SOFTWARE ASSISTED SYLLABUS PREPARATION FOR COMPUTER NETWORKS COURSES

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ABSTRACT

Course descriptions prepared by the lecturers in the beginning of the academic year do not get any feed back from the students enrolled it. These syllabuses are not only used for the future semesters, but also used by the other lecturers without even making any changes. This causes a negative effect on the student education since many of the students come with the different backgrounds and interests for the content of the course. In addition to the changing abilities and capabilities of the students every year, there can be administrative changes in the official curriculum. In our approach, we prepared a detailed dynamic web site together with questionnaire filled in advance, that will be applied to the new students to determine their knowledge level. This will also facilitate the preparatory reviews for the lecturers to create a satisfactory education plan based on the student feedback. In this paper, a software assisted questionnaire form through a dynamically updated web page is presented for Computer Networks course. Assessing current level of the students helps to analyze and improve results in many aspects and converges the objectives of the students and the course teacher.

Keywords: Education plan, class assessment, syllabus preparation

INTRODUCTION

It is usually true that many of the teachers working in the universities prepare syllabuses of their courses according to their specialized areas by gradually ignoring the student backgrounds and interests. A detailed course description requires a very serious work load that it is virtually impossible for any single student to maintain even surface competence in the whole course plan (Crawley, 2002). This presents considerable difficulty from the point of the course where the students have widely differing characteristics.

However, there is probably a fundamental need for effective coordination between the student and the teacher. The use of different web tools facilitates a mutual agreement for these two groups. The proposed work describes a network-enabled web page that can be used to help teachers visualize and plan course descriptions. Students often need basic knowledge of the course subjects for their comments and proposals to be as effective as possible for an update. The dynamic course syllabus (Ullrich, 2003) proposed here has been improved with the needs of teachers in the Department of Computer Engineering. This group can be characterized as people working primarily on a wide variety of computer related courses.

The current status of this type of work in schools may be summarized as follows: A questionnaire especially software based is not widely used, even though it can be used to observe and determine the students' knowledge and interests before and after the course they enrolled. Even if there is a preview exam which can be used instead of the questionnaire, it can not be a good way to make orientation after the course. Because;

- Filling the preview exams is a mandatory process,
- Evaluating data requires teacher to spend much time if there are too many students,
- The problems that are met in students' knowledge level can not easily be clarified,
- It can not be used to confirm the future knowledge level of the students after the course

From the point of ready-made syllabuses, there are also some standard section titles (such as Course Information, Course Requirements, Instructor Information, Course Goals, Textbooks, Policies, Course Schedule, Custom, etc.) which have not been properly filled since it stays in the course file forever (Wolfram Education Group, 2007). Providing the necessary data entry into these areas seems very easy, but, it may hardly be applied as a whole. The students will only be more knowledgeable in and about these fields after the semester.

MOTIVATION OF A NEW WEB TOOL

The problems occurred while filling the questionnaire form are that they are not designed well or difficult to fill the required fields. Therefore, students ask many questions in order to fill the fields correctly. They also leave blanks some specific parts and this prevents to have a reasonable cumulative outcome. In addition, the organization of the fields in the form can make it difficult to read and fill. Collecting and evaluating the forms after their implementation is also difficult and causes to spend much time, if the number of students is high.

Students and the teachers should be considered throughout the website design process. Usability should not be overlooked

(Shinatrakool, 2000). The best approach to take is to incorporate a dynamic model into the design and production process. The benefits of such a tool are:

- Student satisfaction,
- Student productivity and success,
- Reduced training and support costs,
- Return business to improve the competitiveness of teachers.

It is necessary to prioritize requirements by reviewing the students' interests, so the design phase of the web page can easily be handled. That will help to ensure that the higher-priority subjects are first served when the site launches (Ullrich, 2005). Down the road, the students and the teachers could evaluate the process after seeing the site in action.

Teachers begin with the questionnaire or the web site reviews of the students for further feedback. A newly designed site adds flexibility to better react and adapt to the students' feedback and requests. The meaningful and easy to use guidelines are intended for all Web content developers. Web page design and questionnaire should be subjected to teacher reviews in keeping with good update (Nadkarni, 2003). This review should span the entire range of functional objectives, technical capabilities and limitations of the students according to the questionnaire results and constraints throughout the page design (Informit.com, 2007).

