Vija Vagale
Daugavpils Universitāte, Latvija

PERSONALIZATION OPPORTUNITIES IN THE MOODLE SYSTEM

Abstract
If we want to use the Internet services productively, it is important to understand, what users want and what do they need. Web site is ideal place, where is possible to gain information about user, his expectations, knowledge level and his thinking style. Collecting and summarizing information about user does system of personalization. More often information about user can be gained in two ways: person fills form itself, writing down information in his own profile; or software „tracks user", using Web site and by analyzing his activities, itself makes profile about user. Examples of systems, where are realised personalization functions: Amazon.com, eBay.com, iGoogle and many other education environments.
Education is very complicated process, that is why personalization in e-educations systems have big future, especially open source software, for example, Moodle. Each trainee can be characterized by his skills, knowledge and individual features. To gain positive results in this scope, when educating each user must be more individual, personalized educational system can be very useful. This system must be able to evaluate the initial level of knowledge of user, it must offer him missing information and make accounting of knowledge progress.
Key words: *personalization, e-learning, Moodle.*

Introduction

Nowadays, in the swift development century very important role plays the whole user gained knowledge. Learning Management Systems are among the most popular e-learning tools. Over the last few years, scientific research has made considerable progress in developing valuable resources currently unavailable in most Learning Management Systems, including solutions aimed at providing students with personalized support throughout the learning process, which is an essential requirement in continuing education. Observing and modelling the learner, and adapting their learning experience accordingly means opening up new technological and, above all, methodological perspectives in e-learning (Limongelli 2011: 49).

In the Latvian educational system nowadays great emphasis is putted to the using of e-learning environment to gain wholesome and qualitative obtaining of knowledge (Vagale 2009: 265). Latvian universities and schools helps to realise a lot of ESF projects projekti („Profesionālajā izglītībā iesaistīto vispārizglītojošo mācību priekšmetu pedagogu kompetences paaugstināšana", "Vispārējās izglītības pedagogu tālākizglītība"), where one of the exercises is organization of e-learning environment, making course content and qualifying teachers in this scope (VISC 2011).

The most popular distance learning systems are Tutor (http://www.atutor.ca), Moodle (http://moodle.org), Claroline (http://www.claroline.net), OLAT (http://www.olat.org) or Sakai (http://sakaiproject.org). They are equipped with hundreds of modules with specialized

functionalities dedicated to users and courses management, schedules preparation, etc. However distance learning system development is still required, making personalized e-learning environments which are able to adapt to every user individual features (Rauch 2007: 1).

Implementation

System personalization

Personalization is the process of tailoring pages to individual users' characteristics or preferences (SearchCRM 2011).

Personalization is assured, by adjusting datas and their visualization, under user parameters. Pesonalization is a instrument, which:

- satisfies users' requirement more effectively and appropriate than impersonal sites;
- provides faster and easier interaction between user and offered service;
- provides trade „one by one";
- increase users' satisfaction with services;
- increase possibility of repeated visits (Won 2002: 30); (Cammy 2011).

Personalization implies that the changes are based on implicit data. Information about client can be gained in three ways:

- Implicit – client completes form about him or gives required information.
- Explicit – system remembers clients' accomplished activities, analyzes and makes conclusions.
- Hybrid – information about user is gained, using implicit and explicit methods together.

If system obtains information about visitors of the Internet site, then site must guarantee about persons data protection. It is an international advocacy group formed to promote the development and use of responsible one-to-one marketing technology and practices on the World Wide Web (Business-INT 2011). Founding members include Pricewaterhouse Coopers, American Airlines, and DoubleClick. The consortium has established ethical information and privacy management objectives; these include, for example, the suggestion that enterprises should inform users about the information being gathered, and the purposes for which it is sought.

In the Web sites personalization is used in the:

- searching sites;
- social sites;
- e-commercial;
- e-learning.

Personalization examples: www.google.com (iGoogle), www.yahoo.com, www.youtobe.com, www.face.lv, www.facebook.com, www.one.lv, www.draugiem.lv, www.tumblr.com, www.twitter.com, www.amazon.com, www.ebay.com, draugiem.lv.

Moodle

Moodle is Object-Oriented Dynamic Learning Environment. It is an Open Source Course Management System (CMS), also known as a Learning Management System (LMS) or a Virtual Learning Environment (VLE). It has become very popular among educators around the world as a tool for creating online dynamic web sites for their students. Nowadays it is the most popular free e-learning environment that supports 75 languages (Vagale 2010: 293); (Moodle 2011).

