

A Study On E-Learning by Applying Data Mining Techniques

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Abstract: Now a days these are many E-Resources to learn. By using this resources E-Learning is very effective learning things in present days. The Data Mining applications are powerful tools in various domains. By applying these Data mining applications on E-Learning system, it is a good idea to improve the capabilities of E-Learning system. The main advantage of Data mining and E-Learning interaction it is very useful to learn many advanced technologies very easy by using plying Data mining technologies very easily by using applying Data mining technologies to E-Learning System.

Keywords: EDM, KDD, E-Learning, Educational Data, Online courses

I. INTRODUCTION

Data Mining is the meaning of extracting or “Mining” knowledge from large amount of Data[1]. Data mining is also called very popular term Knowledge Discovery Database or KDD. Data mining is the search for the relationships and global patterns that exists in large databases but are hidden among vast amounts of data. In the Data mining process the data collected from different applications for extracting knowledge from large data repositories and from this data, applying various techniques of Data mining to discover useful information. The main functions of Data mining are applying various methods and algorithms in order to discover and extract patterns stored data[3].Data mining is the process which provides a concept to attract attention of users due to highly availability of huge amount of data and need to convert such data into useful information’s.[4].

II. DATAMINIG APPLICATION AREAS

The Data mining applications are applied to various areas like:

- 1) Scientific Data
- 2) Educational Data
- 3) Engineering Data
- 4) Healthcare Data
- 5) Sensor Data
- 6) Web Data
- 7) Banking Data

III. EDUCATIONAL DATAMINING

Educational Data mining is the on of the main area to applying Data mining techniques. To apply Data mining techniques to Educational data, it is used for understanding how students learn[5]. The goals of Education data mining research predicting students performance and tries to improve their performance. Educational Data mining is key area in mining students performance and helpful in predicting educational institutions performance taking parameters like teaching skills, course content, infrastructure etc.

IV. LITERATURE SURVEY

E-learning is a very effective learning thing in present days. The Data mining applications are powerful tools in various domains. By applying these Data mining applications on e-learning system, it is a good idea to improve the capabilities of E-learning system. E-learning as a training delivered on a digital device such as a smart phone or a laptop that is designed to support individual learning or achieve organizational goals. They refer to self study and similar supplementary systems as a asynchronous e-learning and those with instructor led learning as synchronous e-learning [6].

Now a days the society is going fast towards online learning ,so we can see a lot of open universities that provide course s online through internet.[7]., Now we can observe lots of advertisements for online professional certificates, so

one can study and take the exam and get certified without the previous hassle of attending classes, travelling whenever and wherever he/she wants. Managing and tracking students, courses, degrees, grades, certificates, universities and learning providers require a massive content management system to manage, track and control the whole system with all possible implication and complications. Every organization would look at e-learning information from different angles according to the mission, vision and objectives of the organization and whether it looks for profit or other national objectives.

For competitive examinations some organizations provide online test series, they are very useful to test their preparation levels and these organizations also provide online courses. They are very much useful to learn those who are not going to classroom courses. E-education is the term to denote ICT methods and resources that supplement the traditional teaching process and resources. They emphasize that the term e-learning denotes a two-way interactive learning process involving a teacher and student using digital media. The teaching process is student-oriented leading to pro-active learning by the student and requiring quality online co-operation between the student and the teacher.

Educational technology is not restricted to high technology. Nonetheless, electronic educational technology, also called **e-learning**, has become an important part of society today, comprising an extensive array of digitization approaches, components and delivery methods. For example, m-learning *emphasizes* mobility, but is otherwise indistinguishable *in principle* from educational technology.

Educational technology includes numerous types of media that deliver text, audio, images, animation, and streaming video, and includes technology applications and processes such as audio or video tape, satellite TV, CD-ROM, and computer-based learning, as well as local intranet/extranet and web-based learning. Information and communication systems, whether free-standing or based on either local networks or the Internet in networked learning, underlie many e-learning processes.

Theoretical perspectives and scientific testing influence instructional design. The application of theories of

human behavior to educational technology derives input from instructional theory, learning theory, educational psychology, media psychology and human performance technology.

Educational technology and e-learning can occur in or out of the classroom. It can be self-paced, asynchronous learning or may be instructor-led, synchronous learning. It is suited to distance learning and in conjunction with face-to-face teaching, which is termed blended learning. Educational technology is used by learners and educators in homes, schools (both K-12 and higher education), businesses, and other settings.



Teaching and learning online

V.VARIOUS DATA MINING METHODS USED IN E-LEARNING

Educational Data mining methods drawn from a variety of areas such as statistics, Data modeling, information visualization, Machine learning and psychometrics[6]. EDM focused on statistics and visualization. EDM method provides an alternative view of the overall objectives and bring in two additional categories-Distillation of data for Human judgment and discovery with models which are not in the traditional DM category. The use of models for information discovery has become increasingly popular as a technique in EDM research and is used to support sophisticated analysis[6].

In the E-learning domain ,we are interested in managing mainly two groups of users: the learners as well as the learning providers[7]., whether private training companies, governmental, organizations and local authorities providing training for their employees or universities who aim to publish their courses and make them accessible online via the internet. As for learners, databases should store all personal details including name, age, gender, address, post code and educational relevant details such as qualifications. Moreover having information like work experience, career objectives, income range, previous courses taken and course of interest would be a great value to be able future behavior of different classes of employed professional people. Also other information such as personnel interests and hobbies would be very valuable for data mining tool in order to discover hidden patterns by building intelligent models based on the huge amount of data.

Data mining that has been pre-dominantly used in E-commerce and for business applications is considered as a suitable candidate to fit into the domain of E-learning for one main reason i.e., E-learning similar to E-commerce is a large and growing business. Data mining techniques can potentially help identify the patterns that may be profitable to the E-learning business.

However, there are some critical differences in applying data mining to the E-commerce and e-learning .domains

- 1) Guiding students in their learning is the main purpose of e-learning unlike in e-commerce where the purpose is to guide the clients to purchase goods.
- 2) While increasing profits that can be quantified is the objective in e-commerce, in e-learning, improving the learning experience of students is the objective which is subjective.

VI.CONCLUSION

Education Data mining applications with in e-learning system is a rapidly growing phenomenon. Applying Educational Data mining techniques in e-learning research focused on solving e-learning problems. This concepts particularly interesting on predicting students performance and usefulness in E-learning systems. Mining online learning events is becoming a promising area of research and development, particularly in education is growing impressively. There are plans to use a statistical package

versus data mining tool on an e-learning database to show the impressive accurate real time result of the data mining tools.

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