

## The Design of Decision Support System to Improve E-Learning Environments

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**Abstract**— E-Learning is a new topic in education environments and gradually has found its proper place in the recent training methods. But due to the fact that, there is no face to face contact between the teachers and students in e-learning systems, neither the teachers nor the students in the course are aware of each other's behavior, so in these types of systems, the need of feedback between the students and the professors is felt, this will help improve the teaching and learning process. Although most of these systems can offer a reporting tool" the teachers, in general, cannot provide a clear view about the status of their students. In this paper we investigate efficient query search, as well as global issues, with the aim of solving this problem with a new approach in the design of decision support systems, a system which would enable teachers to answer questions like these in order to understand students' academic achievement using data mining techniques based on the data in the database management system for educational content. Finally, the paper concludes and suggests that teachers of these courses do not require the learning and data mining techniques, but only a model or models are needed to interpret the results of teachers and other educational activities that are essential to help.

**Keywords**—Data Mining; Web Mining; Data ware house; ELearning; Distance Education.

### I. INTRODUCTION

Nowadays the role of information technology in various areas of discussion and education is not hidden to anyone and education also has undergone many changes [2]. Online education is almost e-learning or virtual. In distance learning through the Internet, the trainer and the learner are away from each other and their communication is based on internet [3]. E-learning or web-based-learning Improve the learning process by combining education and technology [1]. Usually e-learning centers, platforms of e-learning like as learning content management systems (LCMS), intelligent tutoring systems, and other systems to support Web-based intelligent e-learning process can be used. Recently, much has been said or written about the guidance electronic training and most teachers also pursue issues such as these courses to increase pass rate of their students[5]. But even if the courses are well designed and well planned, again, there is the possibility of non-compliance with the appropriate learning styles[10] or they may feel that they are being watched or on the other hand they may feel that in cyberspaces they are far enough from the attention of professors and they may conceal this deficiency, therefore, there is the need to have high motivation[6]. Unfortunately, teachers have very few tools to

monitor and track students' activities in a specific platform for analyzing and solving problems. This report presents some of the tools that are generally raw data (such as n of available time spent in training, n percent message, reading, etc.) As a result, the teachers can not have a clear vision about the improvements or achievements of their academic departments and in fact, teachers would be wasting your time [8]. In such circumstances a decision support system is used for operation community education. Because such systems are to define and measure tendency to key performance indicators (KPI) and finally to provide the right time. Before tools such as (MA TEP) [21] for monitoring and analyzing students' behavior in e-learning platform has been developed. These tools specifically for (WebCT) 4.0 are made(that now known as blackboard) these tools of the data recorded in a data base which consists of very large databases Learning Content Management System and uses relevant records.(MA TEP) allows teachers to understand useful and continuous information by simple and useful means to obtain static and dynamic reports and create reports from the data in large queries, therefore a database is created directly and help the creation of reports by providing multidimensional online analytical processing. With such reports professors become aware of progress of their students

in the virtual course, and they can compare their mean activities with other students activities and so they can find the way in which students can be taught better. They can also click on the name of each student with all the information on the academic record he/she has gained and plan accordingly. But aside from these privileges, in this system, teachers never know the answer of questions such as the following questions:

- a) The student identification numbers and information exchange between them.
- b) Grouping students according to their learning styles.

## II. METHODOLOGY

The proposed systems with this aim that they are also useful and general, for e-learning platform has been designed based on the structure of the module. This is at least the following cases:

I. Reading and e-learning platform for collecting data pre-processing tasks and is related to the use of data mining algorithms and stored in the data warehouse database is including Extract, transform, load (ETL) processes, and field data collection).

II. The module has developed a data mining algorithm (Data mining module).

III. Module of user-friendly, it tends to the results of the analysis.

### MERITS

- User friendly.
- Avoid the time delay for verification.
- Updates are recorded and can be accessed later.
- Provide security for article

Relevant details should be given including experimental design and the technique (s) used along with appropriate statistical methods used clearly along with the year of experimentation (field and laboratory).

## III. CONCLUSION AND FUTURE SCOPE

Today, science and human achievements acceleration has developed increasingly that we can add the intelligence in elearning platform. In this paper, we propose a decision support system which helps teachers of the electronic remote display to monitor their students, who they are, and how they work and how they use the curriculum. Also they understand where difficulties are and consequently they can deal with, any potential problems in near future with the suggestions of professors who reorganize pages with content and resolve problems by adding new information and open discussion. Also they can address a number of questions that may be of interest to staff training and how to respond to the development of learning and teaching is very useful. These answers can be achieved by using data mining techniques.

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