Ebooks and mobile devices in education

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Abstract

Ebooks and mobile devices have quickly grown in popularity. E-books become mainstream and percentage of study materials available as ebooks is growing very rapidly. This paper examines how ebooks and mobile devices are being adopted by students. Results of research show the current use of electronic textbooks and mobile devices in full-time and distance study. The research was conducted using a questionnaire method. This paper provides an overview of the most popular ebook technologies and the technology used at The University of Ostrava. Furthermore, the author of the paper deals with different types of authoring tools for creating ebook, their advantages and disadvantages. This paper shows possible ways of creating and distributing electronic learning support for full-time and distance study.

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Peer-review under responsibility of Academic World Research and Education Center.

Keywords: Authoring tool, distance learning, ebook, mobile device;

1. Introduction

Mobile learning is a new concept. It comes from the possibilities opened up by portable, lightweight devices that are sometimes small enough to fit in a pocket or in the palm of one’s hand. Mobile learning is an emerging, and rapidly expanding field of educational research and practice across schools, college and universities as well as in the workplace (Kumar, Jamatia, Aggarwal & Kannan, 2011; Kukulska & Traxler, 2005). Mobile devices are currently the most commonly used for communication or reading textbooks. The increasing power of mobile devices also allows you to use multimedia materials. Tablets can serve not only to view teaching materials. Students can interact

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with your tablet, draw diagrams, take notes, handle homework, watch video lectures etc. The following chart shows ways to use mobile devices for respondents.

Tablets and reader offers new possibilities in the study. Students may have better access to learning materials, they can use text and multimedia or they can study anywhere. In the reader can be stored large quantities of teaching materials. Tablets may serve not only to the absorption or reading material, but such communication (Kumar, Jamatia, Aggarwal & Kannan, 2011).

2. Introduction

In 2004, 2013 and 2014 there was performed a research among students of bachelor’s degree study program Applied Computer Science. Its objective was mainly getting of information about usage of mobile information and communication technologies. In 2013 the survey involved 113 students of bachelor’s degree study program Applied Computer Science. It has 66 full-time students and 47 distance students. In 2004 the survey involved 63 students. We used a questionnaire (Fojtik & Habiballa, 2005; Prucha, 1995). In 2014, participated in the study 56 full-time students and 42 distance students. We used questionnaire and interview. The aim was to determine students’ interest in e-books and mobile training application.

Fig. 1. The use of mobile devices in the education

Students enjoy the most frequently smartphones running Android 78 %. Other systems are iOS (12 %), MS Windows Phone (8 %), Blackberry (1%), other systems (1%). There are currently very popular tablets. Tablets are a new category of mobile devices. More and more students use the tablets in the education. Respondents most frequently used Android tablets (76 %) and iPad (iOS 24 %). The number of students that plans to buy some of the mobile devices proves the increasing significance of mobile tools. 37% of respondents intend to use these devices in learning. Most of them want to buy notebook and the same number will buy tablet.
3. Ebooks and mobile applications for education

Electronic books are becoming increasingly popular. Electronic books are becoming increasingly popular. Their advantages include:
- Easier distribution and purchase
- Simple backup and storage
- The ability to adjust font size
- Add text to multimedia
- Read on different devices
- The ability to have a large number of devices in electronic books

Currently, the most exploited formats are pdf, epub or mobi. Epub and mobi formats are suitable for tablet or e-reader.

Because a large group of students and teachers using a mobile device, we develop mobile applications for learning and teaching organization. The survey found that 76% of respondents interested in mobile applications that would allow them access to university information system and learning materials. The first application eOSU is a library of teaching materials. This application may include materials in pdf or HTML 5 better. Materials may also include an animation, audio and video sequences. Creating teaching materials is divided into two phases. In the first phase, the teacher writes a text, or he prepares animations, videos, etc. In the second phase, the programmer converts the text into final form.

The second application OSU rovrh (OSU timetable) allows students to work with their timetable. The application shows the schedule, syllabus subjects, location in the classrooms etc. The third application OUS Info contains information about the fields of study at the University of Ostrava. All applications are created for the Android and iOS. Because the operating system Windows Phone is not too extended, an access to learning materials and information about study using only a web browser.

We use MediaSite for recording lectures. Video lesson consists of two windows. The first window shows the presentation, the second window shows teacher. Both windows are synchronized. Survey results from 2014 show that 67% of distance students have used video lectures, but only 29% of full-time students.

We use for distance as well as full-time students LMS Moodle. Students can access the LMS via a desktop computer or mobile device. They can use mobile devices web browser or mobile app Moodle Mobile. Currently, only 23% of respondents use the mobile application. A small number of users are often due to the fact that students do not know the mobile applications. The number of users incases.

Other possibilities are to prepare teaching materials in PDF format. This format does not allow for multimedia use and is not suitable for readers such as the Kindle.

The simple possibility of multimedia textbooks offers application iBooks Author.

Advantages:
- Easy creation of multimedia materials
- Easy integration into an application iBooks
- The application is free of charge

Disadvantages:
- Can only be used on iOS or Mac OS X, not for OS Android
- Non-standard format

4. Conclusion

The importance of mobile devices is increasingly growing. Currently, sales of mobile computers surpassed sales of desktop computers. Rapid development of mobile technologies is present not only in technical side but also in educational side. Besides the notion of e-learning it is also introducing the notion of m-learning, which emphasizes usage of mobile technological means also in the educational process. Educating institutes should adapt their methods of teaching for mobile technologies, which will bring students better choices of learning means.
The survey found that many students are interested in mobile applications and e-books. It is possible to use existing applications and libraries (such as iTunes) or create our own that will better suit the university.

References

Fojtik, R., Habiballa, H. (2005) Mobile technologies and distance education. *Proceedings of E-Learning Conference.* Gent, 2005. s. 27-32. ISBN 90-70963-92-2

Kukulska-Hulme, A., Traxler, J. (2005). *Mobile Learning*, Routlende, ISBN 0-415-35739-X

Kumar, S., Jamatia, B., Aggarwal, A. K. and Kannan, S. (2011) Mobile Device Intervention for Student Support Services in Distance Education Context – FRAME Model Perspective, *European Journal of Open, Distance and E-Learning*, 2011 Volume II, ISSN 1027-5207, http://www.eurodl.org/?p=archives&year=2011&halfyear=2&article=447

Pachler, N., Cook, J. and Bachmair, B. (2010). *Mobile Learning*, Springer, e-ISBN 978-1-4419-0585-7

Prucha, J. (1995). *Pedagogicky vyzkum. Uvedeni do teorie a praxe*. Praha, Karolinum, ISBN 80-7184-132-3