Virtual Learning Environments Based on the Learners Profile for Multi Learning Purposes

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Abstract— Recently E-learning environment become more useful for presenting and providing learning materials over online services, which has gained significant popularity. E-learning is a multi-dimensional activity where each dimension should be most organization adequately supported by an e-Learning system to provide fruitful learning materials to those are interest to read by online, a new experience for most users. The core problem of the current E-learning representation is the formalization of the learning concepts, which form the backbone of knowledge base about the domain or task setting, otherwise the learner incapable to practice the different technology to enhance their ability to contribute. Hence, this study aimed to design and develop a virtual learning environment based on the user or learner profile. Additionally, the propose system provide users with multi learning materials based on their searching profile.

Index Terms— e-Learning, e-Training, learning attitude, learning modules, virtual learning environment.

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1 INTRODUCTION

Nowadays, information can be accessed at the corner of the room by the innovation and advancement of on-line web-based technology. E-learning is learning that involves the acquisition, generation and transfer of knowledge using information and communications technology (ICT). Through ICT, learning can be much more effective and cheaper than traditional learning methods, for example Jeffrey in [1] and Jorge, Sandra and Roseli [2]. If a learner has difficulty with a particular concept, in e-learning the learner may be required to revise the concept again, while a learner who answers questions on the concept that with ease to move to the next concept immediately [3].

Different classification for the learning concepts has brought the usefulness for using new tools based on the learners needs. Furthermore, virtual learning environments customized to be interactive learning environments that are used for educational purposes as tool for remote and cross-border education. Learners can perform a wide range of exercises with a computer-based learning environment [4]. These classifications occupied an external and internal task that can be practiced in real life, for example due to the distance and time.

A lot of studies were done to investigate the effectiveness of

these environments on the learner skills to do their task accordingly to their knowledge. However, the sustainable learning communication via discussion groups and message boards is an important attribute which enables learners to learn from their peers, this kind of learning helps to enhance and develop the learner's abilities to do their works and giving learners the opportunity to reflect on their work [5].

Reflection allows learners to see how solutions can be used as a "tools" applicable to a number of different contexts. Critics believe it can leave the learner with a restricted view of wider course contexts, while the lack of face-to-face contact leads to lower attendance rates. However, several combinations were suggested to help to emulate the traditional learning methods [6].

Recently, learners are interesting in the collaborative learning applications that helps to lead learner begins to develop related concepts and take greater control of their own learning based on adopting a valid recourses to deduce and capitalize along with the learners' personal educational strategies that also provide a potential pathways and increased autonomy, whilst providing support materials [7].

The promotion of learner autonomy can be further improved by incorporating a wide range of engaging resources and support mechanisms which often linked to the WWW, and by helping to guide the learning experience.

Hence, developers have to look into useful ways to come out with appropriate learning applications. Learning management system is widely used into supporting the functional process of these learning applications by assuming a manager role, teachers encourage learners to look critically at their own work and discuss their progress with their peers.

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2 CURRENT LEARNING ISSUE

Currently, the using of knowledge technology in various educational environments has brought different concepts for the learning representation. However, most of these environments unable to provide learners with the appropriate knowledge representation based on their profile, which consisted just on providing them with the usual course materials. Moreover, the current system lacks to generate the learners performance towards the using of the learning recourse, which provides a certain functions for tracking the learner performance.

The process of the existing learning system is not managed well to present and track the learner profile details which addressed an existing problem towards its ability. It encounters several problems pertaining to checking learner's profiles. There are plenty of them but the two issues stand out. The first is that the course material used in e-learning sometimes is unattractive and non-compelling. Secondly, is the lacks to track and represent the learner profile details based on his/her course.

Srimathi and Srivatsa in [8] highlight the importance for an advance application to retrieve and present the knowledge components based on the user behavior towards the using of these contents.

Moreover, there are many criteria that should be considered while evaluating the current learning systems. The two most important criteria for evaluating application and quality in e-learning are that it should function technically without problems across all users and have clearly explicit pedagogical design principles appropriate to learner type, needs and context.
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3 ARCHITECTURE

The scope of this research is to design and develop virtual learning environments based on learner's profile that will have different functions. Moreover, the proposed system will enable the learners to share and store their favorite learning web links based on XML and Resource Description Framework (RDF) classification in Meta data storing. The proposed system was designed based on the learners requirements, and was developed using PHP and MYSQL database.
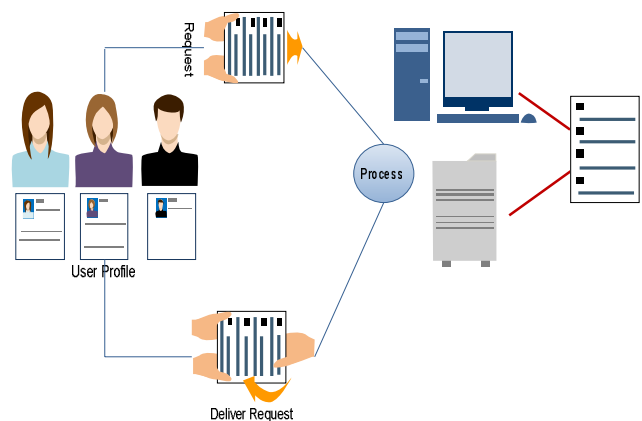
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Fig 1: The Learning Environment Process

