

MLE-Moodle in museum education and in a biology exam held in a field conditions

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ABSTRACT

This is a case study on the implementation of MLE-Moodle in museum education and in a biology exam conducted in field conditions. MLE-Moodle is an open-source GPL-licensed ready to use mobile Learning system designed for mobile phones. It is a plug-in for the open-source learning management system Moodle. MLE-Moodle is a new approach to mobile learning. It connects the mobile learning environment directly to the traditional web based learning environment. The pupils participating in the experiments were from 2nd - 5th grades and the biology class group was 8th graders; they welcomed mobile learning fairly well.

Author Keywords

Mobile Moodle, museum education, biology exam in a wood

MLE-Moodle is an open-source GPL-licensed ready to use mobile Learning system designed for mobile phones. It is a plug-in for the open-source learning management system Moodle, which is based on the social constructionist framework of learning. With MLE-Moodle it is possible to enhance an eLearning system to mobile Learning. Students can learn either with a mobile phone (mLearning) or with a PC /Notebook (eLearning). On a mobile phone student can either use the phone's own mobile browser to access MLE-Moodle or he/she can use a special **mobile phone application** which was designed for mobile phone learning (called MLE phone client). MLE-Moodle isn't merely a channel for collecting data to Moodle, but provides a means to use some of the Moodle's core activities (such as Quizzes, Lessons, Assignments, Surveys and Choices and Forums) with the mobile client.

MLE-Moodle could be an important step towards a wide use of mobile learning. If a teacher is familiar with Moodle, there isn't a very big leap to using MLE-Moodle. For students familiar with Moodle, MLE-Moodle is a natural way to use Moodle mobile way with their own mobile phones.

OUR MOODLE SERVER WITH MLE-SUPPORT

The Moodle server version used was 1.99 and MLE-Moodle was the version 0.8.8.3. Without the Gateway Server the mobile Client makes a direct HTTP-access to Moodle. I installed an own Gateway Server to the same server where our Moodle was, and it worked well. A Message Server informs the user about new messages. The advantage of the Messaging-Server is that you are informed about new messages even if you do not make a request to Moodle. Otherwise the users are informed about new messages only if they access the Moodle server. To use a Message-Server is not necessary, but here a public server msm.mo2i.com was used.

MLE-Moodle link appears in Moodle's front page, as well as a link from which MLE-Moodle Java-application can be loaded to the phone. When this software is loaded from that link, automatically our Moodle-server's web address, Gateway Server's address and other settings are transferred into the settings of Java-application. Therefore the students can begin to use MLE-Moodle simply by writing their username and password.

CASE MUSEUM EDUCATION

The first test of MLE-Moodle was carried out at Kuokkala museum road. The pupils were 2nd - 5th graders from the nearby Nurmi village school. We used the phone's (Nokia 6220 Classics) own mobile browser to access MLE-Moodle. Moodle's discussion forum was used to implement the museum education course, so that each question formed one forum, and each team was to post there one post with a photo and a text. Furthermore, we added some introductory text to the questions that gave generic information about the museum objects, making it similar to a virtual museum guide.

“Take a picture of one strange object, invent a name for it and describe the purpose of the object”. The answer from Team Hippo was figure1 with a text that read: “A machine to make grated cheese. Put the cheese inside from the top, turn the lever, and out comes grated cheese”. “The smithy of K. A. Koskinen _was working in this place *until* in 1910. What may have been manufactured in this smithy?” In figure 2 is the answer of the team: “soft ice cream”.



Figure 1.



Figure 2.



Figure 3.

CASE BIOLOGY EXAM IN A WOOD

In this second experiment we used MLE-Moodle Java-application with Nokia 6700 slide phones. Pupils in the experiment were an 8th grade biology class group (18 students). Tasks formed a part of the students' evaluation and were as follows: 1. Tree height: Measure the height of a tree, identify it and take a picture of it. 2. Tree species: Identify 6 different species of trees at close range, take pictures of them and send the pictures and the name of the tree to Moodle. You can find help in your phone's browser bookmarks under the name tree species or directly at <http://www.puuproffa.fi/arkisto/puulajit.php>

Deployment of the MLE-Moodle Java application was not a straightforward process. We had trouble finding a phone to which Java application could be installed and in which the application would support a camera phone and the GPS system. The installation problems we encountered were at least partly due to the security certificate. When the date of the phone calendar *was* changed to the year before the current date, the application could be successfully installed. However, once the appropriate phone was found and the application had been installed, an embarrassing problem emerged. When the camera view of the application was used for taking a picture, the picture came from a different point than you had targeted! When the latest version of its operating system was installed to the phone, the error was resolved. The time required for solving this technical problem was approximately two working weeks. It is clear, that an ordinary teacher is not ready to do this kind of beta- testing which requires plenty of trial and error work. Mobile learning technology is not yet “plug and play” reality. Furthermore, in open source products bugs are an issue. MLE-Moodle community fixed a mobile tag decoding bug for us rapidly. But if the community of an open source product is not very active, you are on our own. With commercial products one can always complain to the sellers.

Only 25 % of pupils were satisfied as to how the phones were working, but all felt that it was nice to use them. Pupils want to use mobile technology in their studies also in the future. Only few pupils preferred to have tasks on paper. There were no pupils that wished never to participate in this kind of experiments again and they found mobiles easy to use.

The future of the MLE-Moodle

The future of the MLE-Moodle is unclear. Will there ever be support for the newest Moodle 2? Hopefully a new community of developers will take the source code and begin to develop it. Another “threat” to consider is whether there will be need for light user interfaces anymore, or are the power and the screen size of the new mobile devices making them useless? In developing countries the need of light user interfaces is clear also in the future, as it is in Finland if the pupils' own mobile devices are used.

REFERENCES

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