

iWriter White Paper

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Overview

iWriter is a desktop application available for both Macs and PCs created by Talking Panda that allows anyone to easily create and share educational content to be delivered primarily via the iPod platform, enabling media-rich, mobile learning. Educational materials authored within iWriter can include text, audio, and still images, and hyperlinking pages allow for non-linear navigation.

<http://www.talkingpanda.com/iwriter>

Background

Applications such as iWriter were originally used to create "iStories," or eBooks formatted for the iPod, but quickly expanded to support other applications, such as:

- non-linear "choose-your-own-adventure" storytelling
- quizzing
- music and language instruction
- medical reference
- self-guided museum tours

According to the 2006 Faculty Advisory Committee on Academic Computing (FACAC) Student Survey Report

conducted at Penn State's University Park campus by the Survey Research Center, 38.6 percent of the students surveyed own iPods, making applications like iWriter a compelling solution for enhancing teaching and learning.

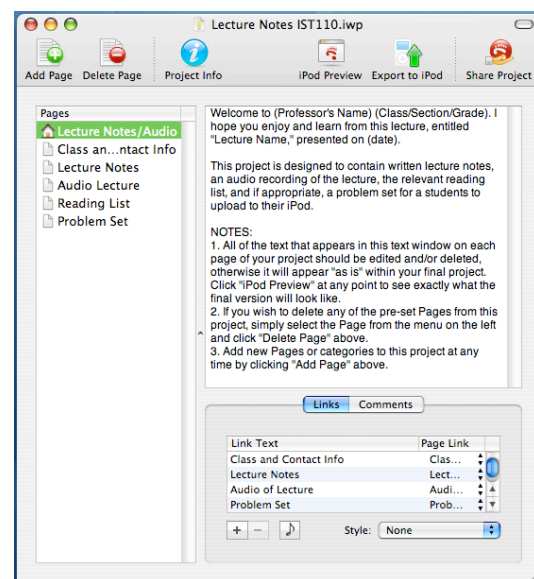
Technical Requirements

The iWriter authoring tool is available for both Mac OSX (10.2.8 or later) and Windows (2000/XP). iTunes (4.7 or later) is required for iPod syncing. iWriter content can be shared by distributing installer files via e-mail, ANGEL, LionShare, etc. These installer files contain all the text, audio, and navigational elements that constitute an iWriter project, and automate the process of syncing to the user's iPod. iWriter can also easily generate HTML content, providing an alternative for those who do not have an iPod.

Licensing and Costs

Single-User License: \$29.95
(15-day free trial available)

Volume Pricing for Educational Institutions: 10K+ users @ \$3.50 or less



iWriter Authoring Environment

Assessment

Implications for Teaching and Learning

Distance education: Portable audio bridges barriers of time and place to offer distance learners access to on-campus lectures and seminars. As the number of university students completing all coursework at a distance rises from 7 to 25 percent by the year 2016 (Dillon 2006, March 1), the coupling of portable audio with portable text via iWriter offers enhanced and diversified pedagogical options for distance education.

Enhanced retention: On their own, both an active lifestyle and music listening have been empirically associated with increased cognitive function. However, the combination of listening during physical activity has been shown to increase verbal fluency more than either exercise or listening alone (Emery et al. 2003). For education, this suggests that audio on-the-go may, in fact, be superior to place-dependent listening. Text/audio combinations such as those possible via iWriter increase the variety of content which may be presented in this format, e.g. content which necessitates some amount of textual support in order to be presented auditorily.

Self-paced multimodal activities: These can include "drill and practice" exercises in which students review materials for mastery, or simple multiple-choice quizzes.

The spoken word: Portable devices, and particularly the iPod, have been lauded as the "limousine for the spoken word" (Don Katz, as cited in Levy 2004, July 26), making them ideal pedagogical tools for subject areas such as language learning. However, text/audio combinations,

such as those possible via iWriter, allow greater educational manipulation of this tool, e.g., in teaching the association of orthography and sound in a foreign language.

