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A Personalized e-Learning Portal D2L Recommender System

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Abstract: The e-Learning environments depend mainly on a series of by interactive contact details services. Recommender system in the course of e-Learning programs that is trying to recommend actions to the learner on behavior of the former educated workers. In this study proposed a framework a rule-based e-Learning Portal D2L Recommender System (PEPRS) and EPERS can assist and support learners in the search for educational materials and courses that suit their requirements. In suggested framework was developed D2L rules-based research on appropriate educational materials that meet the needs of all students.

Key words: D2L, e-Learning, recommender systems, personalized e-Larning, PEPRS

INTRODUCTION

Under developments in today's world has to be the use of technical and technological means in education and harness them to learn self and collectively student and make it the focus of the lecture, starting from the techniques used for display inside the classroom of multimedia and electronic devices and the end to go out for the physical components of education: smart as the school and virtual rows which is the interaction between members of the educational process via the internet and interactive video technologies. It is high importance to provide personalized system that can adapt automatically to the attention to and levels of education between the student and the teacher (Sikka *et al*., 2012).

Personalized recommendation former approach and their application recommendation in the field of e-Commerce and e-Business to buy the product. Personalized product recommendations help customers search the products they wish to purchase through a list of each customer for recommended products certain (Cheung *et al*., 2003). Such recommendations are creation of these by the recommender systems. Instead of just answering queries, the Recommender System (RS) in e-Learning Portal D2L has high potential for achieving advanced personalization (Sunil and Saini, 2013).

Recommendation systems is implemented successfully in the area e-Commerce e-Business, The main objective of recommendation systems is to help users deal with the problem of repetitive information and in excess of the required by the user by offering personalized recommendations and content and services. Using recommender systems in the e-Learning portal D2L environment to help in the provision of automatic operation to support the educated in creating the an appropriate materials rather than relying on colleagues, teachers additional sources (Imran *et al*., 2014). The main objective of systems recommendation is to help users deal with the problem of repetitive information and in excess of the required by the user by offering personalized recommendations and content and services (Ye, 2011).

This study aims to build a Personalized e-Learning Portal D2L Recommender System (PEPRS) to help both teachers to improve the educational process and the performance of the learners to find appropriate material on the internet.

MATERIALS AND METHODS

A framework of PEPRS: This study proposes the framework of PEPRS and analyses the main components of the PEPRS as shown in Fig. 1. This study proposes a framework of a Personalized e-Learning Portal D2L Recommender System (PEPRS) as shown in Fig. 1. This system consists of seven main components: Gathering Student Information (GSI), Learning Material Matching Analysis (LMMA), Learning Recommendation Creation (LRC), Student Database (SD), Domain Knowledge Management (DKM), Learning Material Tree (LMT) and Portal D2L (PD2L).

The three components (GSI, LMM and LRC) are connected with a user interface, a SD, DKM, LMT supported PD2L. The system starts getting student information and storing it into SD in component, Student requirement analysis model is used in analyzing and identifying student requirements. In component PD2L are used for discovering associations between student requirements and LMT. Personalized learning material list for a given student is generation and recommended.

During DKM, the teacher can administration materials for an online course by establishing and design of LMT as indicated in Fig. 2. LMT the root is the name of

