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Mobile learning in higher education: A marketing course design project in Austria

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Abstract

The course concept introduced in this paper was implemented in 2011 in a university in Austria, and shows an approach for integrating mobile learning modules in higher education. The results of the course as revealed in the research show the advantages as well as the potential for improvement of the system and its use in higher education.
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1. Introduction

In some countries, the use of m-learning for students located in remote places is taken as an advantage for communication and for media content development. A variety of devices are used and m-learning solutions are offered by companies and universities. Implementing mobile services in education in the form of mobile learning modules is an innovative process at many levels of higher education (Dykes and Knight, 2012). E-learning developers and course instructors must make themselves aware of changing user preferences, technological issues, and the new tools available, in order to be able to determine how to benefit from them (Asabere and Enguah, 2007; Shafique et al., 2010). In the project described in this paper, we focus on mobile learning initiatives in Austria and describe the development of a course design, in which we incorporated mobile learning modules.

2. Mobile learning

The term 'mobile' refers to the possibility of activities taking place in multiple locations, across multiple times, and accessing content with various items of equipment such as smartphones or tablets (Keegan et al., 2006; Kurkela, 2011). The field of wireless technologies is developing exceedingly fast. Most of the developments contribute to the greater feasibility of mobile learning and to the richness of the courseware that can be developed for mobile learning. All of this has greatly facilitated the development of mobile learning and contributed to the richness and complexity of courseware on mobile devices (Keegan et al., 2006; Pachler, 2007, Sorensen, 2009).

Mobile learning is learning that is accomplished with the use of small, portable computing devices. Mobile learning can be used to enhance the overall learning experience of students and teachers. Through mobile support,

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learners' throughput rates might be improved and the quality of the learning experience enhanced. The European Commission has funded mobile learning projects with the aim of supporting vocational education and training using mobile devices for the delivery of learning content. One project developed, among other things, courses for students using PDAs and mobile phones, while another one developed learning materials for the new generation of devices that offer email, web-browsing capabilities, streaming audio and video and multimedia messaging. On the whole, learners were positive about the user friendliness of mobile devices and more than 50% of all participants in the projects agreed that this kind of mobile learning is enjoyable for learners. Nevertheless, only 45% of all the participants agreed that mobile learning increases the quality of e-Learning. Mainly due to technical issues, the expectations of the participants were not always met (Kukulsa-Hulme et al., 2009; Rao et al., 2010; Hylen, 2012, Sarrab et al., 2012). To avoid difficulties, for the students who participated in the two projects mentioned, we decided to use tablets instead of mobile phones for the mobile learning module (MLM) course design.

In Austria, (as well as in the United Kingdom, Slovenia, Italy, and Croatia) the 'Mobile Game Based Learning' project was established in 2005 and funded by the European Community for a three year period. 'The project's main aim is to use the mobile phone to implement games bridging the real and virtual world. The project idea is based on the fact that, today, mobile devices are getting more and more diffused. Particular mobile phones can represent what young adults, with different levels of education and culture, have in common. The target audience is younger people aged 16-24, people with high interest in mobile technologies and in lifelong learning, and their teachers. A special focus is placed on the implementation of mechanisms known from marketing and psychology to trigger an emotional learning process' (Dias et al., 2008, 54).

The Collage Project (2006-2008) supported eLearning initiatives of the European Commission (in addition to Austria, Denmark, Greece, Spain, Sweden, and the United Kingdom contributed). 'This project brings to secondary school students and their teachers, a mobile learning platform for context-dependent games, which eventuates in fun, interdisciplinary work, collaboration, and challenges beyond the four walls and it creates new learning opportunities' (Dias et al., 2008, 54).

The ESMOS project (2005-2007) focused on university students and included six universities from the UK, Italy, Austria, Lithuania, Poland, and Bulgaria. 'The aim of the ESMOS project was to improve and enhance the quality of student's mobility experiences by providing them with a high level online support. A new methodology has been developed for international mobility student support, using a variety of technologies and online tools, such as blogs, SMS, MMS, and virtual classroom applications along with the traditional virtual learning environment. The methodology has been elaborated to become a model for the virtual support of mobility students' (Dias et al., 2008, 55).