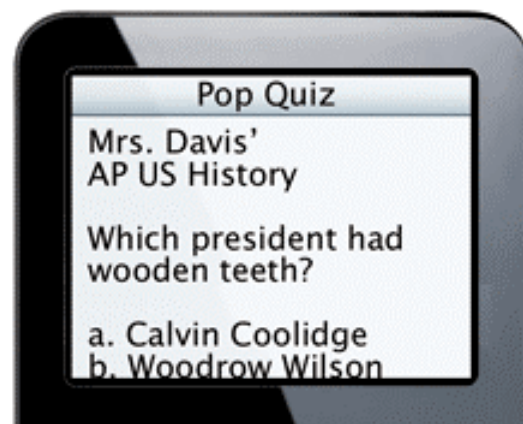
Listening skills practice: In music instruction, examples might include ear training for scales or modes. For a speech course, listening skills might involve identifying the main points of a speech.

Digital literacy: Students evaluate and create digital content, increasing skills and capacities with technology.

Content creation: Student-generated content is a processing activity that encourages active engagement with course materials. Examples could include student-created stories or activities that they could then share with their peers.

Simulation to develop decision-making skills:

An effective means of developing critical thinking and decision-making skills in students is to present them with interactive simulations of real-world problems. At a basic level, these simulations can consist of decision trees enhanced by audio or visual content.



iWriter project viewed on an iPod

Related Research

Portable Audio and the Brain

An active lifestyle has long been linked to heightened cognitive function. However, when physical activity is coupled with cognitive stimulation, the improvements in cognitive function are even more significant (Emery et al. 2003; Gomez-Pinilla and Kesslak 1998). Despite a lack of precise information regarding the molecular and cellular mechanisms of this "extra positive effect" (Fabre et al. 2002, p. 421), preliminary research implicates 1) increased cerebral blood flow (Rogers et al. 1990), 2) greater oxygen delivery (ibid.), 3) higher levels of basic fibroblast growth factor messenger RNA in the hippocampus and cerebellum (Gomez-Pinilla and Kesslak 1998), and 4) decreases in depression and anxiety (Emery et al. 2003). Despite the intuitive supposition that more intense physical activity might foster even greater cognitive improvement, cognitively optimal physical activity appears to be a balance between over- and under-stimulation (Fabre et al. 2002). Indeed, increasing evidence suggests that activity interspersed with periods of rest produces longer-lasting memories than does more intense, massed training, possibly by virtue of differential protein synthesis (DeZazzo and Tully 1995). Regardless of physical intensity, it is clear that to "listen while you run" (Seymour 2006)—or while you walk—may not only be fun but also educational.

Multimodal Support and the Brain

In designing learning environments and learning objects, multimodal support (such as that provided by the text/audio packaging of iWriter), has been linked to more effective comprehension and recall (e.g., Brett 1997). As noted by Doughty and Long (2003) in discussing optimal psycholinguistic environments for

distance foreign language learning, "[o]ver 20 empirical studies have compared the comprehensibility of simplified and/or elaborated and/or genuine spoken and written texts. The general finding is that simplified and elaborated texts, whether spoken or written, achieve roughly comparable levels of comprehension among non-native speakers, and that both achieve higher levels of comprehension than genuine texts." By lowering the cognitive demands placed on the listener (cf. Mayer and Moreno 2003), multimodal support suggests increased pedagogical value for audio learning objects.

Strengths and Suggestions for Future Releases

Strengths:

- Ease of use; creating the text content is very straightforward, and linking to files is a simple one-step process.
- iPod screen preview simulates iWriter project's appearance on an iPod.
- Templates are helpful in providing structure for the development of the projects, especially for those new to the product.
- Ability to create HTML pages containing project content for students without iPods
- You have the choice to either leave text on the screen while audio is playing, or switch to a separate screen which allows images to accompany audio.

