

ABSTRACT



In the traditional education realm, the role of the teacher is to provide the content and information to the students. The information or content that is presented in the classroom is based on the curriculum. In the past few decades, educators have used various types of instructional technologies for delivery of instruction to their students. Radio, film, television and video are the instructional media, which were most often used. However, the uses of these media has not made any significant change in the instructional communication strategies and produce the results desired by the educators. In the recent years, the advent of multimedia, Information and Communication Technology (ICT) have rapidly transformed the scenario in using the instructional technologies in the educational institutions particularly in higher education. The fusion of technology and educational content has an important bearing on instructional methodology.

The first chapter of this thesis highlights the description of traditional education in India which was imparted orally by sages and scholars. The information was passed on, from one generation to the next orally. After the development of languages, the system of education took the form of writing, using palm leaves. Later temples and community centers performed the role of schools. .

The second chapter of this thesis highlights the classical mode of teaching. The oral communication was the earlier method. It was the questions, orally by the teacher and the feedback by the student formed the system of education. Then written communication, improved the system of

education. The learning method were shifted from the teacher, to the online learning environment by the innovative ICT revolution through the Media, Internet and Web thus resulted in the online learning towards learner centric environment. The Web 2.0 enhanced the interaction between the people. The tools which are available in the Web 2.0 like Wikis, Blogs, Personalization, streaming media, the audio and the video formats are access to open source and open content. The teaching and learning component through the above tools and techniques, improved the educational environment through Web 2.0 which helped, in managing, organizing and repurposing the information and knowledge. Learning Management Systems integrates the geographically dispersed students. To spell more connectivity Personal Learning Environment (PLE) provides contextually appropriate tools which is an approach and not an application. Further improvement was through (ICT) i.e. Information & Communication Technology to access, create, share and continuously improve the ideas of learning. Later, "participation" was thought of, through social software tools. The students were capable of taking control of their own learning. They were capable of developing, creating novel ideas, concepts and knowledge. In order to overcome the limitations, the present system is thought of, for affordability and potential connectivity. Pedagogy offers wide choices to the individuals to suit their personal needs. It is based on the teacher, student, communities, content, communication, process learning & resources, social interaction, peers, personalization, students and technology. There are number of social software's. The pedagogy refers to the teaching strategies, techniques and approaches. There are social constructivist principles that apply to Pedagogy 2.0. Social activities are crucial in daily life and people live in various communities. When they encounter problems they turn to the others. With the advent of Computer-Mediated Communication (CMC), the computers are connected world wide. Activities become more convenient and flexible. The Computer Supported Collaborative Learning (CSCL) which is a comfortable space,

where the learners share information among themselves. Social Interaction is possible and affordable through Pedagogy 2.0 for connectivity, communication, participation and development. Social interaction is a learning opportunity to gauge, as to how much and under what conditions we can trust others. Through social software's, the learners can choose the tools as per their goals. Thus by giving the control to the learners, one can improve learning effectively. The pod casting technology and software tools allow broadcasting of audio files. By publishing and presenting the work to the wide audience, the learner's benefit. The principles underlying in Pedagogy 2.0 is the collaborative production, facility of sharing and publishing the artifacts produced. Collaboration and cooperation are ingredients of effective pedagogy. The primary goal of learning is the learners should learn and arm themselves with the decision making. It is the social networking sites which helps the learner by engaging, to explore and develop facets of their identity and offer the ability to shape them.

The third part of this thesis gives the description about the detailed processes adopted in developing an intranet learning system known as "KnowledgeNET". However, for practical purpose, it is proposed to indicate the detailed process for a particular course in the Computer Applications department that could act, as a supplement to the traditional teaching and learning methods.

The fourth part of this thesis proposes an intranet learning system to the semantic Web-based learning system application with the use of semantic Web technologies. We propose a model of Agent based e-education & course Authoring System and Packaging using SCORM. The purpose of this model is that the content can be reused, organized and enhanced to SCORM content. It can be used in different operating systems and environments. It can be used in libraries as learning objects which can be assembled at any point of time,

based on the student's feedback using agent methodologies. We propose a methodology of (Agent Based E-Education & Course Based Authoring System and Packaging using Scorm for Students Environment) based On Java Agent Development Framework (JADE) which is a software framework. In future it has to be implemented in Java language. It simplifies the deployment of multi-agent systems and technology through a middleware that comply the FIPA specifications and through a set of tools that support the debugging and deployment phases.

The fifth part of this thesis highlights the various opportunities for using the technology to implement the paperless classroom. The use of the technology is to enhance a better display of information, access to information, improve information sharing, retrieval and organize better class room presentation. KnowledgeNET learning system is developed as a supplement to traditional teaching and learning methods. It has its own limitations. The existing learning system is enhanced by applying semantic web technology. Agents use JADE framework, Inference Mechanism and SCORM functionality so that the learning system and content meets adaptability, accessibility and interoperability.