3. Mobile Learning Modules in Management Course Design: Case Study in Austria

According to Kukulsa-Hulme et al. (2009), technologies to support lifelong learning have to meet the following requirements: they have to be highly portable, individual, unobtrusive, available, adaptable, persistent, useful, and easy to use. In the project described in this paper, we tried to use mobile technologies to improve students' learning performance.

3.1. Course environment

The designed course is intended for Bachelor degree students from different faculties such as natural sciences, engineering, social sciences, and law of a university in Austria. To be able to attend the 'Introduction to Marketing (IM)' course there are no perquisites. In the last four semesters, the course was given as a lecture with only a few assignments that the students had to work on, and no student projects. The student performance was sufficient in that more than 76% of all the students attending the course had a BB or higher grade. Nevertheless, the performance for the 'Marketing Strategy (MS)' course, with success in the IM course as a prerequisite, was significantly unacceptable. Students had a basic knowledge about marketing topics when attending the 'Marketing Strategy' course, but they had no idea at all as to how to apply the knowledge generated. To overcome the difficulties with the

non-project related design of the IM course, the instructor decided to integrate mobile learning modules in education in a pilot IM course in the spring term of 2011. The audience for the marketing course IM was students from different university departments such as business administration, information technology, industrial engineering, tourism management, new media, and graphic design.

This interdisciplinary approach made it necessary to offer participating students information and communication structures sufficient for them to co-operate on course-related topics and receive information that was necessary to fulfill the requirements of the course.

3.2. Course content

The main focus of the IM course (14 weeks of 3 hours per week) was to provide an introduction to the basic concepts of marketing, and to provide an understanding for the marketing process as part of strategic planning. Marketing strategies such as market segmentation, product strategies, pricing, or competition approaches were explained. The elements of the marketing mix were to be examined as part of developing marketing strategies (see Table 1). Before the integration of the mobile modules, the course design focused on lectures, offline assignments, and readings as teaching methods. With the integration of mobile learning modules (MLM), the teaching methods primarily focused on lectures and MLM, supported by MLM-based field analysis and student and group projects. For the mobile learning modules, mobile devices such as tablets or smartphones, were used to achieve the pre-determined learning goals. In the 'Introduction to Marketing' course that we designed, students were given a tablet for the whole course to allow them to work on their mobile learning modules: this included working on their individual assignments as well as on their group projects. A sample group project with regard to which students had to work together using mobile devices to support their work, is shown in Table 2.

Table 1. Course content and teaching methods before and after the integration of mobile learning modules

Week	Content	Teaching method
BEFORE mobile learning module integration		
1-2	Introduction	Lecture
3-4	Basic concepts	Lecture
5	Advanced concepts	Lecture, assignments
6-8	Market segmentation	Lecture, reading
9-10	Pricing and product strategies	Lecture
11-14	Selected topics	Lecture
AFTER mobile learning module (MLM) integration		
1	Introduction	lecture
2-3	Basic concepts	Lecture, MLM
4-7	How marketing works every day Marketing strategies: Basic strategies Hybrid ones Implementation of marketing strategies	Lecture, MLM
6-9	Product launch/Customer preference analysis	Lecture, MLM, student project
10	Competitive analysis	Lecture, MLM, student project
11-12	Applications	Field analysis, MLM, student project
13	Social Media Marketing	Group project, MLM
14	Selected topics	

Student project: Social Media Marketing

PART	MAIN QUESTION?	WHAT TO DO?
1	Analyze the social media available. Which of them could companies use for marketing purpose?	Analyze primary and secondary sources
2	Search for blogs on social media marketing. Sample blog: XXXXXXXXXXXXXX.	Use your tablet Follow them for new ideas on social media marketing. Share new blog posts within your group and with other groups in your course. Use the course circles on Google+ for sharing
3	Analyze social media marketing activities of companies operating in the following industries: ᴇ telecommunications ᴇ financial services ᴇ Fast moving consumer goods.	Use your tablet Choose 3 companies from each industry, follow them on social media (for 5 weeks) and find out their social media marketing strategies by analyzing their activities on SMM