DYNAMIC SYLLABUS DESIGN

The first rule is to get to know the level of audience before beginning a Web site project. This is the first rule since the work surrounding the Web site is to help students who are currently visitors get what they need while meeting the goals for the Web site (Oliver, 1994). The dynamic web based project has been developed for meeting the requirements described in the former section. Main objective of the software is to collect student comments and recommendations about the course plan and ask them to fill the questionnaire that will help the current level of their knowledge for the course. Many negotiations and discussions can be conducted with the interested lecturers during all developing stages of the site and the best reviewing and updating techniques can be tested. Dynamic Syllabus Design software is developed with MS FrontPage and PHP. Design with Web standards increases the chance of reaching more students, no matter what they use as the Internet Tool. There are course objectives, meeting time and place for the course, Instructors on the first page (Figure 1). The student can directly look at the premeditated syllabus or begin filling the questionnaire if s/he is asked by clicking the option buttons. The students can view the uploaded syllabus (Figure 2).
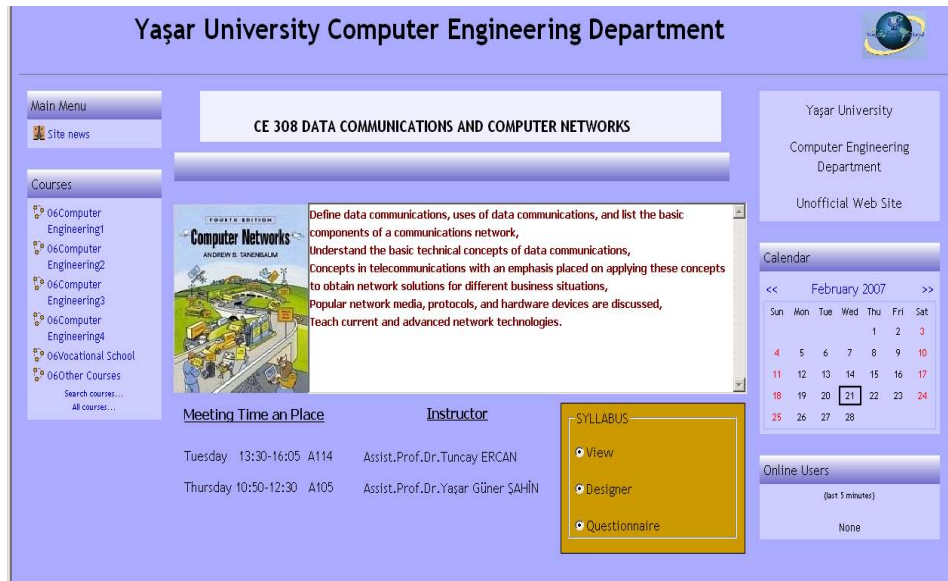

Figure 1: Computer Networks Course Home Page

CE 308 Data Communications and Networks
Spring 2006—2007

Course Code Title and Credits Hours	CE 308 Data Communications and Networks (3+2,4)
Class Schedule Classroom	Tuesday 13:30 16:05 A.114 Thursday 10:50 12:30 A.105
Instructor	Assist. Prof Dr. Tuncay ERCAN Phone: 461 41 11/306 tuncay.ercan@yasar.edu.tr
Assistant	¤
Textbook	Computer Networks Andrew S. Tanenbaum ISBN: 013-038488-7 Page:891 Pub. Date: 2003 Publisher: Pearson Education, Inc. 55 YTL¤
Reference Book(s)	Data Communications and Networking Behrouz A. Forouzan ISBN: 0-07-282294-5 944p Pub. Date: 2001 Publisher: McGraw-Hill Higher Education¤
Grading of Exams	Quizzes, Homeworks, Projects : 30% Midterm : 30% Final : 40%¤
Attendance	Compulsory (70%)¤
Course Objective	• Define data communications, uses of data communications, and list the basic components of a communications network • Understand the basic technical concepts of data communications. • Concepts in telecommunications with an emphasis placed on applying these concepts to obtain network solutions for different business situations • Popular network media, protocols, and hardware devices are discussed. • Teach current and advanced network technologies.

Figure 2: Course Syllabus

Figure 3: Web Page Designer View

However, if the teacher wants to add some other fields, make some changes and arrange the students' feedback after evaluating the questionnaire forms, HTML format allows him great flexibility (Figure 3).

The student can click on any section title in the syllabus and add additional information after reading the introduction box. Assuming that the student doesn't have the syllabus file, s/he would click on the "Upload Syllabus" button.

Figure 4 shows the main questionnaire form which might be applied at the beginning of the semester to the students for "Computer Networks" course. This questionnaire is used to determine which subjects (except mandatory subjects, because these subjects must be included) are included in the course concept and education period.

Figure 4: Questionnaire Form for Computer Networks

The main questionnaire is also used to assess students' experiences and interests about the certain course (Stanford University, 2007). Students' abilities and awareness about the course can be assessed and evaluated by questions organized from "Basic English" language skills and success levels of students to the detailed topics about the course. After application of the questionnaire, all the scores are computed in accordance with 3 groups which are general interests, students' general success profile and experiences about the course respectively. Then calculated results may be compared and assessed in accordance with course coherency and 3 average values calculated using all the students' group results. Finally, combined values help the educators to construct their syllabuses.

CONCLUSION

This tool permits teachers to create a novel type of course description based on the idea of a dynamically updated web page. Course data created by this method have the regular sequences of topics typically found in traditional courses. The tool is part of an environment that is designed to foster meaningful learning and reuse of course design and instructional content. It presents a description of this software tool developed iteratively and the discussion of the ways that the tool fosters course update and content reuse. Basic goal of questionnaire is to steer the students who have different intelligence fields and features into the best profession as much as possible they can adapt.

The other departments and the faculties or even the universities might even wish to consider something similar to this work. The test results and comments of students are used to designate the decisions of them about their professions in accordance with academic and technical education. Additional information data is printed and that can be used for future actions, since the background database calculates the necessary scores, and some interpretations behalf of teachers.

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