

Pediaphon - a Speech Interface to the free Wikipedia Encyclopedia

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The ubiquitous availability of mobile communication devices which are connected to the Internet, makes it possible to use small amounts of spare time for mobile learning (m-learning). Travel and latency times can be used for the so called microlearning. The term 'microlearning' describes a new e-learning paradigm with small or very small and short learning units. Learning material can be based on web logs (blogs) and social bookmarking. The main reasons which limit the usage of m-Learning services for the end-user are usability problems, mainly the limited screen size and input facilities of highly mobile devices like smartphones and PDAs.



Figure 1: Pediaphon audio interface

As an alternative to display large text documents on very small displays, audio based learning material can be a solution for hand held devices. The usage of audio based learning material in distance education is state of the art since the seventies. Nevertheless the production of audio learning material is expensive and time-consuming. As an alternative approach, automatically generated audio material can replace time-consuming audio reproduction. Despite the fact that the quality of text-to-speech generation is not perfect for m- and e-learning purposes, it is still usable for rapid prototyping of learning material. Especially to generate an audio representation of a text, dynamically text-to-speech conversion is the only solution. The growing amount of high quality articles available via the online encyclopedia Wikipedia [1] is very suitable as dynamic content for microlearning purposes. 'Pediaphon' is a web based service which generates audio representations of Wikipedia articles dynamically. The tool is usable on- and off-line, as web based service to listen the articles directly in the web browser as well as to download MP3 files for later use in mobile devices like MP3-players and mobile phones. The realization of 'Pediaphon' combines different techniques like text to speech audio generation [3][4], on the fly MP3 compression, Meta file generation for Winamp and Windows media player, Podcast generation, and Pseudo streaming (progressive download).

[1] <http://en.wikipedia.org>

[2] http://prt-i61.fernuni-hagen.de/~bischoff/radiopedia/index_en.html

[3] <http://tcts.fpms.ac.be/synthesis/mbrola.html>

[4] <http://www.ikp.uni-bonn.de/dt/forsch/phonetik/hadifix/HADIFIXforMBROLA.html>

[5] A.Bischoff: Podcast based m-Learning with Pediaphon - A Web based Text-to-Speech Interface for the free Wikipedia Encyclopedia, Virtual University 2006, Bratislava 2006