Chapter 2

Study of Learning styles & e-Learning

Learning is overall process where a human absorbs information, memorizes and processes it for further use and processing. There are many things and skills that we learn unconsciously or without further thinking for example riding a bike. But there are also lots of things that we learn consciously and use different strategies to learn it.

There is no right way to learn in a specific situation. Everyone has his/her own style on learning on case to case basis, which can also vary from one situation to another. Because of the variety of learning theories and styles, one can choose flexibly different strategies and styles in situations so as to use the most efficient one. The better one is aware of his own learning style, the better he can use them to his advantage in learning.

2.1 Introduction to learning styles

Learning styles are generally based on the research results of cognitive psychology about processing information, active learning and the structure of information. The learners prefer intuitively some forms of information and a specific way of action over others when reaching quality learning.

Normally, learning styles are not strict and do not outline each other. It means that a person might prefer some learning style over others but also use aspects of other styles for a particular case. The learners possess several learning styles and can mix them together to obtain the most suitable combination for each learning event. Coffield, Moseley, Hall and Ecclestone (2004) list 71 different learning styles in their review on Learning style and pedagogy in post-16 learning. [13][32] 60 of the styles have their own measurement tool. Coffield et al. divided learning styles in five groups:

- Genetic and other constitutionally based learning styles and preferences including the four modalities Visual-Auditory-Kinesthetic-Tactile (VAKT)
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- Cognitive structure
- Stable personality type
- Flexibly stable learning preferences
- Learning approaches and strategies

Coffield's review examined 13 learning style models where each model was examined for evidence, provided by independent researchers, that the instrument could demonstrate both internal consistency and test-retest reliability and construct and predictive validity which are the minimum standards for any instrument which is to be used to redesign pedagogy. Only three of the models: Allison and Hayes, Apter, and Vermunt came close to meeting these criteria. Entwistle, Herrmann and Myers-Briggs met two of the four criteria. The Jackson model is so new that no independent evaluations have been carried out so far. The remaining six models failed to meet the criteria. The review led to the conclusion that they are not all alike nor of equal worth and it matters fundamentally which instrument is chosen. [12][14]

2.2 Learning style models

2.2.1 VAK learning style model

There are many different kinds of learning style models based on different aspects. In this thesis four of them will be discussed. One model concentrates on human observation channels; vision, hearing and feeling. It is called the Visual-Auditory-Kinesthetic (VAK) model. Probably the most well known model is the Kolb's learning style model. The Honey and Mumford's learning style model and The Felder-Silverman model are also briefly introduced.

The observation channel model or in other words the Visual-Auditory-Kinesthetic (VAK) model bases on the basic observation channels of human. The learning styles are divided into four categories; visual (verbal), visual (non-verbal), auditory and kinesthetic. Sometimes the word tactile is connected to the kinesthetic category changing the model name into Visual-Auditory-Kinesthetic-Tactile (VAKT). The VAK model is not a learning style in a way that the other learning style models are. It is not developed by any specific person or persons. [15]

Learners with visual learning style learn best using their eye sight. Seeing and reading are described to be important for visual learners. For example pictures, Tables, demonstrations,
handouts, and mind maps are very useful for them. Especially lecture notes, textbooks and other written text is the most useful way of learning. It is easy to add those things in the learning environment and therefore it is easy to visually learning students to use and study in virtual environment.

The students who learn best through hearing (aurally) can find virtual learning useful if there are video clips, virtual lectures, and video conferences because listening and speaking are important for auditory learners. The clips can also be easily added to the environment. The learners with auditory learning style like to hear detailed directions. They learn things one at a time. Auditory learners benefit from listening to lectures and participating in discussions.

Kinesthetic learners learn best through feeling and experimenting. They prefer laboratory sessions or field trips over classroom lectures. These learners like to be involved with physical experiences; touching, feeling, holding, doing, and practical hands-on experiences. Therefore the virtual learning environment brings a lot of challenge to their learning. In the learning process some kind of virtual models can be useful for them where one can see how things work.

**VAK learning styles in e-learning**

<table>
<thead>
<tr>
<th>Prefers in learning</th>
<th>Recommended e-learning activity</th>
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</thead>
<tbody>
<tr>
<td>Visual, verbal</td>
<td>Text</td>
</tr>
<tr>
<td>Visual, non-verbal</td>
<td>Graphics, Tables</td>
</tr>
<tr>
<td>Auditory</td>
<td>Sound</td>
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<tr>
<td>Kinesthetic</td>
<td>Practical related things</td>
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</tbody>
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**2.2.2 Kolb's learning style model**

David Kolb developed his learning style model over years basing it on the research on many others, for example Rogers, Jung, and Piaget. He published it in a book 'Experiential Learning: Experience As The Source Of Learning And Development' in
1984. Kolb's experiential learning theory (ELT), and Kolb's learning styles inventory (LSI). [16]

Kolb’s learning theory includes four different learning styles, which are based on a four-stage learning cycle. The learning cycle stages are:

- Concrete Experience (CE) - feeling
- Reflective Observation (RO) - watching
- Abstract Conceptualization (AC) - thinking
- Active Experimentation (AE) - doing

Kolb says that concrete experiences lead to observations and reflections. These reflections are absorbed and translated into abstract concepts with implications for action, which a person can actively test and experiment. This enables creation of new experiences and starts a new cycle.