Table 2. Student project including MLM

For the regular course stream, the mobile learning modules were mainly used for working on the following topics: How everyday marketing works; developing and implementing marketing strategies; customer analysis; competitive analysis. For the student projects, tablets were used to encourage students to actively participate with the MLM, such as by searching for readings on the general student project topic; for communicating with other group members; for preparing project presentations and documentation. Students had to analyze the social media marketing activities of companies in three different industries - telecommunications, financial services and fast moving consumer goods - following their activities on social media, and analyzing their underlying social media marketing strategies. As a result of their research, they had to prepare a presentation showing a comparison of the SMM behaviour of companies in the same industry, and a comparison of different industries that they analyzed, finding out common strategies in terms of social media marketing and industry-relevant ones. For the effective search of project-related literature and sources, the students were provided with a basic introduction to scientific work, literature research, and Internet technologies. For communicating with one another in the group, students used Google+ as a communication tool. At the beginning of the course, Google+ was introduced to students and they started a learning by doing process on how to use Google+ effectively for their project management. Google+ has the potential to improve students' collaboration through circles, conduct research for projects with sparks, which is a customized way of searching and sharing that follows an interest-based approach, improve the student-instructor relationship by using this kind of social media to get in touch with one another, and support blended learning using the hangout functionality.

3.3. Discussion

The instructor created and frequently used a marketing circle on Google+ for communicating with all the students, and sub-circles for all the student groups working on projects; Hangouts were used during the online office hours of the instructor, explaining assignments, talking about projects and group work, or communicating with students completing their projects, who were facing problems, or who needed some kind of support. The instructor used sparks to share results with the marketing circle or any sub-circle of selected students. An evaluation at the end of the course, where questionnaires were used, showed that 92% of all the students worked with their tablets on social media networks, mainly Google+ and Facebook and used them for group internal communication. 67% of them had not used social media networks before for communicating on course related issues, mainly because, without the course tablets, they were not online frequently, and preferred email communication. Huddles were used by 6 students groups (7 students each) while 4 groups did not use huddles. Huddle offers group chat possibilities.

Huddle is part of the 'mobile' feature, offering services using a mobile phone, including other services as well, such as instant upload. Two groups (mainly consisting of management students) found it useful using the Huddles feature for group communication. Two groups (mainly students from design and law programmes) tried to use huddles, but stopped doing so in the main phase of their group project, because, with this group, chat possibility structured work on a group project is not possible (Erkollar and Oberer, 2011). All students attending the marketing course used hangouts as an instant videoconferencing tool with their marketing circles, or with selected contacts in circles. Hangouts offer video conferencing with multiple users; small groups can interact on video. 89% of all the students plan to use hangouts for upcoming courses as well. 6% already used hangouts for the courses that they attended in 2011. In comparison to the course results from previous years, students worked interactively, worked on different systems online, and tried to apply them in their projects.

4. Conclusions

Almost any mobile service can be adopted for educational use. It requires some flexibility, mainly on the part of the instructors, to use mobile learning modules in education and to motivate students to use these modules, while not focusing on the restrictions, limitations, and additional workload, but rather on the benefits that these components could offer for use in education. The results of the project we conducted show that using mobile learning modules in course design could encourage students to participate, could empower them and could lead to better results in terms of students' projects because of the higher percentage of IT integration in education and learning. The marketing course described in this paper is a prerequisite for several marketing courses which are taught in higher semesters, such as marketing strategy or geographic marketing. Student performance in these courses will show how effective and sustainable students' education on general marketing topics in the course we described was, and how sustainable the integration of mobile learning modules in marketing education at a university is.

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