UNDERGRADUATION COURSE EVALUATION
A Case of Success

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Abstract: One important question in education management is the best way to conduct institutional evaluation. This relevant process that helps the institution in its self-knowledge is essential to verify if the institution goals are being achieved and to plan quality improvements. One important matter to be considered is the time between the forms filling by the stakeholders and the reports of the results. If this time is too long the results has a minor impact in the actions that will bring benefits to people that are involved in the process. To deal with this matter a software support is mandatory. This work presents a effort of the institution to establish an evaluation process supported by web-based software. The process was extensively discussed among students, lecturers, coordinators and principals in order to create forms and questions that best fit for each type of stakeholder involved in the process. This work presents the on-line indicators of the institution that are being used to speed up management actions.

1 INTRODUCTION

Evaluation, which is understood as a continuous and systematic process, allows people to identify if the goals of the institution under evaluation are being achieved successfully. In this process, their strengths and weaknesses are revealed, as well as the elements to sustain discussions that may result in guidelines for possible revisions in its design (Vieira Neto, 2003). The term *process* is considered as a set of actions (Freitas e Arica, 2008). In the scope of this work, these actions are developed in order to evaluate students learning and infrastructure conditions.

Evaluation, in general, is essentially a complex phenomenon and can not be adequately understood if we do not observe the results with many eyes and do not have support from analysis tools (Dias Sobrinho, 2000).

Among the key components of an evaluation, the methodologies for the data collection, data analysis and data interpretation must be established, so that evaluation purposes are achieved in the best way possible. The inadequate choice of these methodologies may render the evaluation unviable or ineffective.

Data collection generally occurs through interviews and/or questionnaires with the institution representative people involved in the evaluation process. According to Dey and Fenty (Dey and Fenty, 1999), evaluations with such approach are of a quantitative nature, selecting the indicators in advance.

The indicators of the evaluation process constitute a major propellant for institution changes. The evaluation of the institution gives us at the same time a situation diagnosis and provides indicators that can be valuable as a reference to prepare action plans, strengthening or correcting routes to improve the quality of offered education.

Often information from an evaluation process is explored through descriptive statistics, producing extensive reports that, in most cases, do not allow interested people make the best use of the information (Vieira Neto, 2003). Also, the lack of computational tools to support and consolidate collected data makes the process infeasible.

The main goal of this work is to present an experience developed and implemented of an undergraduate academic program evaluation process supported by software. The process takes into account the evaluation of courses modules and the institution infrastructure by students and the evaluation of students by responsible lecturers.

The remainder of this paper is organized as follows: the next section presents the undergraduate

program evaluation details; Section 3 describes the software product developed; results are presented in Section 4; finally Section 5 concludes the paper.

2 THE EVALUATION

It is believed that the evaluation process should be considered based on two main and essential elements in an educational institution: the lecturers and students. For the lecturers usually is used as criteria: professional qualifications, professional experience and scientific production. Undoubtedly they are important, but not necessarily ensure the quality of teaching, while other criteria no less important for the educational quality, such as didactics, the way used to provide doubts clarification and punctuality, are not always present in evaluations in general.

The Undergraduate Program Evaluation at UNICAMP was bringing a disincentive to students to participate in the process. Moreover, the model did not provide any way of evaluating the students by the lecturers.

Done on paper, read by optical readers, stored in database and later consolidated, the evaluation was a slow process and the results were released with a gap of nearly six months.

This fact made us think that it is time to use the computing resources we had available at the institution to support the evaluation process modernization so that students and lecturers could help in improving the courses, the institution social life and its infrastructure.

The Undergraduate Program Evaluation presented in this work is an interactive process that was developed in cooperation with all members of the Institution. It was consensus that the main objectives of the evaluation should be centered on the use of the evaluation results to maintain and improve the quality and relevance of our program.

In this context, the evaluation system presents an assessment tool taking into account the students and lecturers perception.

Another important conclusion was a consensus that lecturers should evaluate students' behavior during classes and express themselves about students' commitment. Also, the infrastructure evaluation should be done in order to provide knowledge about the improvements that are necessary. The student and lecturers participation is completely optional and spontaneous.