Ideally this process represents a learning cycle where all the bases on learning; experiencing, reflecting, thinking and acting are treated. (Businessballs) The learning styles definitions are representations of the combination of two preferred styles (see the abbreviations after the cycle stages):

- Diverging (CE/RO)
- Assimilating (AC/RO)
- Converging (AC/AE)
- Accommodating (CE/AE) (Businessballs)

### 2.2.3 Honey and Mumford's learning style model

A learning style model developed by Honey and Mumford in 1982 is based on Kolb's work but is somewhat different. [17][32] It includes four key stages of learning styles:

- Activist
- Reflector
- Theorist and
- Pragmatist.

They are often presented as the Kolb's learning styles although they differ a little. Activists enjoy new ideas and tasks and like to be very active in the learning process. Activists learn best when they are involved in new experiences, problems and opportunities. They like to work in groups, work with tasks and educational games.
Listening to lectures or reading and writing on their own, hinder the activists learning. They don't like to follow precise instruction or strict schedules. (Campaign For Learning 2006)

Reflectors are more drawn back than the activist. They prefer standing aside and think what is happening. They learn best by observing someone else, collecting information about it and going through what was learned. They like to produce analyses and reports. Reflectors don't like to be leaders or do things unprepared and with tight deadlines.

Theorists prefer analytical and rational thinking over subjectivity and emotions. They like complex problems where they can use their skills and knowledge. Structured situations, interesting ideas and concepts are things which theorists like in the learning process. Theorists learn less in situations where emotions are emphasized or activity is unstructured or briefing is poor.

Pragmatists are the ones who prefer hands on doing over theory. They like that learning tasks are related to their present or future job. Pragmatists are down-to-earth who learn less when there is no benefit to achieve or no guidelines to do the job.

The Honey and Mumford learning style stages and the Kolb's learning styles are very similar. Here is correspondence between them:

- Activist = Accommodating
- Reflector = Diverging
- Theorist = Assimilating
- Pragmatist = Converging

Website organization according to Kolb's model
In the website of University of Minnesota innovative teaching is a list of how to organize a website according to Kolb's learning styles model. The website should provide resources that cater to all four modes for the various units, such as: practicum guides/practical links for help with practicum, flash concept maps, lecture notes, practice quizzes that provide feedback, links to video clips, discussion board with reflective questions, some of which can be optional. The website should also include assignments such as:
• Active planning and creating such as projects and lesson plans.
• Optional ones could be posted on the Discussion Board for discussion and sharing of ideas. Maybe offer extra credit for high quality projects.
• Watching activities such as video clips and personal stories.
• Thinking activities such as readings and accompanying questions (like a reading guide).
• Feeling activities such as discussion board topics that involve reacting to an experience. (Morris 2006)

There should also be a link on the main page that will bring students to a learning styles course organization page. On this page, the course resources are organized based on the modes. The resources are listed with different colored links based on the modes that they use. The students are asked to reflect on their different assignments in the discussion board:
• How can this assignment help me to construct knowledge?
• How might an assignment like this help my future students?
• On what kind of learner is this assignment the most supportive?
• How can this assignment help me to practice different ways of learning? (Morris 2006)

This kind of website organization could help the students with different learning styles to study more effectively because learning objects suiting their learning styles are available. The students can find the resources according to their learning style easier and quicker.

2.2.4 Felder-Silverman model

The Felder-Silverman learning style model (FSLSM) was created by Richard Felder and Linda Silverman in 1988. It focuses on aspects of learning styles on engineering students. [18] The model had five dimensions in the original version but was changed to four when one dimension was deleted. The learning style dimensions according to Felder are:
• sensory/intuitive
• visual/verbal
• active/reflective
• sequential/global.
Sensory learners like learning facts and solving problems with known methods while intuitives prefer discovering possibilities. Active learners like to try things out or do something active. Reflective learners prefer thinking about things on their own. Sequential learners learn in small steps when global learners understand things in large steps.