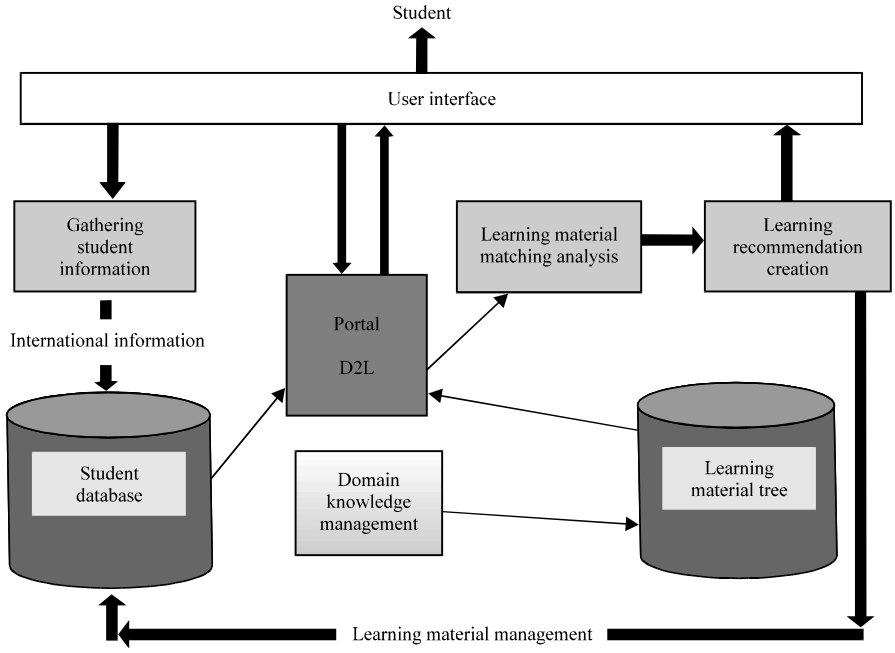

Fig. 1: The framework of PEPRS

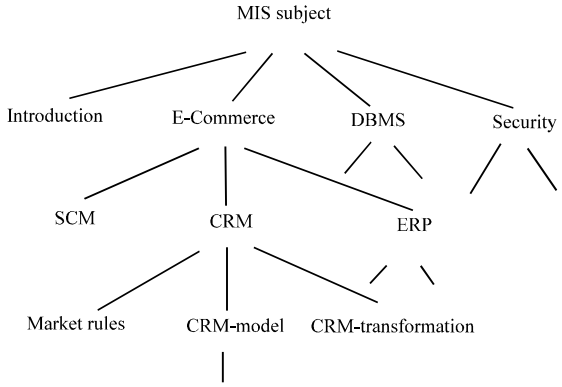

Fig. 2: Learning material tree

the course. The course is divided into chapters and chapters are divided into partitions and subsections.

Portal D2L: Majmaah University (MU) used the e-Learning system Desire2 Learn (D2L) in an online course management. D2L provides students with an interface to gain access to content, including courses, calendars of course, lessons, drop commissioning fund, contests and discussion forums and more.

Is management learning integrated system based educational process management and remote offers all the functions required to support e-Learning and through a number of integrated systems so as to facilitate the process of interaction between the student and faculty member and allows the same time, follow-up and monitor the progress of the educational process. It is a method of e-Learning used MU where he was able to interact with the e-Learning environment between the student and faculty member and create a new height of the learners and faculty.

The e-Learning portal D2L: The e-Learning is a modern methods of learning style which employs communication mechanisms modern computer networks, multimedia, voice and image, graphics and mechanisms search, electronic libraries as well as web portals either remotely or inside the classroom.

The e-Learning has become a major concern for many companies and institutions. The e-Learning systems may evolve with the global network as a whole and changes to e-Learning which is a new term coined by Downes (2005).

The e-Learning is more comprehensive than just the decisions of the group offered through websites and beyond that to the processes by which the management of the entire learning processes including logon students, track their progress and record data and prepare reports on their performance. Therefore, e-Learning is based mainly on computer systems to manage electronic learning processes known as Learning Management Systems (LMS). Which are programs designed to assist in the management and implementation and evaluation of all learning activities in educational institutions. The D2L system to manage e-Learning integrated system responsible for the e-Learning process management including admission and registration

and provide personal tests to determine the level of the learner and place it in the appropriate level and registration in courses and management courses and duties and the follow-up to student learning and management of the tests and supervision tools contact synchronous and non-synchronous.

On the other hand, the e-Learning management system LMS is not much focus on the content in terms of development or re-used, so it is often integrated into learning management systems, learning content systems and the System of Learning Content Management (LCMS) which is the environment in which they can stores management special units of learning (learning object repository) and used in the development of educational resources and these systems are characterized by high research capabilities allow developers to search and quick access to the texts needed to build learning content and media.

RESULTS AND DISCUSSION

Applications of PLRS: Majmaah University-College of Science and Humanities in Ghat (MU-CSHSG), Table 1 shows "Management Information Systems (MIS)" is a subject offered for non-IT students who come from many other faculties: such as business, engineering and science. Therefore, they have very different knowledge backgrounds, learning styles and needs of learning (Fig. 3).

