BSUL: Basic Support for ubiquitous Learning

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Abstract. In this interactive event we would like to present the BSUL (Basic Support for Ubiquitous Learning) environment for supporting classroom activities with mobile computing devices. We have identified different routine activities that can be supported with web based IT in order to improve the teaching/learning experience and promote the cooperative and constructive creation of knowledge. These activities include: material distribution, students' response taking, report submission and formation of learning groups. The teacher logins through a laptop computer and the students through a PDA (personal digital assistant) for accessing the environment web site and making use of the proposed tools. As a usage example we will present a small survey with our response tool, and according to the participants answers separate the participants in groups for discussing about the "Heat Island Problem", a current global warming issue. We will ask our participants to fill in the conclusions of their discussion in our report submission tool, and present their results to the rest of the audience. If possible, we will also like to ask our participants to collect information on the topic from outside the conference room, such as voice and/or video recordings from other people.

Keywords: ubiquitous learning, learner modeling, support for classroom activities.

INTRODUCTION

Nowadays, with the rapid development of more useful mobile computing devices with wireless Internet access (Sharples, 2003), it is not adventurous to say that during the next years it will be common for students to bring one of these devices into the classroom, as an embedded tool that supports his/her learning process, the same way a pencil, a ruler or a calculator does (Ogata, 2004). In our ongoing research we have been involved in the creation of a classroom with embedded mobile technologies and web–based tools for supporting different tasks in this classroom. We would like to discover which learning patterns are the best scenarios to give ubiquitous computing support and the proper method to promote academic activities, both inside the classroom and outside the classroom during field tasks. For our purposes we implemented an ubiquitous learning environment called BSUL, which supports different redundant activities like attendance taking, material distribution, students' response taking, report submission, formation of learning groups according to the learner models, data gathering, etc.

According to Hoppe (2003), there are some goals that must be achieved to successfully support the teaching/learning process inside the classroom with mobile devices:

- All users need to have access to knowledge resources in many formats and from diverse information sources;
- Ensure that the developed technology do not interfere with the natural flow of the learning process, but facilitates and promotes it;
- The system should not be the basis of the educational scenario, but only a background tool, similar to the common use of paper and pencil;
- Exploit the learning process digital results (notes, learning material, etc.) by replicating, distributing and reusing it.

Currently we are in the evaluation process of the usability and performance of our environment, and we would like to present one of our supported interaction pattern that involves the creation of learning groups, and promotes the discussion and collaborative creation and acquisition of knowledge on the topic of "Heat islands problem", a contemporary global warming issue. Some of our participants may be acquainted with the subject and can contribute with their own knowledge, while others may discover the causes, consequences and possible solutions for this serious concern.

INTERACTIVE EVENT

Objective

The main objective of this event from the participants' standpoint is to interactively take part of the research and development we are conducting, and from ours to obtain their comments and feedback. We hope hat by this means, both the participants and organizers could benefit from each other's ideas and experience.

Description

During the first part of the event, the participants will be given a PDA for the event purposes, then listen to a presentation about the environment, the means of interaction with it and the objectives of the event. Next, the participants will answer a small survey on the subject of "Heat Islands Problem", intended to gather information about the participants and create learning groups according to their answers and profile. Subsequently, one of the organizers will give a quick lecture on the same subject and the participants can download the electronic materials from the environment server into their mobile device. These materials include different resources from the Internet in Microsoft Word, Adobe Acrobat, and/or JPG image, file formats. Afterwards, the participants will discuss within their respective group and collect external information by interviewing other people outside the event place. The participants will submit a report with the results of the discussion, and one member of each group should present the results to the rest of the audience. (Fig. 1)
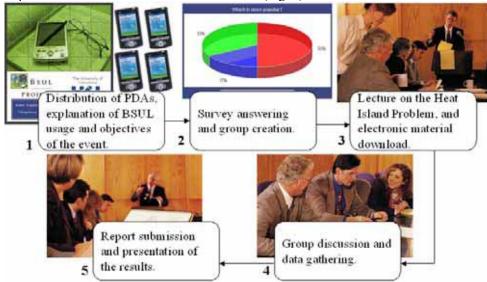

Fig. 1 Event activities

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