2.3 Learning styles in e-learning

Manochehr (2006) has made a study where he compared "the effects on e-learning versus those on traditional instructor-based learning, on student learning, based on students learning styles". The result was that the learning style in traditional learning was irrelevant but in e-learning it was very important. The study showed that learners with an assimilating or converging learning style achieved better learning results in e-learning. [19][51]

Graf and Kinshuk (2006) studied students' behavior in online courses in 2006. The behavior was studied according to learning style preferences. The FSLSM was also used in this study. The reflective learners spent more time on examples and dealing more intensively with outlines than active learners. [20][38] Active learners performed better on questions dealing with facts. This is a point that is not supported by the FSLSM. Therefore no significant information can be provided for active and reflective learning styles. The sensing learners visit more often learning material examples and spend more time answering tests and revising them as the intuitive learners. Sequential learners tend to start at the beginning of each chapter where global learners tend to skip learning objects and visit the course overview page more often.

Figure 2.1 is about styles in learning environment from learner's point of view. At first the learner performs a learning style test and gets an answer which tells what observation channels learners prefers to use in learning and what kind of learner one is. If a learner disagrees with the results, he/she can read the test. According to the result the learner can choose the most suitable learning objects and activities from the learning environment. The teacher should provide enough different learning materials in the e-learning environment so that all students are satisfied. The different learning styles should be taken into account also when making exercise works and exams. In an exam there could be for example possibilities to form answers as figures and diagrams.
The Felder-Silverman model was used and the information from students was gathered with the ILS. It was found that visual students had difficulties in processing textual answers. So, the learning environment should propose not only visual activities but also ways for students to create solutions graphically. When other dimensions of learning styles are taken into account the results differ. For example visual/active students gave answers most likely graphically but visual/reflective students in text. This means that the environment should be adaptable including problem solving activities, recorded lectures and discussions. For sequential students the learning environment is easier because information is presented in logical order. The global learners must be taken into account in the environment so that it provides a grand picture or goal of a topic or problem. Sensory learners presented weak abstraction capacity which means that the environment should include a higher diversity of examples and data. The materials presented and used in activities should be a blend of concrete information and abstract concepts.

2.4 Criticism on learning styles

Much study has been addressed to learning styles but still the field over the subject is not clear. Many controversies rise from the fact that there are so many different learning styles. Each style deals with a different aspect on learning but there isn't a style which incorporates all. Coffield et al. (2004) reviews that "the research field of learning styles needs independent, critical, longitudinal and large-scale studies with experimental and
control groups to test the claims for pedagogy made by the test developers." (Coffield et al. 2004) [14]

One issue of criticism is that the most popular recommendation is that students' learning styles should be "matched" to their tutor. This "matching hypothesis" means that students' learning style should be similar to the instructional style. (Coffield et al. 2004) [14][37] Smith, Sekar and Townsend researched this area and found that for each research study supporting the matching hypothesis there is a study rejecting it (Smith 2002). Another point of criticism is the assessment tools of learning styles. The learning style questionnaires are based on several assumptions, the students are motivated to answer them properly and that the students are aware of their preferred way of learning. Also social and psychological aspects can influence students' answers. (Graf 2007) [20][21][37-38]

The assumption of stability of learning styles is still a controversial issue. Questionnaires themselves raise issues for example that they should fulfill four criteria: construct validity, predictive validity, internal consistency reliability, and test-retest reliability. Construct validity refers to that the instrument measures the theoretical construct that it claims to measure. Predictive validity means that whether the range of behaviour can be seen to have an impact on task performance. The internal consistency reliability means that the homogeneity of the items is intended to measure the same quantity that is the extent to which responses to the items are correlated. The test-retest reliability measures the extent to which an individual achieves the same result when performing the questionnaire twice within a specific period. Coffield's study showed that only three of the 13 learning styles studied came close to these standards. The people who are using these learning questionnaires should be aware of their limitations when interpreting the results. [14][38-39]

2.5 History & Background of e-learning

E-learning systems have several names which basically mean the same: Virtual Learning Environment (VLE), Learning Management System (LMS), Course Management System (CMS), Learning Content Management System (LCMS), Managed Learning Environment (MLE), Learning Support System (LSS) and Learning Platform (LP). In
Europe the term VLE is mostly used, but in united States the term CMS is favored over others.

The research project which is the basis for this thesis has become possible because many advances has been made in the field of technology-aided learning and in the basic technology itself, which are the Personal Computer, its multimedial capabilities, network technologies and last but not least, the Internet. The Institute of Information Processing and Computer supported new Media (IICM), where this project has been carried out, has been doing many successful and historical contributions to science, especially in the fields of technology based learning and multimedial information systems. The following subsections try to distinguish the history of e-Learning into different periods and give a short introduction to them.

