

STUDENT ACTIVITIES IN A COMPUTER SCIENCE WEB-BASED COURSE

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I. INTRODUCTION

The Open University of Israel (OUI) is a distance learning institution with an open admission policy which is based solely on distance learning and self-study [3, 6, 7]. The teaching methods practiced at the OUI combine traditional and web-based distance education including course websites which provide an interactive learning environment [1]. The Web-based learning was introduced in the past decade because the increasing world-wide demand for distance education learning communities [2]. This poster describes a research we have been conducting regarding the use of a typical Computer Science course website. We analyzed the extent of use of the course website; we categorized the kind of activities the students were performing in the course website and we located the most popular pages in the website. We also checked the percentage of students who use the course website and analyzed their usage profile.

2. THE RESEARCH

We are currently running a research in order to evaluate the extent of the use of the course websites and to better understand the profile of students who use the course website. We selected one of our advanced courses: "Advanced Programming in Java" which can be taken both in the undergraduate and graduate programs. The research questions we posed are presented below:

1. To what extent do the students use the course website and what is the distribution of use throughout the semester?
2. Which pages of the course website are used by the students and to what extent?
3. What percentage of students take advantage of the course website and what is the extent of use per student?

The group of students we are analyzing is composed of 181 students who were enrolled in the course "Advanced Programming in Java" in the fall semester of 2005.

3. RESULTS AND DISCUSSION

3.1 Course Website Use throughout the Semester

We would like to present some figures regarding the use of the homepage of the course "Advanced Programming in Java". Our semester lasts 17 weeks. It started on September 19th 2004 and ended on January 14th 2005. The exam period immediately follows the semester and it lasts for about one month. Each course has two final exams following the semester. The exams in this course were on January 20th and on February 3rd. Each student must select one of these dates for their final exam. Figure 1 shows the number of monthly requests for pages in the course website throughout the months of the semester:

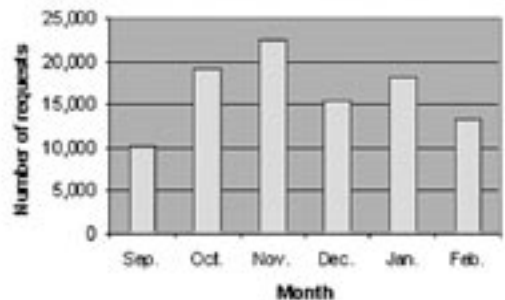


Figure 1. Number of monthly requests.

The reason for the low level of activity in the month of September is due to the fact that the semester started on September 19th. The month of February was also fairly active considering the fact that the second exam was on February 3rd.

We noticed that students were most active in the course website in the month of November. This can be explained by the fact that the course material becomes more complex at this point, and students make more use of the website in order to help them comprehend the course material and accomplish the assignments. We were surprised by the high level of use of the website (with an average of 580 pages requested per day), considering the fact that the materials on the website do not replace the written study materials which constitute the core of the course, but expand and enrich them.

3.2 Most Frequently Used Pages

We checked which pages of the course website were most frequently used by the students. We divided the course website into the following categories: (a) Discussion group (b) Course materials such as exercises, example exams, software installation guide and course schedule (c) Additional materials such as lecture notes and class examples (d) Links to relevant data sources on the internet (e) Course bulletin board (f) Other pages such as student list, staff list, administrative tools etc.

We checked the number of requests for each of these categories throughout the semester. Figure 2 shows the distribution of requests over the months of the semester in each category. Looking at the graph one can see that the discussion group was by far the most popular category. The number of requests in this category alone accounted for about 50% of the total number of requests. We noticed that the activity in the discussion group was at its peak in the month of November which was the middle of the semester. There were over 1000 messages in the discussion group during the semester. It has been found in several studies that online discussion groups contribute to the learning process, they facilitate exchange of information among students and enable tutor intervention when necessary [4, 5, 8].

We noticed that both categories of "Course material" and "Additional material" were used approximately at the same rate. The month of January was most active in these categories and this can probably be explained by the proximity to the final exam. On the other hand, the "Web links" category was not very popular. This can be explained by the fact that this category contains references to additional websites, which are related to the course materials but are considered as further reading materials. The course bulletin board was most active in the months of October and November. This corresponds to the overall use of the course website, which was most active in the middle of the semester.

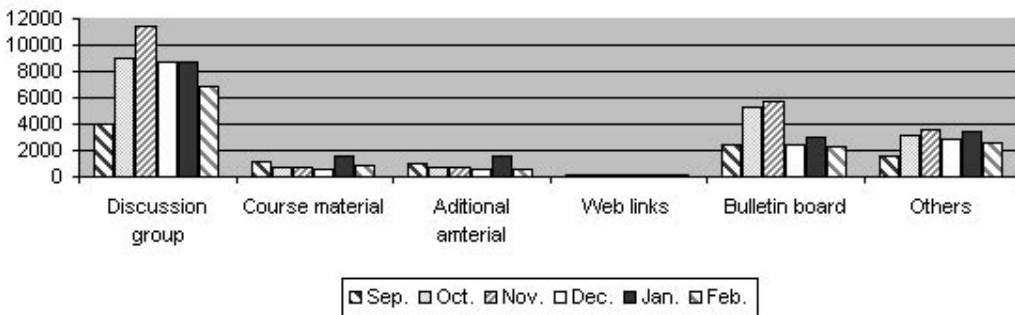


Figure 2. Requests' distribution according to categories..

3.3 Website Use per Student

We were wondering what percentage of students take advantage of the course website. We want to emphasize that the use of the course website is not mandatory and its main purpose is to provide optional course material and support for the distance education practiced at the OUI. We checked the number of pages requested each month by the 50 most active students in that month. We summed the number of requests of these students throughout the semester. We found that 72% of the students (130 students out of 181) enrolled in the course were relatively active at least in one month of the semester. The rest of the students (28%) exhibited a very low level of activity or were not active at all.

We found that a small percentage of students were extremely active in the course website while the others exhibited a mild and steady level of activity. 50% of the activity was performed by 16 students (12% of the students in this group) while more than half of the students in this group (55%) accounted for only 10% of the activity.

While analyzing this data we also noticed that some of the students in this group used the website steadily throughout the semester while others did not. Some of the students had one peak of activity during the semester. For example, some of them were especially active in the first month of the semester while others were more active during the month of February which was the month of the final exam.

5. REFERENCES

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