Suggestions for Future Releases:

iWriter:

- Ability to load projects to non-iPod devices
- Ability to plug in new installer-sharing options (e.g., for integration with a CMS)
- Ability to add multiple audio files to a single page

- Ability to include links inside the text body, not only at the top or bottom of the screen.

iPod note implementation:

- Ability to adjust audio levels once a project audio file is playing
- Ability to add notes larger than 4,096K
- Text that is easier to read on older iPods
- Ability to display special characters (accented characters, etc.) within an iWriter project on an iPod

Adoption and Use

Examples of iWriter's adoption are plentiful, though not necessarily in formal educational environments. Instead, iWriter is popular among a community of writers who use the application to create iPod-based interactive stories, or iStories. These stories generally take the form of an adventure or mystery, though simple quizzes are also common.

While the purpose of most iStories is entertainment, the instructional applications for such stories include role-playing exercises and simulations.

In the K-12 arena, iWriter will be incorporated into teacher training under a grant from the New Jersey Department of Education. This teacher training will focus on technology integration into curriculum and instruction.

Michael Vallance, Associate Professor at Future University-Hakodate (Japan) has been using iWriter for the past year. He worked with primary school teachers in Singapore to develop a digital story of multiple paths based upon a National Education/citizenship theme. Teachers added audio files linked to the reading text. (Vallance, M. (2006). Interactive stories on an iPod. *Modern English Teacher* Vol 15, No.1).

At Future University-Hakodate in Japan, Professor Vallance is using iWriter with science students in a communication course. The students are asked to create multiple-path stories, linking to images and audio files. These activities raise student digital literacy and focus on the process of digital story development.

ANGEL Integration

ANGEL's most obvious role related to iWriter would seem to be as a vehicle for the hosting and distribution of the iWriter installer files. There are two primary ways to distribute the required files: e-mail the files or make them available in a centralized location. Providing the files within the ANGEL environment has several advantages over the e-mail option:

- There are no concerns about filtering or rejections of attachments.
- If there are several iWriter projects, they can be contained within one file in ANGEL.
- Both the Mac and PC install files can be provided in one location, so there is no need to e-mail both files to all students.
- When files are changed, they can be reloaded instead of e-mailed to students a second time.

In addition to the installer files, another aspect of iWriter that can benefit from the ANGEL environment is the hosting of the HTML files for students who do not own an iPod. The HTML files can be zipped and loaded to the lesson content section of an ANGEL course, allowing all students to benefit from the content.

Integration with ANGEL may also improve compliance with the TEACH Act by placing content where it can only be accessed by authorized students.

Use Cases

Quizzing: Essential Latin for Law Students

Professor Wilson's Civil Procedure Law course demands that students learn and apply key Latin phrases common in civil law proceedings. As a solution, he creates self-assessment quizzes containing the 120 phrases his students might encounter. Using iWriter, Professor Wilson provides the written term as well as a link to an audio file of the term's pronunciation. Students would then select the correct definition of the term from a multiple-choice list. Quiz feedback would indicate if the user's response was correct or incorrect. In addition to the correct/incorrect feedback, responses would contain a link for additional text content discussing the broader legal context of the term.

Choose Your Own Adventure: Biological Emergency Preparation for First Responders

Professor Dennis is the instructor for HLS 410: Public Health Preparedness for Disaster and Terrorist Emergencies. The course is a part of the Masters of Homeland Security in Public Health Preparedness offered by Penn State's College of Medicine. This program is offered online by Penn State's World Campus, and employs a wide range of technologies. Professor Dennis creates an "adventure" that centers around a simulated case of a biological emergency for which his students have to select a course of action, based on the information available to them. Because the students in the program are primarily first responders (police, fire, EMS, etc.), decision sequences are very important in the performance of their duties. Audio files of dispatcher reports and media sound bites would provide users with key information with which they would make their decisions.