2.5.1 The Instructor-Led Training Era (Early -1985)

Before computers were widely available, instructor-led training (ILT) was the primary training method. ILT allowed students to get away from the office to focus on their studies and to interact with their instructor and classmates. However, ILT usually incurred high costs and downtime during office hours, leading training providers to search for a better way to conduct training sessions.

Early distance education systems were based on books, cassette tapes or records. Later on, they were replaced or complemented by video cassettes or TV-based courses.

2.5.2 The Multimedia Era (1985-1995)

Windows 3.1, Macintosh, CD-ROMs, Power point. These were the technological advancements of the Multimedia era. In an attempt to make training more transportable and visually engaging, computer based training (CBT) courses were delivered via CD-ROM. The anytime, anywhere availability of CD-ROMs also provided time and cost savings that instructor-led training couldn’t, and helped reshaped the training industry. Despite these benefits, CD-ROM courses lacked instructor interaction and dynamic presentations, making the experience slower and less engaging for students.

The first versions of computer based online trainings had already been started in the mid 80’s: At the IICM, the Mupid (Multipurpose Universal Programmable Intelligent Decoder). The Mupid was an intelligent computer terminal with a dial-up connection to a server hosted by the national telecommunication and postal services company which provided
access to numerous databases, services, games, communities and also downloadable applications. The Bildschirmtext can be seen as a predecessor of the Internet on a small scale. At the same time, the Mupid was also a high resolution color computer based on the Zilog Z80 processor, which could be also used offline due to its support for diskette drives. More than 800 interactive Costoc (Computer Supported Teaching of Computer Science) courses have been created and offered to interested students. These courses already included color graphics, animations and question/answer dialogs. Many experiences have been made while producing and using these courses, which became a good basis for ongoing research in the field of e-learning later on.

2.5.3 The Web Infancy (1995-2000)

One of the cornerstones of today’s Internet is definitely the first graphical Web browser called Mosaic from NCSA Error! Reference source not found., its ease of use, and pleasing look and feel, it immediately convinced most PC users to use the Internet. From then on, the Internet became a network for the broad masses of people; it wasn’t just restricted to knowledgeable scientists and experts anymore.

As the Web evolved, training providers began exploring how this new technology could improve training. The advent of e-mail, Web browsers, HTML, media players, low-fidelity streamed audio/video, and simple Java applets and applications began to change the face of multimedia training. Basic mentoring via e-mail, intranet CBTs with text and simple graphics, and Web-based training with low-quality intermittent-delivery Web casts emerged.

During this period, the IICM focused (among other things) on two aspects of e-Learning: Authoring and platforms. On the Authoring side, HM-card, a function-rich e-Learning content creation system with offline authoring and offline and online runtime environment was created in 1994, which has been continuously extended.[34-36]

In 1996, a new concept for a learning environment called LATE (Learning And Teaching Environment, was developed. It was later improved to become MANKIND (Multimedia Applied to Networked Knowledge-transfer Introduces New Dimensions) and finally put in concrete terms and renamed Moodle (Modular object oriented design Learning Environment).

2.5.4 Current Generation WorldWideWeb (2001 onwards)
The current generation of e-learning technology is combination of various hardware, software, communication, networking and media delivery systems. Hardware system consist of various devices like personal desktop (PC), Laptop, notepad, palmtop (hand held computers), electronic black boards, electronic writing pads, mouse, trackball, joystick, light pens, touch screen monitors, barcode readers, optical mark/character recognition, digitizing tablets or digitizers, speech or voice input devices, printers, scanners, copiers, faxes etc.. It may also include one or two way audio and video conferencing. Examples also include learners engaged in a real time chat or audio-video conferencing. [35-36]

Voice recognition systems, handwriting recognition systems, database management and data processing software, learning package in the form of compact disk and hard disk, information management programs, information compact disk consisting of encyclopedias, references, digital books, educative games, program and languages, self learning packages, edutainment packages(packages with education and entertainment), software for documentation, spreadsheets, power point presentation, audio and video software to create 3D animations and editing software, software used for creating 3D animation movies, graphical software are examples of software systems used for e-learning. Using 3D animation and graphical software, animated movies had been developed for inspiring new generation with role model of almighty “HANUMAN, KRISHNA, GANESHA”. As in the changing lifestyle of 21st century, there are more and more nuclear families and there are opportunities for the parents and grandparents to tell the stories of the LORDS to their successors. Even the children enjoy the animated movies as part of edutainment program (education and entertainment at the same time). e-learning delivery system include audio and video conferencing aids, dishes and antennas for satellite communication, web cameras, digital video and still cameras, cell phones, speaker phones, telecommunication devices, modem, LCD, distance learning projectors, servers etc..