For example, business administration students have learnt Customer Relationship Management (CRM) from a business administration subject of acting but with no experience about languages PC. The science students have a good knowledge in relational algorithm but are struggling with the understanding that market rules. The most engineering students and learned at least one languages PC but no experience in the Customer Relationship Management (CRM). As a result, most business learners feel database design part easier to handle than database implementation part while most engineering learners need more readings and practice in ER modeling. In order to deal with the multibackground learner situation, lecturers often indicate many choices of learning materials for each topic of the subject and learners often rely on incomplete information from their classmates and friends when deciding which of the indicated learning materials to read and which of exercise questions to do (Lu, 2004).

Therefore, most of students business administration feel fraction the database design easier for handling fraction of the implementation of the MIS while the most engineering students requires more readings and practices in the field of CRM. In order to cope with the multiplicity of position students background and faculty are often many choices of educational materials for each topic of the subject and learners show often rely on incomplete information than their colleagues

Table 1: An example of student information

SMU defined ID	S name	S background	Type
341100595	A. Almutairi	Business administration	FT
332111284	A. Yousef	Engineering	PT
332110383	A. Alqahtani	Science	PT
342106638	F. alluhaym	Science	PT
…	…	…	…

Fig. 3: Applications of PLRS

and friends. In the determination of any of the learning materials indicated to check and which questions exercise to do (Lu, 2004; Otair and Al-Hamad, 2005).

Anticipated that PEPRS to support students of learning material selection and therefore can deal with this situation. Table 1 shows one of the major tables in course of the learner management information systems. Figure 2 shows the LMT of course where several departments studied in session. Following line shows an example from recommendations:

```
Jess> (assert (SStudent (SNo 332110383)
 (SName "A.ALQAHTANI")
 (SBackground "Science)
 (section "Misrule"))) <Fact-1> Jess> (run).
A. ALQAHTANI You have to read MIS-rule section.
```

Figure 3 shows acceptance of a student in the course is done through pressure on the teacher (Classlist) in the member login: are going to the next page which shows where (university students, number and the name of the course (MIS) which was the registration application in which as in the following example.

Through the gate D2L out a list of registered students in the decision of MIS where the teacher can see each student's person and email address information for the teacher to communicate with each student.

CONCLUSION

This study presents and technology relating to personalized e-Learning Portal D2L recommender system PEPRS, especially to provide good recommendations to help students in the choice of educational materials through the provision of recommendations. PEPRS reinforce and increase of learners and teachers productivity in e-Learning settings. The framework will perform as an electronic and applies to any sector recommender systems of student learning in general.

REFERENCES

Cheung, K.W., J.T. Kwok, M.H. Law and K.C. Tsui, 2003. Mining customer product ratings for personalized marketing. Decis. Support Syst., 35: 231-243.

Downes, S., 2005. E-learning 2.0: ACM E-learn magazine. Association for Computing Machinery, Inc, New York, USA. http://elearnmag.acm.org/index.cfm

Imran, H., Q. Hoang, T.W. Chang and S. Graf, 2014. A framework to provide personalization in learning management systems through a recommender system approach. Proceedings of the 6th Asian Conference on Intelligent Information and Database Systems Volume 8397, April 7-9, 2014, Springer, New York, USA., ISBN:978-3-319-05475-9, pp: 271-280.

Lu, J., 2004. A personalized E-learning material recommender system. Proceedings of 2nd International Conference on Information Technology for Application (ICITA 2004), July 1-4, 2004, ICITA, New South Wales, Australia, pp: 374-379.

Otair, M.A. and A.Q. Al-Hamad, 2005. Expert personalized E-learning recommender system. Proceedings of the 1st International Conference on E-Business and E-Learning, June 23-25, 2005, ICBC, Amman, Jordan, pp: 126-131.

Sikka, R., A. Dhankhar and C. Rana, 2012. A survey paper on E-learning recommender system. Intl. J. Comput. Appl., 47: 27-30.

Sunil, L. and D.K. Saini, 2013. Design of a recommender system for web based learning. Proceedings of the World Congress on Lecture Notes in Engineering and Computer Science (WCE, 2013) Vol. 1, July 3-5, 2013, University of Queensland, London, UK., pp: 363-368.

Ye, H., 2011. A personalized collaborative filtering recommendation using association rules mining and self-organizing map. J. Software, 6: 732-739.