

## Using Moodle as On-line Survey Instrument in Medical Education

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### Abstract

One of the principal issues in any university community is the lack of communication between community categories – leadership, administration, teaching staff and students. Sometimes is important to know in a short time the opinion of one particular group, without investing a lot of resources and without being extremely formal. The aim of this study was to test if an open-source platform – Moodle – can be used for quick surveys inside the Faculty of Medicine, UMF “Iuliu Hațieganu” Cluj-Napoca community. For this, on existing Moodle platform was installed one specific survey instrument – a questionnaire module and a survey containing a real life issue to the students of Faculty of Medicine was launched. The researchers have focused on how the specific problems of a survey - preparing of the survey, the survey process and the analysis of the results can be handle in Moodle. The pilot survey was a success; the conclusion of the study was that Moodle can be used as on-line survey instrument for that community.

**Keywords:** Moodle; On-line survey; Medical students.

### Introduction

In the life of a Medical Faculty there are some times in which the leadership needs to find the opinion of the community regarding different problems for taking the decisions that fits better on a particular situation. [1] The problem is that the community consists of different categories: teaching staff, administrative staff, students, additional personnel and so on. Each category has its own size - usually very large – and its own hierarchy and characteristics. Those are some reasons why at times there is a lack of communication between the leadership of the Medical University and the community, especially with the student community, who are more and more involved in the process of decision-making about problems that regard them. At the Faculty of Medicine, UMF “Iuliu Hațieganu” previous experience clearly presents the need for a solution to allow the leadership to consult in a non-formal and less expensive way the community of the students on punctual issues.

The solution must have the following characteristics:

- To be able to provide the capacity for setting up a survey for a specific period of time
- To be able to provide real-time and final results for a survey
- To fit into existing infrastructure using the minimum of resources

The qualities required to have a proper survey are [2]:

- Only the target population should access the survey

- The answers should be anonymous
- The capability to set a policy regarding the numbers of possible responses
- The capability to use different types of questions

It was clear that Internet communication should be the basis of the solution and the reason that an on-line application was needed. Because of the existing experience in using the Moodle e-learning platform [3], it was proposed that Moodle to be used as survey tool for the community of the students at the Faculty of Medicine. For this, Moodle was used to find the opinion of the students in a real-life problem that concerned the student community. The researchers studied how Moodle –which is an e-learning platform, not a social survey platform - can handle the issues described above.

## **Material and Method**

The opportunity to start the study was given by the wish of the leadership to find the opinion of the students about the answer of the question “Which member of the academic staff do you consider to be the best teacher in 2011-2012?”. Previously, the Faculty community provided nominees so the students needed to choose one name from a list of 20. The question had to be addressed only to the students enrolled at the Faculty of Medicine, each student could choose just once, after choosing, the answer could not be changed, the answers had to be anonymous, and the survey to take place in a fixed period of time. At the end of the survey the results had to show the preferences of the students, but real-time results were expected as well during the survey.

To achieve these they used an existing instance of Moodle 2.0.7, already used for other purposes. The platform had only the standard objects installed [4], so to be able to put questions to the user not for testing but to finding out opinions, the questionnaire module[5] had to be installed using a specific procedure [6]. The questionnaire module is a survey-like type of Moodle activity using for gathering data from users. It allows different types of questions: multiple-choice questions (single answer or multiple answers), essays or scale-based questions. It also allows the administrator to set the period of time for answering the questions, and the policy regarding the responses – how many times the user has the chance to respond (respond once or respond many times or respond daily, and so on) and how the system will store the answers (anonymous or storing the respondent's name).

A new topic base course was created; the course contained one topic on which a questionnaire activity was placed. The questionnaire was set for answering only once and anonymously in the defined period of time; the students had to express their preference by choosing just one of a list of names by clicking the corresponding radio button.

The survey was addressed to the students of Faculty of Medicine who were not users of the existing Moodle platform. So, for each student an account had to be created and the credentials had to be provided to the students. The list of students was obtained from Faculty administration in Excel format. To create the username and the password an algorithm based on the information from the individual student cards was used, and the results of the algorithm were transmitted to the students using the infrastructure of the Medical Students Organization - OSM Cluj Napoca [7]. To import all users the Upload Users Moodle Module [8] was used.

For future benefit it was decided not to automatically enroll the users into the course during the import process but to divide the students into groups by study year. For this, Moodle has provided the Cohort module [9], which allows a user to be part of a specific group. Because this operation is done manually by default and the number of the students was large – more than 1600 in total – an external script had to be used [10].

