Development of Digital Contents for Multimedia Enhanced English Learning

マルチメディアで高められた英語学習のためのデジタルコンテンツの開発について

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Abstract

The advent of digital multimedia devices has presented language educators with the opportunity to create effective yet interesting learning experiences. A digital learning program was developed to strengthen the English language abilities of students at KJC. This paper focuses on the development of a digital learning program that has the potential to entice students with trendy, captivating portable devices thereby fostering independent "*Anytime, Anywhere*" learning unattached to the constraints of time or place.

Keywords: Multimedia, English learning, Podcast, Content development

Introduction

The birth of Information Communication Technology (ICT) has ushered a new era in the world of language learning. The benefits of a computer-assisted language learning (CALL) system in language learning have been considerably reported. Gonzalez-Lloret[1] designed a task-based CALL to promote interaction. She justified the rationale of creating network-based activities by stating that these simulations offer access to other environments that translates into language input and tasks for second language students. Timmis and co-authors[2] published a paper on the online learning experiences of students from various disciplines. They presented a number of reasons why educators choose to utilize a virtual learning environment (VLE).

R. Purushotma[3] discussed the impact of simulation computer games like "*The Sims*" in language learning. "*The Sims*" is a simulation of everyday activities of one or more virtual people. He argued that a lot of the same content in this game could be found in an introductory language textbook. He stated that edutainment software could very well entice adolescent language learners.

The advancement of mobile technology has created vast opportunities for language learning in informal settings. Luckin, et.al.[4] discussed the importance of learning context focusing on the educational application of mobile technologies. Scanlon, et.al.[5] explored the prospects of the utilization of mobile technologies in an informal science setting.

An editorial on *Portable* Learning by A. Jones[6] reported a considerable interest in how mobile devices can support learning in various contexts.

Considering the vast potential of portable devices as tools for learning, a digital learning program was conceived to supplement the current online learning environment at Kiryu Junior College.

The aim of this program is to build an environment where English language learners at KJC can access multimedia contents on their PC through the internet or download these to their portable multimedia devices such as the iPod, mp3 player, or mobile phone. Thus language learning can be reinforced in both formal and informal settings. This program has the potential to entice students with trendy, captivating portable devices thereby fostering independent "*Anytime, Anywhere*" learning unattached to the constraints of time or place.

The Development Process

A *podcast* is a web-based audio broadcast using RSS which stands for "Rich Site Summary" or "Really Simple Syndication". This technology allows subscribers to

receive updated information without having to go through the tedious process of accessing the website and checking for new information. Since mp3 audio files can be streamed via the PC or downloaded to the iPod or any other portable media, a podcast-structured web site was considered appropriate to meet the objectives of this program.

1. Terminology - Word selection

Current words in the fields of Health and Business were chosen from online sources. Time magazine's August blog [7] on health and medicine, the Daily Rx, provided an excellent source of current health and medical terminology. Business words were extracted from the national news (August 12 to 31) presented by the Daily Yomiuri Online [8] website.

The articles on health and medicine comprised a total of 7,314 words, while that of business had a total of 3,263 words. A text analysis tool was utilized to scan these articles and calculate the frequencies of words and phrases. Figure 1 shows the reported results after a scan of the articles was completed. The results were filtered for articles, prepositions, conjunctions, pronouns, verbs, and other common words, that fall out of the context of health and medicine. The remaining words were then selected for audio recording. The same process was applied to the collection of business articles.

2. Content development

Words, selected from the articles on health and business, were recorded using a digital recording and editing software. The recorded audio files were checked for quality and clearness. These were initially saved as *wav* files and later converted into mp3 audio files using an *mp3* encoder. Figure 2 shows a screenshot of the recording and editing software.

3. Web development

With usability as the main concern, a storyboard of the web page which will serve as the platform for this digital learning program was made. Necessary graphics such as the site logo and link buttons were created using a graphic design software. The site was created using HTML and cascading style sheets (CSS).

The most important element is the creation of the RSS feed which is the vehicle for our podcast. XML coding was made to create the RSS feeds.

The HTML, XML, image and audio files were then

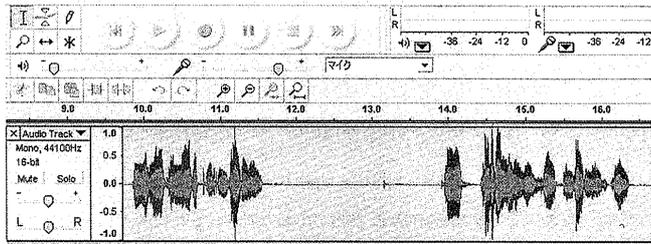Fig.1 Text analysis results

Fig.2 A screenshot of the recording and editing software.

Fig.3 A screenshot of the completed web site.
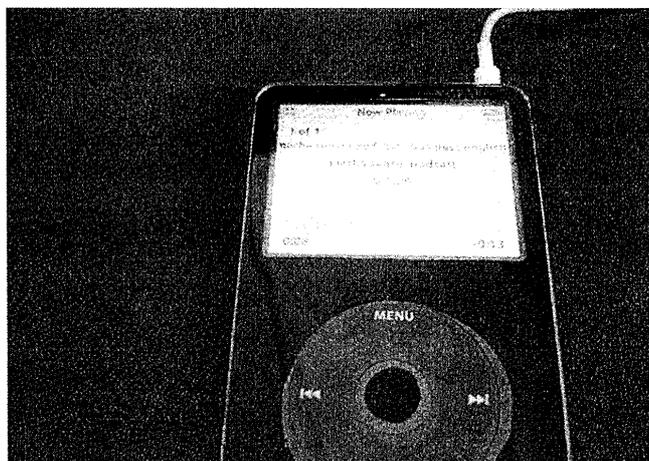

Fig.4 Contents accessed via iTunes.

Fig.5 Contents accessed via iPod.

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uploaded to a server. Figure 3 shows a screenshot of the completed web site. The accessibility of the digital learning contents via the PC, either using an Internet browser or through RSS readers, such as *iTunes* and *iPodder*, was checked. Finally, the digital learning contents were downloaded to a portable media device. The audio contents were then checked for clarity. Figures 4 and 5 show the contents accessed via *iTunes* and *iPod* respectively.

Conclusions

The technological revolution has created opportunities for educators to create effective and entertaining learning programs in both, formal and informal settings. However, compared to the design and preparation of traditional language learning activities, the design, preparation, and development of a web-based learning environment can be an enormous challenge to educators. The development of web-based digital learning programs is both a time- and resource-demanding endeavor. It also requires a working knowledge of audio file preparation for the web, and html / xml coding, unless a web-content development team is available.

In order to be an effective learning tool, any web-based or multimedia enhanced learning program should be based on sound second-language acquisition principles (SLA), and its effectiveness measured and evaluated.

The effectiveness of the learning program presented here need to be assessed fully regarding its effectiveness as a tool to foster language learning in both formal and informal settings in future work.

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マルチメディアで高められた英語学習のためのデジタルコンテンツの開発について

ヘルチェル・タデユース・マチャコン

要　約

デジタルラーニングイニシアティブ（教育ポッドキャスト）は学生のため，どこでも，いつでも勉強できる環境をつくるプロジェクトである．本研究は英語学習を補強するためのマルチメディアウェッブコンテンツ，特に英語ポッドキャスティングサイトコンテンツの開発を中心として記述した．

キーワード：マルチメディア，英語学習，ポッドキャスト，コンテンツ開発

マルチメディアで高められた英語学習のためのデジタルコンテンツの開発について