Personalized access to user profiles

As it is in many systems, in the Moodle is organized users' policies and roles too, which provides different rights and possibilities which depends on users roles. In this system for ensuring users policy, uses also some users groups.

In the Moodle system each user have his own profile, where he is able to change information about himself. Each user can see just his course grades.

It is simple level personilization. Moodle system itselfs does not analyzes stundents knowledge level and does not offers required courses. System fixes stundents activities in the system, but they are not used further for the offering needed courses.

Personalized access to the course information

In the Moodle system teacher organizates and makes learning course. Each learning course in the „Parameters" it is possible to change course parameters, fill in course content, resources and activities, change course design, choosing from given design templates, add/remove course students and change stundent roles. It is the way how to realise course personilization opportunity.

Review over realised Moodle personlization projects
Moodle_LS System

Personalization is obtained by combining Moodle and the LS-Plan sequencing engine into a new system called Moodle_LS.

LS-Plan was fully integrated into Moodle through the definition of new modules and a new course format: as a result, users are offered this new service within Moodle itself with no

need for them to use a different environment. Support for teacher comes in the form of automated sequencing of the content delivered to the students (Limongelli 2009: 203).

Specific tools help the teacher use metadata to manage their learning material and provide automated sequencing of the course content for each student. Features added to Moodle include the Adaptive course format and the following modules:

- Teacher Assistant: this module enables teachers to associate LOs (Learning Objects) with the information required by the personalization engine. It is transparent to the user.
- Test Learning Styles: it provides users with a link to the Felder-Soloman test which determines the four values representing the student's learning styles. Once they have completed the test, students can use this module to feed the obtained results into the system (Limongelli 2011: 54).

This solution is still in the experimental stage, but the benefits of the proposed personalization have already been confirmed by a number of tests in the domain of Italian Neorealist Cinema.

Agent based algorithm

The system responsible for personalization of e-learning courses was implemented using Moodle Course Management System of the AGH University e-learning Platform.

Implementation of described software inside Moodle required creation of new functional modules focused on initial preparation of course structure and on personalization based on history of learner's education.

By combination of two approaches, i.e. agent-based and SCORM-based, new algorithm dedicated to learning content personalization. The personalization of learning content was implemented in form of agent-based algorithm as additional function of module responsible for SCORM content presentation (Rauch 2007: 4).

CICEI project - Conditionals

CICEI (Innovation Center for Information Society) have made a system, called Conditionals. In June 2009, CICEI presented their latest version of Conditionals, which are prepared to run on the current operative versions of MOODLE. I2FM team (Research and Innovation in Mathematical Training), took part in the presentation (Castello 2010: 277).

CICEI project

One line of research that CICEI (Innovation Center for Information Society) of ULPGC (University of Las Palmas de Gran Canaria) has been developing since 1997 is the design and implementation of online formative actions (Rubio 2010: 354).

To create personalized learning paths for each student, the I2FM team has developed a MOODLE patch and a MOODLE module which consists of personalized learning paths for each student, taking into consideration learning styles, prior knowledge, learning pace and student's actions. The first one allows that the different course elements are opened automatically to each student according to his learning pace, prior knowledge and/or actions in the course; this is achieved by allowing the setting of conditional activities. This patch also allows to automatically highlight those course elements to which the student has not yet accessed. And the developed module allows evaluating the learning styles of students, to classify the course activities as suitable for one or more learning styles and to show to students only suitable to their learning styles activities. By default, the module comes with CHAEA (Honey-Alonso Questionnaire on Learning Styles) defined but it allows to define new tests.

The developed MOODLE block allows consulting the estimated dedication time of participants in a course during any period. The estimated dedication time is calculated studying, in MOODLE's log, every click of the student during the established period.

Team has developed also a MOODLE block that allows send SMS (Short Message Service) to users from a MOODLE platform to communicate with students).

Conclusions

To sum up:

- Web sites personalization has big future, because this scope is still developing by many projects.
- Personalization is required for student to choose required course content, learning speed and learning activities. These functions are still not realized in the MOODLE system.
- MOODLE usage popularity increases and there are already realized projects in the MOODLE as personalized system usage in the learning process.
- Exactly MOODLE personalization is scope which must be developed and investigated in the future.

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