The networking system used in e-learning technology include switches, routers, gateways, hubs, optical fiber cables, twisted pair and unshielded twisted pair(UTP) cable. For faster and reliable learning on web based learning e-system, high speed broad band internet connection, leased lines, Virtual Private networks (VPN) are available. The
communication services used in e-learning system include telegraphs, dialog telephony, video telephony, telemetry, telex, videotext, facsimile, video surveillance, electronic meeting systems (audio, video, teleconferencing, groupware), Messaging (voicemail, video mail, electronic mails), etc., short message service (SMS) etc. Communication technologies are basically of two types – synchronous and asynchronous. Further, it can be classified as simplex, half duplex and full duplex type of communication depending on the type of communication technology used. E-mail, Blogs, Wikis, discussion board etc. are the various technologies used for achieving asynchronous type of communication. While, online chat sessions, virtual class room or meeting room are used for synchronous communication. Apart from these various protocols used in networking of e-learning system are Transmission control protocol/Internet protocol (TCP/IP) and User datagram protocol (UDP). TCP/IP is a connection oriented protocol. UDP in contrast, is connection less protocol. TCP/IP is more reliable over UDP in case of online web based learning systems.

2.6 E-learning and Information Technology

Indian culture, though thousands of years old, is passing through strange and unbelievable environment since independence. Parallel distance learning program driven with information technology tools has reading material available at home which is fixed & followed by others except the concerned candidate who gets degree by proxy. It is also known that examination centers are different and costly. Also time consuming invigilation is the accepted practice in c-learning system.

Different cultures of different countries, states or even in the same state interfere with studies more in e-learning & less, relatively, in c-Learning. In fact, it is a matter of continued concentration without least distraction. It has been tested on computer reading including indicators of OFF/ON on moving away from the screen or main material. It is impossible for the students to give 100% attendance for a standard period. And it is true that, percentage wise, it could be less than half for e-learning as compared to c-learning where possibly the active teacher can control the wayward winds.

The power of information technology can be capitalized with e-learning as a tool for uplifting of women in India as well as developing countries throughout world. E-learning could be used as tool to connect and dissipate knowledge through web
technology, e-learning can contribute for the growth of nations in many aspects like political, legal, health issues. Many social benefits can be repeated by educating women in India and worldwide. The most significant social impact are making women aware of their legal rights and duties, providing opportunity to learn via e-learning, prepare them to become responsible and contributive citizen, providing knowledge about social dogmas, biased prejudices, providing guidelines about legal rights. For this initiatives are required at 3 levels.

Level 1 through IT Professional worldwide
Level 2 through IT Corporate worldwide
Level 3 through Government and NGO’s

Educating Women will have direct impact on education of children education. There are various features that affect situation of girls and women as affecting their ability to participate in education. Many of factors are early marriages, female circumcision, unwillingness of fathers to pay for daughter’s education, child labor, gender based violence etc. With the tremendous power of information and communication technology (ICT), socioeconomic changes can happen. [43] The project can be initiated for economic and social development by training women as knowledge worker. This will have tremendous impact on women’s self esteem and the way they are required in community.

Topography of state comes in way of developing adequate infrastructure is compounded by terrorism which has taken a heavy toll of life and public property besides throwing normal life out of gear. Education could not escape from this tragedy as most of the educational institutions are in rural areas. e-learning is effective tool for women empowerment on the basis of various parameters

- Enhancing self esteem and self confidence of women
- Building positive image of women by recognizing their contribution to society, politics and economy
- Developing ability to think critical and fast decision making and action through self understanding
- Ensuring equal participation in development process
- Providing information knowledge and skill for economic independence
- Enhancing access to legal literacy
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- Achieving self reliance in literacy
- Acquiring skills to improve economic status

Initiatives to taken at various levels are

The IT professionals need to take following initiatives.
- A compulsory training to be provided by IT professionals to rural women for the development of nation
- Formulating IT groups within communities to educate the women
- IT professional should participate in monitoring progress towards educating women

The IT corporate need to take following initiatives.
- IT corporate should provide infrastructure & necessary facilities
- IT corporate should motivate employees for educating women

The NGO need to take following initiatives
- Creation of government and government linkage community
- Central and state government should help in project of educating women

2.7 Foundation of e-learning

The basis of e-learning has some important aspect like honesty, no cheating, self-control, discipline, maturity & belief etc. The autonomous and independent conditions could lead to ease of manipulation and undesirable/cheating activities acquired automatically. The question hangs – can we have a satisfactory, strong & successful e-learning system with the use of information technology?

