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How to Improve Students' Satisfaction Using Mobile Devices

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In the last years new computing technologies with powerful processors and more advanced operating systems caused the spread of smartphones, personal digital assistants devices (PDA) and, most recently, of other devices like tablets. In a didactic context, both at school and university, the use of mobile devices has been a problem to face since the introduction of the first mobile phones. It was not only because these devices can be an element of disturbance during a lesson but also because they can be used by students for access to information in particular situations like exams.

Due to these considerations we tried to take advantage of the wide use of mobile devices within a university class. In this paper the experience of mobile devices usage, combined with traditional teaching and learning media, in a technical faculty is reported.

In the last years the development of new computing devices, based on powerful processors and advanced Operating Systems can be observed. There are two classes of devices that emerged quickly: tablets and smartphones.

The course of Electrical Measurements at the Faculty of Engineering of "La Sapienza" in Rome was already based on a Moodle web site to implement e-learning [1].

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Wi-Fi is available in the lecture rooms at the Faculty of Civil and Industrial Engineering. At the first lecture of Electrical Measurements course, students are informed that all the activities provided during the course will be done using mobile devices.

Course activities are structured in the following way (an example of activities' scheme is represented here):

- the lesson on a topic starts;
- when the first part of the topic is concluded, students can have access to materials provided on the web site, usually in the PDF file format;
- they are encouraged during the lesson to interact, suggesting other links to the sites where it is possible to find more information on the topic;
- in the following lesson they must do a quiz containing the topics studied previously. The quiz is activated in real time on the web site during the lesson and there is a preset time to do it. Students can check their results when they have finished and the quiz tasks are closed.
- assignments can be activated during the lessons at the following stages as well. The students' reports must be uploaded on the website.

Due to the use of mobile devices all activities are performed better, everything is produced in an electronic format and corrections can be partially automated. The students' attention is higher and as a result students' satisfaction is greater, as the interaction with teachers and collaboration with classmates are performed in real time during the lessons [2].

The use of ICT within universities [3] helped to increase effectively the quality of higher education. The Moodle-based web site is a friendly environment for the exchange of information and it offers numerous possibilities for interaction among students, teachers and tutors. The combined use of Moodle and mobile devices is a powerful instrument for the improvement of quality of teaching and learning. ■

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