**Dynamic Aspects of e-Learning Systems:**

* **Adapt to User:** Organization of the Material; Closed Learning Environments -> Relatively individualized learning environment
* **Adapt to Open Web:**

Our Course is Designed to Support a course on “Computer Networks”. The chapters of basic learning materials are fixed, what keeps changing is the collection of papers to be recommended to the learners.

Each paper is tagged based on its content and technical aspects. Learners are required to give feedback (ratings) towards the papers recommended to them. Therefore, according to both the usage and ratings of a paper, the system will adaptively change a paper's tags, and determine whether or not the paper should be kept, deleted or put into a backup list.

Two of the major techniques that would be adopted include collaborative filtering and data clustering which have seldom been reported in the artificial intelligence in education literature.

In our proposed system, we will organize papers not only based on their main research categories, but also their technical levels. For example, review papers, workshop papers, highly technical papers etc.

**Points that Might Differ Students from Each Other:**

|  |  |  |
| --- | --- | --- |
| Point | Type A | Type B |
| **Reading Detailed Technical Level Articles** (Questions while building Profile; also if interested in technical levels, will be asked about technical points of interest + Tracking During Reading History) | Not Interested in Reading Technical Articles | Interested in Reading Technical Articles |
| **Technical Level** (Survey while Building Profile, define technical level so Recommend articles based on it). This Might need clusters, because Student may be “Expert” in some topics, “Professional” in others, “Naive” in third. So, **Clustering** might be important here. | Low | High |
| **Point of Interest** | **Application:** Novice Users are generally interested in (Applications) of whatever they learn. Applications make them understand more about the topics, without going into details of that topic | Technique: Expert Users generally are aware of different techniques to solve problems, and so they might be interested in (articles that evaluates different techniques, present new techniques, compares techniques, and so on) – Unlike novice users |
|  |  |  |

**Papers Classifications:**

* Magazine Articles
* Conference Papers
* Workshop Papers
* Technical Report

**Temporal and Context Features of Papers:**

* **Recent:** Publishing date
* **Authors**
* **Length**
* **Keywords**
* **Abstract**
* **Introduction**
* **Conclusion**
* **References**
* **Citation**

**Paper Tags:**

* **Content Tag:**
  + **Title**
  + **Category Contents** (in terms of Keywords)
  + **Publication Year**
  + **Publication Place**
  + **Authors**
  + **Length**
  + **Publication Type**
* **Technical Tag:** Added manually when the paper is added. Can be inferred back, and adjusted based on “feedback”
  + **Technical Level**
  + **Readability**
  + **Usefulness**

**Seminal Works** are stored as “**Mandatory Readings**”. Mainly, will be Determined by: Instructors.

**Paper 2: Data Mining for Moodle**

This paper is Important, because I have Moodle DB, so I can make use of it, start with it, and start working on it.

**Tracking Reports:** Check the Downloaded Excel file from Moodle. [Open](file:///D:\Documents%20and%20Settings\crystal\My%20Documents\Downloads\logs_20100106-0954.xls)

* Course Title
* Participants
* Days
* **Activities:** News, Errors
* **Actions:** View, Add, Update, Delete

**Attributes used for Each Student**



**Statistics about Students accessing System**

* Number of visits
* Visits / page
* Most frequently accessed courses
* Visits
* Duration per quarter
* Most searched terms
* Average number of constraints violation
* Average problem complexity
* Infer student attitudes that affect learning
* predict learning, and scores

**Student Model** stores information that is specific to each individual learner: it concerns “how” and “what” the students learns or his/her errors, and the student model plays a main role in planning the training path, supplying information to the pedagogical module of the system. This component provides a pattern of the educational process, using the student model in order to decide the instruction method that reflects the different needs of each student.

**Student Model**

**Accessing Modules:** Good, Sufficient, Insufficient

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**Note:** This paper saves: no. of access, scores for each module -> this is important and required, average duration access, initial score and average score -> if scores are allowed more than once, and here we will integrate with (assessment data).