The high cost of technology, availability, training to use and the inappropriate contents go against easy acceptance of e-learning systems. The psychological impact & cultural consideration including reduced social & cultural interaction are the real drawbacks. Collaborative learning theory (CLT) explains that human interaction is a vital ingredient to learning, where as e-Learning isolates the learners, it is crucial to follow the theory. [40]

It is worth noting that e-Learning has very specific advantages to both organizations & the learner, given circumstances & high tech curious student. On demand
availability enables the learners to complete training at any time / anywhere with convenience. Self passing for slow / quick learners is a possibility. Confidence can be built-up. Learning time can be reduced. Consistent and continuous delivery of contents are automatic. Expert knowledge is communicated without searching/hiring anywhere.

e-Learning also offers individualized instruction which is either not possible or extremely costly in c-Learning (instructor led teaching). The system can have maximum number of participant with maximum range of learning styles, performance and needs which are limited and bound by norms of the institution in e-Learning.

2.8 Current status of e-learning (India v/s Abroad)

The collaborative learning theory says that, human interaction is most important in the learning process. The unique feature of c-learning are personal touch, eye contact and face to face interaction with the students of classroom. Body language is one of the most stimulating and motivating factor of traditional classroom learning. The unique advantage of c-learning are the major drawbacks of e-learning. Hence, e-learning can not completely take over traditional c-learning, still e-learning can bring considerable revolution in Indian professional education system. So, e-learning has tremendous potential in India, but adoption of e-learning in Indian education system has been very slow. Indian e-learning market is at a nascent stage and has very bright future. For, success e-learning system in India, designing of e-learning packages need to be done carefully. Human interactions are very important in learning, so interaction of human with e-learning tools should be encouraged through audio/video conferencing programs. The drawback of e-learning however can’t be completely eliminated, still interactions of students seating in virtual class rooms can be made more frequent with the expert faculty using electronic boards, chats, emails and teleconferencing systems. There should be a fixed time or slot in which teleconferencing / chat sessions can be arranged. [40][51]

2.8.1 Social impact of e-learning

The current e-learning scenario is attractive for social and economic empowerment. The solutions need a critical examination of knowledge impartation methods and their effectiveness. Emphasis of social impact of e-learning can be negative, positive & neutral, that is, neither positive nor negative. Indian culture, though thousands
of years old, is passing through strange and unbelievable environment since independence. Older generation is setting undesirable examples for the young - wide spread corruption, cheating inviting fatalities and delays beyond imagination. Even the government has listed more than 200 fraudulent universities / institutions in the country. Thousands of students get bogus education & degree. Parallel distance learning program has reading material at home which is fixed & followed by others except the concerned candidate who gets degree by proxy. It is also known that examination centers are different and costly/time consuming invigilation is the accepted practice in c-learning system. The adoption of e-learning goals forces us to think about the ways and means to provide equitable access and deterministic effectiveness in achieving improvement levels. Quality of learning is equally important – the basic issue is the quality of learning using online techniques vis-à-vis traditional learning. The basis of e-learning has some important aspect like honesty, no cheating, self – control, discipline, maturity & belief etc. The autonomous and independent conditions could lead to ease of manipulation and undesirable/cheating activities acquired automatically. The question hangs – can we have a satisfactory, strong & successful e-learning system?

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Collaborative learning theory explains that human interaction is a vital ingredient to learning, where as e-Learning isolates the learners, it is crucial to follow the theory. The continuous social and economic pressure has driven political establishments to look for technology driven solutions. The e-learning systems are now being accepted to address mass learning. E-learning systems can provide constructive student centric, self-paced learning environment. The design of e-learning systems need to incorporate critical analytical and synthesis capabilities. [41]

It is worth noting that e-Learning has very specific advantages to both organizations & the learner given circumstances & high tech curious student. On demand availability enables the learners to complete training at any time / anywhere with convenience. Self passing for slow / quick learners is a possibility. Confidence can be
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It is believed that culturally effective and otherwise the reasons for distraction in studies are: Boring, unrelated & dry material, problems in life, worries, tiredness, hunger/thirst, lost in memories or future fronts. It is derived from experience that young live in dreams/future rather than in the present giving way to discontinuity and disruption in serious studies in particular and others in general.

e-learning is the changing face of traditional learning. Enthusiasts define e-learning as “ubiquitous learning by saying that e-learning provides opportunity to everyone for learning at own pace and convenience. E-learning impacts socially on each realm of life may be academics, corporate learning, everyday life of individual and entertainment. E-learning bought remarkable change in the way learning had been conducted. Many issues like social, ethical, human, health related issues make e-learning helpful to unfold the impact. E-learning is to specifically mark changes in traditional teaching methodologies. Thus, e-learning symbolizes the convergence of the web and learning. e-learning includes learning using almost every kind of electronic media that may include computer and web based learning, virtual classrooms and digital collaboration. As on one side, e-learning overcome the constraints in the traditional teaching methodology related to time, money, location, number of persons. On the other side, e-learning had introduced ethical, social and human issues related to lack of face to
face interaction of human beings. E-learning has now been adopted in all most all the sectors may corporate training or personal training. At the same time, e-learning introduced many complicated and important issues related to human life viz. issues like threat to security, denial of privacy, copy right issues also known as plagiarism, theft of information, vandalism, spying, cheating, threat to integrity and difficulty in maintenance of confidentiality of information. Such issues are very crucial with regard to identifying global impacts of e-learning as e-learning is finding its wide spread into the culture of various kind of organization. [41-42] Its very important to do a complete study about the technology to be used, the role of persons involved in e-learning methodology, the process to be used, the various policies to adopted related to securities and authenticity etc.