4 SYSTEM DESIGN

Prototyping of e-learning system is a physical model or sample end product that users can see, modify and use. The purpose is to capture the essentials data of a later system.
This phase presents the design phase based on the modified Research Design Methodology by Vaishnavi and Kuechler [9]. Moreover, prototype might be concerned with determining the efficacy of a particular language, a database management system or a communications infrastructure. Object oriented approach was implemented during the design phase of the system based use case diagram. Figure 2 show us the Activity Diagram for the Virtual Environment based Profile System.

Hence, we are proposing a virtual learning environment based on learners knowledge or profile for providing those learners with the ability to save and browse the desire web pages and save their interesting materials based on RDF classification.

Furthermore, the propose system will presents the users' learning system based on his/her knowledge or level (Profile) by providing some options for identifying the learners' level and knowledge, and present his/her learning materials based on RDF and XML classification for a certain course. The system expects to simplify the users learning by:

- Providing collaborative virtual environments with the learning materials based on learners profile.
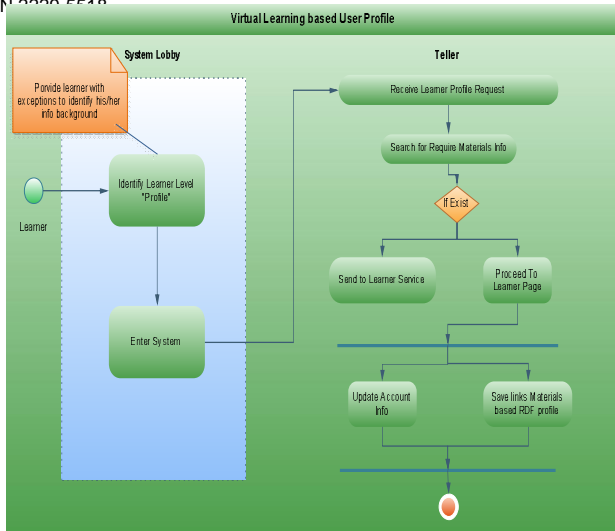- Obtaining storing and sharing the learning web links based XML and RDF classification.

Fig 2: Activity Diagram for the Virtual Environment based Profile System

Fig 3: The System Use Case Diagram

5 THE OUTCOMES

The proposed collaborative system based learners profile reported the main system users such as administrator, lecturers and learners are shown in Figure 3. The system administrator should be able to manage the main system functionality such as users, courses, and classes. Meanwhile, performing these functionalities require the system users to login through their username and password. The lecturers could be able to view his/her addenda, add course details, and add test to the learners. Lecturer also require to login through his username and password. Learners may concern on viewing the course details that has been filed by the lecturers.
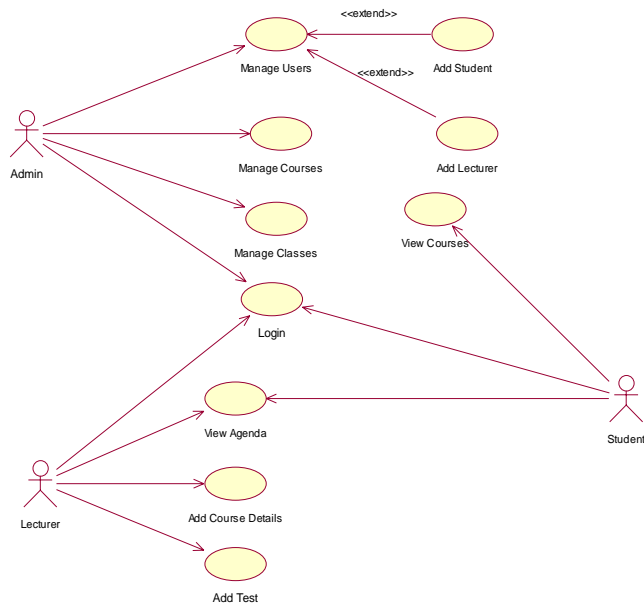

6 CONCLUSION

The problems illustrated the appropriate solution among the requirements gathered was considered these problems in term of the existing systems. The current learning system unable to obtain the complete services and other learning activities for users based on their profiles.

The virtual learning system for the learners based on their profiles was successfully developed using Preprocessor Hypertext language for the programming part (PHP). Meanwhile, MYSQL and flash editor were also used to build the database relationships and GUI.

The proposed virtual learning system may helps users to obtain more activities by putting in account the following points:

- Generate the learning behavior of learners while he/she precede learning.
- Provides direct, simple access to the focused valuable content via few uploaded materials that he or she need to brows or download in order for learning.
- Reduces the amount of vertical scrolling during the representing.

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