Abstract

Learning is a lifelong process and can be informal, formal or non-formal. For both educator and educand the age of technology has opened up new opportunities such as e-Learning, blended learning and m-Learning in the field of education. There is conscious ongoing effort to develop better & more effective Learning Management Systems (LMSs) and Content Management Systems (CMSs). Inspiration behind such efforts is the notion of social learning. Social learning is probably the most useful form of learning today in the modern networking based life and scenario. However, to truly enable social learning, issues on both technical & societal level need to be addressed. In the realm of technology issues, some of the prominent ones are access to technology, understanding of technology and making technology inclusive; whereas, equality, opportunity & accessibility are some of the many societal issues. This thesis aims to provide analysis on both grounds, increase the resolution of the problem and also outline changes to be implemented on both levels.

Indira Gandhi National Open University (IGNOU) was established in 1985. The university imparts education under open and distance mode to learners who desire to pursue higher education through other than conventional university system. Such learners include women, poor, backward communities, employed, resident of remote areas, diseased and disabled. In order to provide an insight into societal issues holding back inclusive learning, we analysed student enrolment data of IGNOU. In this study, the major focus is on disabled students of IGNOU who enrolled in various programs in 2009. Statistical analysis and Educational Data Mining (EDM) has been performed on this data to show certain problems and trends. A new method has been used for Attribute Selection based on IGNOU’s mandate. For the purpose of analysis, we used state-of-art technology the Decision Tree (DT) developed using Iterative Dichotomiser 3 (ID3). It demonstrated that region is the key factor
in determining groups for collaboration & projects, within the confines of this data set. This case study can be called as start of a Peer Recommender System (PRS).

The data analysis conducted on the data sets via statistical analysis & a case study using ID3, shows various divides in population based on societal factors such as region, gender, generation, access to technology, employment etc. For example, a digital divide is also observed based on student’s access to technology such as email. Based on this data analysis, a better data collection methodology has been proposed. Additionally, further steps for development of software to mitigate learning problems of disabled students have been proposed. The suggested steps include a three pronged approach of 1) creating a mobile application program (app) called DialAT as a one stop information portal and shop for disabled students 2) using Adaptive Educational Hypermedia (AEH) to create friendlier interface and menus for disabled students and 3) using modified pedagogy or teaching methods for special education of disabled students.

In conclusion, the efforts made in this study are clearly outlined in the form of societal and technological changes that can be made to education programs to make them more favourable for differently abled students.