PODCASTS – A WORLDWIDE STANDARD IN E-LEARNING

Dieter Fritsch

Institute for Photogrammetry, Universitaet Stuttgart, Geschwister-Scholl-Str. 24D, D-70174 Stuttgart
dieter.fritsch@ifp.uni-stuttgart.de

Commission VI, WG VI/1+2

KEY WORDS: Mobile devices, computer-assisted teaching, E-Learning, Podcasts, Web 2.0

EXTENDED ABSTRACT:

Internet technologies fascinate people of all age groups. The three buzzwords of everyday life are "always on, anywhere and anyplace". Mobile devices become more and more powerful – they allow for learning-with-fun, creativity anytime at anyplace, and public understanding of complex issues. Within the next five years we will use mobile devices with built-in Inertial Navigation sensors and general GNSS receivers (compatible with GPS, Galileo, Glonass, and Baidou). Moreover, those devices will offer 1TB storage capacity on-board, HD photography and HD video recording, allow for communication speeds of up to 1 GBit/sec using LAN/WLAN/WiFi, and have in service additional sensors, such as temperature, air pressure, pedometer, to name just a few. The devices will easily communicate (wireless) with large HD displays, and are therefore excellent tools for students of all education systems.

Learning has become and will become more pleasant as it was before. One may argue about the consequences of this unlimited use of mobile devices. However, this discussion will not lead to any useful outcome. As a matter of fact, most people will use mobile devices instead of desktop and notebook computers, especially the young generation. There are public opinions about the size of content currently teached in primary, secondary and higher education – it seems that the content offered the last 20-30 years is much too less nowadays and in future. We have to double, or may be, even to triple the content! How will we perform this mammoth task? The answer seems to be simple: use the most recent technology with all its pleasant gadgets and apps.

When Apple introduced the first iPod generation (2002) nobody could foresee the story of success of this mobile device. Today, close to 200 Million devices have been sold – the iTunes (Music) Store offers digital media content of all kind: music (MP3 and other formats), audio podcasts, video podcasts, TV series, movies, and e-Learning content (through the iTunes U extension). Just recently, the iPhone 3rd generation has been announced, allowing for faster Internet access, HD photography, video capability, and other services. The app store offers more than 15.000 gadgets for download to make the iPhone or iPod Touch even more pleasant and powerful. The Apple TV allows for an easy link with the home theater TV, thus the iTunes Store comes to the couch when relaxing from a hard working day. Today, we find thousands of videos in the Apple podcast format (also in HD). Lesson learned: A computer manufacturer has become a world-wide leading institution for hardware, software and content!

Using the hype around iPod, iPhone and other mobile devices, learning content has to be offered in the same style and format as TV series, movies, YouTube videos, and others. Therefore, video podcasts (in short: *vodcasts*) seem to be a de facto standard already. Many Higher Education (High Ed) institutions offer today vodcasts for their students. Starting the Apple iTunes U extension in USA (2006) it swapped to Europe 2008 and is also available in Germany from Spring this year. This environment is Apple's answer to extend business and services to the 3L community. Unlike radio or streaming content via the Web, vodcasts are not real-time. Vodcast material is pre-recorded and the users can check out the material on-line and off-line. Certain vodcasts can even be live and interactive – dozens of podcasts enthusiasts can be on at once, with the host being able to control the audience in the same way a radio host can.

The Institute for Photogrammetry (ifp), Universitaet Stuttgart, started October 2006 to record teaching courses (and exercises) in Signal Processing, Geographical Information Systems, and Statistical Inference in vodcast formats. It was decided not to use a blackboard anymore, but a Tablet PC with a special recording SW to allow for annotations of complex issues (formulas, sketches, etc.) and vodcast creation right after the lecture. The lessons learned, by the students and the teacher, were very positive, and therefore it was decided (Feb. 2007) to offer all courses of ifp in vodcast formats. Besides the digital material for every special course new content is created. Therefore, we offer on the Web per lecture/exercise pdf notes (the TabletPC handwritten notes) and three different vodcast resolutions (QVGA 320x240, 480x320 and VGA 640x480). The students evaluate every course (lecture, exercise, lab work) by special assessment forms (towards the end of the term) just to indicate their expectation and satisfaction. On the other hand, the success of podcasting geospatial content of Universitaet Stuttgart has led to better prepared students in exams, what means, more complex questions are answered in a correct way. Moreover, off-campus and foreign students have access to the vodcasts as well and can see the ifp performance in research and teaching. In total, an overall assessment concludes with a very positive experience. In future, we will try to offer much more content in our lectures, exercises and lab work just to prove, whether it may be doubled or not.

The vision for the future is as follows: many vodcasts of all kind, especially for High Ed, are offered on the Web. The worldwide student community browses the Web and finds out the most brilliant vodcasts, according to their scientific content and pedagogical style. They rank these vodcasts just to give an indication about the quality and usability. Thus, it may happen easily, that preparations in GIS are made using database vodcasts of the Computer Science Dept. at MIT, visualization vodcasts of Univ. Stuttgart, analysis vodcasts of Tongji Univ. Shanghai, and data structure vodcasts of TU Berlin. Student learning in High Ed becomes really international! Highly ranked vodcasts hide some potential for future business models in Life Long Learning (3L), which will be

developed parallel to the more and more increasing vodcast offer.

REFERENCES:

Balz, T., Fritsch, D. (2008): High-Performance SAR Simulation on Retail Video Gaming Consoles for Education and Training Purposes. Int. Arch. Photogrammetry & Remote Sensing (IAPRS), B6, pp. 213-219.
http://www.ifp.uni-stuttgart.de/publications/2008/balz_fritsch_beijing2008.pdf

Fritsch, D. (2007): Podcasting Photogrammetry – A Contribution to Life-Long Learning. In: Photogrammetric Week '07, (Ed. D. Fritsch), Wichmann, Heidelberg, pp. 335-344
http://www.ifp.uni-stuttgart.de/publications/phowo07/380Fritsch.pdf

Murray, C., Sloan, J. (2007): iPodagogy – Using iPods and Video Podcasting for Learning. Report Dept. of Education, Victoria, Australia, 73 p.

Sharples, M. (2006): Portable and Mobile Educational Technology Research. University of Birmingham.
http://www.becta.org.uk/