Having done these actions, the preparation of the survey was complete. The survey commenced and students had the opportunity to express their opinion. Technical assistance was provided to the students by OSM Cluj Napoca.

To establish if Moodle is suitable to be used for surveys at the Faculty of Medicine the following items were studied:

1. How easily can one create the authentication credentials for a large group of people starting from a list?
2. How easy is it to set up a survey?
3. How easy is it to enroll a large group of users to a survey?
4. Is existing infrastructure sufficient for the amount of concurrent access required by a survey at the Faculty of Medicine?
5. Is Moodle able to offer both real-time and final results?
6. Is this method considered acceptable by the students?

## Results

The process of importing the authentication credentials from a file is very well documented both on platform documentation and on the Web – including video tutorials, so the importing process of student’s credentials was done very easily. The algorithm used for creating those credentials ensured that each individual had a unique username. The settings of the import module allowed non-enforcement of the security policy for imported objects and preparing them to be assigned to cohorts.

Having experience in using Moodle, the setting of the survey – policy settings and editing the question – was very easy to carry out. Even so, the intuitive interface and logical way of constructing should help an inexperienced user to set up a simple survey in a matter of minutes.

Using the documentation for the external script, the users were easily assigned to cohorts. It must be noted that this procedure involved the participation of a network administrator; the procedure had to run directly on the machine which Moodle was installed on. This operation could be skipped if the assignment has been done immediately after the import of the users.

The survey took three and a half days. The distribution of the access to the survey is shown in image 1.

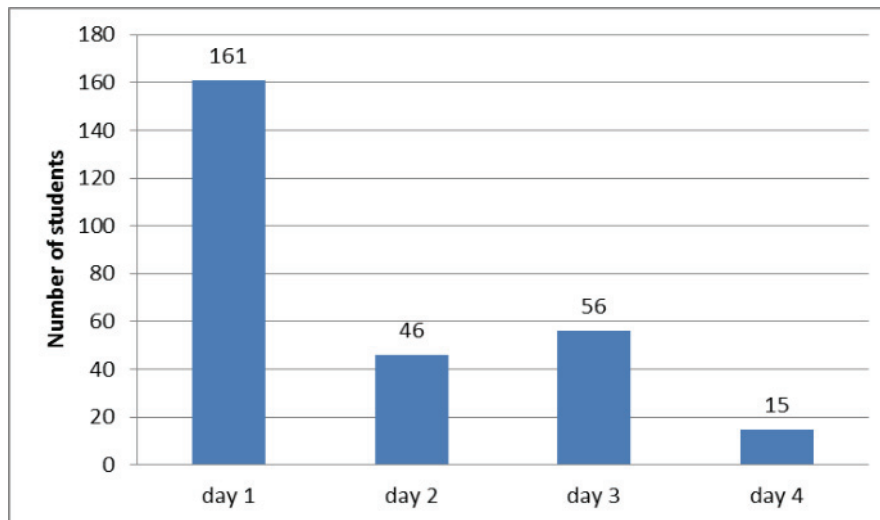


Image 1. Access to the survey during the four days period

The hardware and software infrastructure was constantly monitored and there were no delays or failures of services in accessing the Moodle platform. The technical staff received only one request for help.

During the time the survey was available, the results of the survey were available to the designated users, the platform allowing them to export the results in Excel format or to present a graphical representation of the results.

A total of 278 students participated in the survey - almost 20% of the entire community. The reactions from the community of the students were very favorable.

## **Discussions**

The main use for Moodle is e-learning. But, as this study has proven, it can be used successfully for other things, surveys being one of those. If the survey is very clearly designed, Moodle has the tools that allow users to easy set up a survey.

The rate of access to this particular survey could have been improved if the survey had been promoted more to the students. In addition, before starting the survey, students should have been informed of how important the result of the survey would be to the final decision at University level.

It is very important to know the capabilities of Moodle and the way that Moodle works. Knowledge of those things could prevent the need for external actions and saves time and effort. Additionally, before you start a survey, ensure that you have access to a logistical team and support staff.

## **Conclusion**

The study proved that the Faculty of Medicine, “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca has managed to use its own existing infrastructure to set up a survey targeting the student community without investing in more hardware or software, and that Moodle is a suitable platform for performing surveys.

## **Conflict of Interest**

The authors declare that they have no conflict of interest.

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