかりであり起動できなかった。	Because iPod is very unfamiliar for me, I was confused when I was given iPod. So I could not boot it.
「学習しよう」という意識なしで、ただ聴くだけでは、興味のある内容しか頭に入らなかった。	Just I listened to it, I could not remember all contents without a intention of learning.
iTunesのPodcastから取ったものなら、iPodを使って続けて聴くかもしれないが、インタビューしか聴けないと、1回聴くだけで、何回も聴くことがないと思う。	The person may continue listening Podcast downloaded from iTunes using iPod. But I may not listen again and again. Because it is only interviews.
同じものを何度も聴くとあきてしまうので、あまり聴くことができなかった。	I could not listen little time. Because I was tired of some stuff.

iPodを聴く時間が少なかった。

I could not have enough time listening by iPod.

iPodはあくまで屋外での利用が基本となるので、屋外での使用となると、音楽でも何でも聞き流す程度なので、勉強には不向きであると思わなくもない。

Mostly iPod is used outdoors, I think that learning iPod is unfit to learning because using it the outdoors pay no attention to music or something.

SPIの話は要点がどこにあるか分かりづらかったので、あまりおもしろくなかった。

The interview of SPI is not so funny that it is not understandable when the story is essential.

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The above data will prove useful in the development of future podcasts by students for students.

## Conclusion

In conclusion, podcasting has been shown to be a valuable technology tool to support students in their language development. Adding interactivity to a podcast introduces the multimodal elements of text, audio and images for a more enlivened and creative learning experience. Passing ownership of podcasting to the students is motivating as it allows students to share their digital artifacts with their classmates, friends and the world. This is, after all, the collective intelligence of Web 2.0.

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## Useful links

Name	URL	About
Garageband	<a href="http://www.apple.com/ilife/garageband/">http://www.apple.com/ilife/garageband/</a>	About the software
Student gallery	<a href="http://www.apple.com/jp/education/profiles/index.html">http://www.apple.com/jp/education/profiles/index.html</a>	Podcasts in education in Japan
Pavitar Singh	<a href="http://www.pavitersingh.com/WhyPodcast">http://www.pavitersingh.com/WhyPodcast</a>	Podcasts at school in Singapore
Graduate Study	<a href="http://homepage.mac.com/graduatestudy/">http://homepage.mac.com/graduatestudy/</a>	Mirai University podcasts
iWriter	<a href="http://www.talkingpanda.com/iwriter/">http://www.talkingpanda.com/iwriter/</a>	Add text to iPods
Audacity	<a href="http://audacity.sourceforge.net/">http://audacity.sourceforge.net/</a>	Audio alternative
Mogopop	<a href="http://www.mogopop.com">http://www.mogopop.com</a>	Upload to Web

## Key terms

- *Garageband*: software by Apple for producing podcasts and other audio artifacts.
- iPod: a portable, multiple media player manufactured by Apple.
- Multimodal: in educational technology contexts, a mix of text, audio, video and images.
- Podcast: a digital audio broadcast that can be played on a computer or a portable media player.
- Task design: an arrangement of a scheme of actions leading to a learning outcome or artifact.
- Web 2.0: technology tools for shared communication by multiple users leading to collective intelligence.

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