**Impact of e-learning on educational institutes**

Generations are continuously changing in terms of language and technology. E-learning classrooms are finding its place wherever possible i.e. may be in the school, riding homes, in the parks, in the market in the playground etc. so, learning is not confined at a particular location or to a particular time. E-learning can be carried out anywhere and at anytime depending on the ease of the learner or the trainer. The introduction of technology is also changing the way teacher and students communicate. The learning space may be divided into several parts like the information space associated with the lectures or the other methods of learning. A conversational space is the space associated with the learners and trainers, as the learners discuss the topics with the trainers or discuss among themselves. On the other side, the conceptual space is the one being the space where the ideas get developed in solitude and the student projects are designed and built. [48-49]

The educational body must change their strategies to incorporate benefits of e-learning for providing education to large number of diversified learners 24x7 and 365 days while at the same time maintaining the quality of education as the educational institutes may loose the control over the contents being used for learning. At the same time, trainers are required to increase their competence with the technology and keep themselves updated.
Other important impact is on the relations among the trainer and the trainee. In the earlier days, the trainers or the experts used to conduct the test and deliver the assignments. While the introduction of technology as a medium there is no direct interaction between the trainer and the learner and it demand the learner the time himself accordingly, choose the contents to learn and at the same time motivate himself for learning. e-learning is equally demanding from both the learner and the trainer and vice versa. A live example of this is videoconferencing being conducted by many corporate for their employees for training and the learners need to motivate themselves and they should be eager to listen the contents of videoconferencing sessions as the contents are very important and if one misses any topic then there will be no repetitions.

As, the technology is in separable part of human being. The institution should evaluate the technology experts educational effectiveness including the assessment of learning and the outcomes, student retention and student and faculty satisfaction.

Impact of e-learning on corporate sectors

The corporate sectors have adopted e-learning at a very fast pace, but this pace is not uniform in various level of organizations like small, medium and large. Some of the factors motivating or provide strength to large organizations and even to the small organizations is benefits like time saving, experts advices, improved workflow and improved staff development under the conditions that staff have right component and working atmosphere for adoption of e-learning.

The problem with small business are that they bare located geographically diverse and developing generalized e-learning solutions for the individual of small business runners is very costly and need lots of investment in terms of time at the same time need continuous maintenance and supervision. As large organizations have proper Return On Investments (ROI), so same is not the issue with the large business organizations. In small organizations, people have ambiguous role i.e. a single person may have many responsibilities and also the roles change time to time, so designing a generalized solutions for small organization need to require to address the multiple issues at the same time.

Most employers see e-learning as a technology that enable a single person to enable to learn from screen. As the organizations, want to maximize its e-learning
potential so it should look at collaboration among a group. Learning is a process that normally happen when groups of individual collaborate to complete well designed learning activities. e-learning help to form and facilitate new types of collaboration among a group.

Impact of e-learning on entertainment sector

Video games and video parlor is a popular source of entertainment. People also use internet for playing games like LAN games, these games not only provide the entertainment to the individuals but also provide following to individuals viz.

- Spatial awareness among the game players
- Iconic skills like reading diagrams and reading images
- Provides attention skills such as keeping track of various subjects at the same time
- Provides attention span to children with attention to problems

Impact of e-learning on Health issues

e-learning involve heavy use of technology like desktops. The use of desktop have considerable impact on health issues like Obesity, Eye diseases including eyestrain, photosensitive epileptic seizures (sometimes prolonged computer uses may harm specially those persons who are short sight). Bad posture is the another common problem among the heavy users of e-learning systems. Bad posture may be in the form of overuse injuries of hands, muscle and joint problems.

Long time spent in front of the desktops and reading the contents of the screens also leads to large pain in the lumbar region of the back. Another common problem is of neck and shoulder as it is the result of poor habits of seating in front of the desktop and improper arrangements of the desktop on the desk. A quality e-learning system demands following as characteristics to be the part of quality e-learning model.

- Restriction to number of participants
The number of enrollments needs to restricted ideally upto 30 in order to keep the collaborative learning theory manageable.