2.1 System Requirements

Based on the results of the discussion, the Undergraduate Program Evaluation should be composed by questionnaires with pre-established questions but also open questions to enable students and lecturers to submit free opinions about every topic related to the institution. These open questions also help the improvement of pre-established questions for future versions.

The evaluation results should be monitored in real-time allowing course coordinators and principals to take quick actions if a critical problem is detected. It is important that participants can evaluate their issues remotely using internet access. Moreover, the number of items and the time it takes to complete the questionnaire are important. So, the questionnaire should be composed by few pre-established questions. When the participants leave the system by any reason, they can continue later at the point where they stopped. The necessary information about students and the modules in which they are enrolled must be obtained from the central system of the university.

This version of the evaluation system should be composed by four questionnaires;

a) students' satisfaction about the undergraduate course and the institution. We want to know if the course they are attending was its preferred option and why they chose the course.

b) students' perception about the institution infrastructure and the access of the student to administrative structure.

c) Courses' evaluation by the students to evaluate the objective of the courses, didactic and organization of the lecturers, teaching materials, the relevance of the subjects addressed in tests, lecturers motivation and students self-assessment

d) Class' evaluation by the lecturer. It's possible to analyze the class by the viewpoint of the lecturer in same aspects, as: objective of the courses, students' commitment and motivation, the bibliography availability and the background of the students.

The software was developed based on these requirements. The next section presents technical details of software and considerations about the evolution of the evaluation system.

3 THE SOFTWARE

The software architecture was totally based on open source software, which minimizes the costs of the development. The chosen operating system was

Debian Linux (Debian, 2008) and the application server is an Apache HTTP Server (Apache, 2008) with PHP Scripting Language (PHP, 2008) installed on it; all the data of the software is stored in a MySQL Database (MySQL, 2008), including text forms and written questions.

When a user accesses the system the first interface that he observes is the status of the evaluation that should be completed, which shows the forms that are already completed ("Done") and pending ("Questions Pending"). Figure 1 shows the interface of the lecturer that presents all the subject that a specific lecturer have under his responsibility.
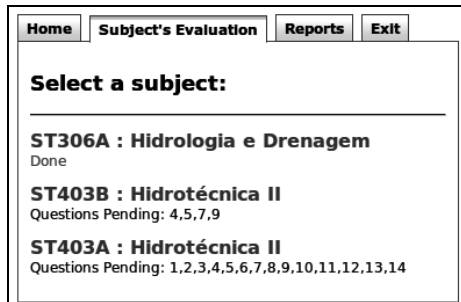

Figure 1: Lecturer Status Interface.

The system is designed to work with three different users: students, lecturers and coordinators/principals. Student are asked to fill in the evaluation forms of the subjects he is enrolled.

The evaluation contents are exemplified in Figure 2, that partially shows the form of a specific subject been evaluated by the student.
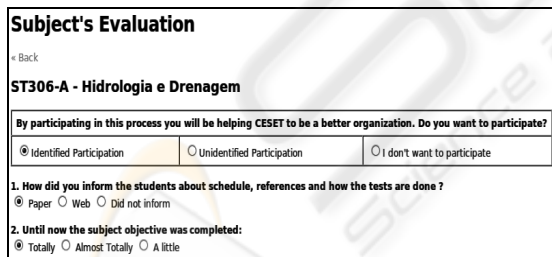

Figure 2: Example of the Evaluation' Contents.

The student and the lectures can follow the evaluations done in a real time very easily. The lecturers have access to their subjects and students to their courses. Figure 3 shows partially the report that lecturers have access.

The coordinator/principal has permission to verify the assessment reports of all disciplines of the organization and to monitor how the progress of filling in forms by students and lecturers are been done.
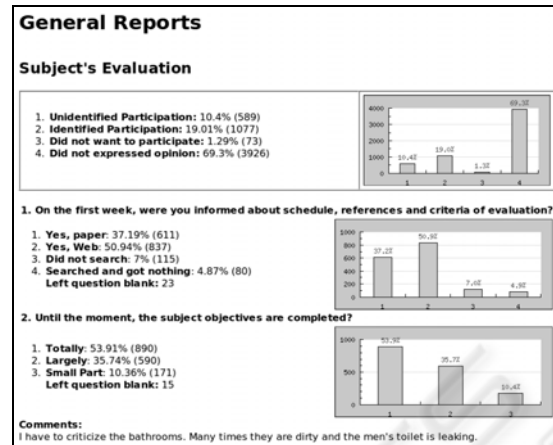

Figure 3: Example of Lecturers/Directors Report.