Reference Guide: Teaching Computer Networking

Dr. Smith is teaching a computer networking class that has a significant hands-on component. He often requires students to examine network hardware and actually piece together the various components into a functioning network based on specific topographies. Some students complain that in a crowded lab with equipment and wires laying everywhere, it is distracting to have to go back to their computers or print instructions when they need a reference. Dr. Smith decides using iWriter might be a good solution. He creates several tutorials that briefly walk students through each element of the network designs they need to learn, which he makes available on ANGEL. Back in the lab, students are now able to listen to Dr. Smith's instructions while they are working, occasionally reading supporting text on their iPod screens or looking at diagrams attached to each audio file. The students are happy they can get their work done faster and Dr. Smith finds they do not need to track him down for help as often.

Walking Tour: Penn State Campus

Administrators at Penn State decide they want to create a walking tour of campus that incoming freshman have access to. Some of their requirements are that individual students can take the tour on their own time, the tour should be self-paced, and the tour should integrate multimodal content (audio, visual, and textual). The iPod is their device of choice, since recent surveys show that 38 percent of incoming freshmen arrive at Penn State with iPods, and the University also allows students to borrow these devices. They decide to use iWriter to author their tour. When students arrive for orientation, they are able to load up their iPods on the spot. As they walk around campus guided by the map on their screen, they listen to a history of the landmarks, learn about

the departments housed in each building, and hear other students talk about their experiences at Penn State.

Enhancing Audio Content: Music History

Professor Kelly has been teaching a music history class for several years in a classroom; however, he finds that it often disrupts the flow of a lecture and significantly reduces class time to stop and play music samples. One solution that he imagines would be to have students listen to samples of significant songs between class periods; however, simple distribution of sets of MP3s is not a ideal solution, because he wants to give students context and background while they are listening to music. iWriter provides him with an ideal solution to his problem. In a single installer, he can provide students with a set of songs to listen to, along with supporting notes that discuss the artists and their historical significance. The MP3s for each unit can be listened to simply as a playlist, to review for music identification quizzes, or they can be accessed through the accompanying iPod notes, which serve as review and supplement to material discussed in class.

Students Using iWriter: Music Listening Guides

In order to simulate a language immersion environment, learners of German select, download, and listen to several German-language songs each week while walking across campus, commuting to work, or completing other mundane tasks. In order to aid listening comprehension, they must find the German lyrics online, learn the meanings of key words and phrases, and briefly research the artist and album. Rather than compiling this information as a separate assignment, students are now required to create an iWriter project for each of their songs. The foreign language song is the audio file, and the lyrics, vocabulary gloss, and artist and album information

constitute the text pages. By the semester's end, each student has a library of music listening guides, which can also be shared with other course members in keeping with the TEACH Act via a restricted-access site, such as an ANGEL course.

Students Using iWriter: Radio Plays

Radio plays are a popular audio genre in Germany and frequently figure in beginning and intermediate German-language curricula. After listening to several radio plays, third-semester learners of German are asked to perform their own radio play dramatization of a German fairy tale. In order to make their radio play more accessible to classmates and other language learners, the students are required to create an iWriter project in which the dramatization (including the spoken word, music, and special effects) is the audio file and a script of the play and a vocabulary gloss are the text pages.

Instructors Using iWriter: Supporting Listening Comprehension

To support listening comprehension, particularly in foreign language courses, any audio files (newscasts, podcasts, music, or audiobooks) may be supplemented by iWriter text pages that prompt the student to more closely analyze the audio segment. This layering of different modalities allows students to simultaneously listen while viewing any of the following (in either the native or foreign language): 1) a "map," or outline, of the audio segment, 2) attention-directing cues, or 3) listening comprehension questions. Beyond foreign language education, listening comprehension support may be useful when analyzing spoken audio even in one's native language, e.g., historical or political speeches, news media, advertising, or literary readings (poetry or prose).

References and Additional Resources

Summary of the TEACH Act:

<http://www.utsystem.edu/OGC/IntellectualProperty/teachact.htm>

Apple.com's site on iPods in the Classroom:

<http://images.apple.com/education/ipod/>

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