It is important to notice that each time the participant enters an answer or comment the charts are updated and new comments are inserted.

4 RESULTS OBTAINED

The evaluation process were applied four times. The first and second time that it was applied there was no significant participation neither by the students nor by the lecturers, but it was enough to ensure that major adjustments could be done both in the evaluation process and supported software.

At that time, evaluation results were released two months after the end of the process. Although this period is much better than the manual process, the students complained about information delay. This fact can coroborate to not encourage the students to participate in the process the second time. Now, with the new version of the system, the results are released instantaneously and people are able to accompany them daily.

Table 1 and Figure 4 show the participation of the students and lectures. It is possible to observe that in the third time the evaluation was applied, 92% of lecturers and 42% of students participated in the process. These results are due to the internal market of the importance of the evaluation and a virtual reminder that appears every time the users logged in the institution's website. Also, it is good to mention that the participation in the forth time decreased. Lecturers participation decreased 18% and students participation 9,3%. The reason why this undesired event occurred was being investigated at the time this work was written. But clearly we can see that the lecturer participation encourages the student participation.

Table 1: Students and Lecturers Participation.

	1S/07	2S/07	1S/08	2s/08
Students	20,3%	11,7%	41,9%	30,2%
Lecturers	47%	34%	92%	57%

It is believed that the spontaneous participation should be kept, but the institution intends to create a way to ensure that each student is notified about the process.

Figure 5 shows another significant result. The students prefer to participate without identification. Maybe they are concerned about any type of retaliation due to their criticism and comments.

The students' comments about installations and critical problems in a specific subject allows the administrators to act before the end of the evaluation process.
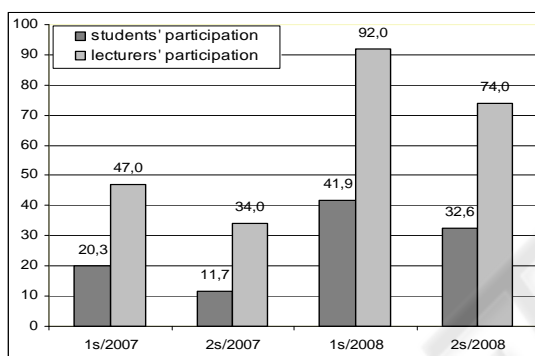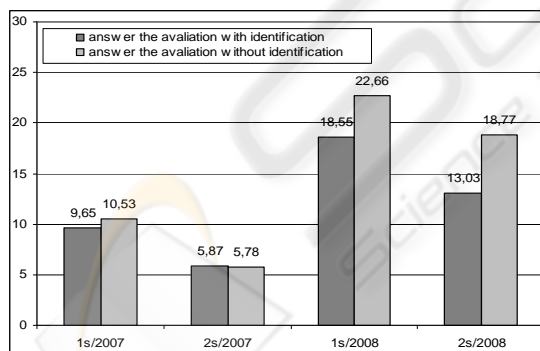

Figure 4: Students and Lecturers participation.

Figure 5: Students with and without identification.

5 CONCLUSIONS

The evaluation process of undergraduation subjects, lecturers and the infrastructure of the institution contributes to the improvement of education quality. At this point of view, this work presents a new evaluation process that was applied four times and has been contributed positively to the improvement of the institution and courses.

The use of computer resources aims to stimulate the participation of the people involved in the process, facilitating the filling of the and helping to obtain and disseminate the results.

Due to the programming structure of the system, the process coordinators can easily include or exclude new texts and / or questions in the forms, since these information are stored in database management systems and could be easily manipulated.

Finally, the evaluation system enables educational institution managers to monitor in real time the progress of evaluation, allowing implement corrective actions during and after the process.

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