- Continuous ongoing assessments
A continuous ongoing assessment is a ongoing process. The instructors need to find the evidence of achievements for participants daily contribution for online discussions.

- Asynchronous collaboration
Participants are not required to log on to the course simultaneously, as they work in asynchronous environment.

- Explicit schedules

As instructors of online courses rely on collaborative discussion schedules within specific timeframe, so participants can share similar experiences and insights.

- Expert faculty/Trainer

The online courses to be led by experienced and qualified persons specifically trained in online facilitation.

- Inquiry Pedagogy

The designers need to create effective online courses with sufficient and specific elements to contribute to sound pedagogy for inquiry learning.

- Common community

The course designers and instructors are always proactive in designing and nurturing a community culture in which participants need to be supportive, honest and willing to take intellectual risks.

- Virtual space as per demand

The online course designers create explicit structures so as the community get what is needed without interrupting flow of content based discussions.

- Quality course material

The course material should of wide and feasible range consisting of media and activities to appeal different styles of e-learning.

2.8.2 Impact of e-learning on rural India

Impact of e-learning on rural India is specially educating the adults of rural India. To make it possible, a project of e-learning diploma and degree course program could be developed and delivered all over rural India for rurally remote adults wishing to achieve a higher education qualification and to contribute to the development of their rural areas.[49][51] The project explores distance learning, e-learning, and lifelong learning outlining. The key challenges for this programme will be

- How will this programme emerge
- How it will be designed, managed, presented and assessed
- Who will be the learner
Study of Learning styles & e-Learning

- What type of learning media will be used
- What will be the method
- What will be the impact, and
- What lessons will be learned

As normal programmes are conducted in urban area. A similar program bachelor in science in rural development degree (BSc) can be conducted noting its method and achievement in rural development education for adults in remote communities. After conducting such a program, the key questions could be answered;

- Their experience of e-learning by the participants.
- The contribution e-learning course to the transformation and progression of participants.
- The impact of lifelong learning.

2.8.3 Impact of e-learning on developing nations

Developing nations are going to have positive impact of such Diploma/BSc(Degree) programmes in their Rural Development by flexible-time distance learning programme. The programme is designed to develop in students the full range of knowledge and skills which constitute rural development. For creating positive impact, course to be designed as follows:

- To introduce participants to the broad theoretical knowledge base in the field of rural development so as to assist them in critically appraising the multiplicity of strategies and approaches in the field.
- To educate participants in the theory and practice of rural development management.
- To introduce participants to the range of strategies that address social, economic and personal/group strategies for rural areas.
- To create a third level educational pathway for rural development activists for their personal and professional qualification.
- To use modern education technologies to support learning from a distance into a community.
- To enable a mature student to qualify with a diploma after two years and to continue to earn a degree with a minimum of a further two years of flexible study
Who will be the target learners?
The course is to be designed, based on the Strategy for Rural Development Training suggested by government of India, for adults living in rural areas with some level of experience of rural development, seeking to build their knowledge capacity of rural development, and intending to make an ongoing contribution to rural development. The course is specifically targeted at adults who, in mainstream higher education terms, may be excluded from participation and higher education achievement. The design and methodology specifically seeks to educate “into” rather than “out of” remote areas. [49][51]

Students may register with any of the four participating colleges, ideally the college in closest proximity to the student’s home. Foundation work is delivered to familiarize students with a blended-learning approach to distance learning. An introductory module on the use of information technology (IT) is organized for successful applicants to improve their IT skills and student study groups are set up in each area.

The course content includes:

- Introduction to socio-economic aspects of rural development
- Socio-economic community/area resource audits, rural development organization/structure
- Designing and managing an area development plan
- Business planning, marketing and stimulating rural enterprise such as tourism and SMEs.
- Interpersonal communications, leadership and group-work skills
- Financial management and economic management.
- Policy development and management
- Research skills
- Inter-organizational partnerships and the role of support agencies
- Social exclusion and gender equality issues in rural development in five and ten credit modules.

What learning media were used?
The course is delivered using a combination of web and text based modules, tutorials, lecture presentations inter-university seminars and innovative blended learning methods. One of the benefits of this approach is that the need to travel to central locations for face-to-face work is minimized. Where face-to-face delivery is scheduled it will not exceed the equivalent of two full days per month after which students will study at home or in small local study groups. A local facilitator is available where feasible to work with local study-groups.

What is the method?

The Diploma/BSc in Rural Development by Distance Learning is delivered on a modular system through a combination of home-based distance learning manuals, regional tutorial workshops and integrated assignment projects. The programme comprises of three levels:

Level One, offered over two years on a part-time basis leading to the Diploma qualification.

Level’s Two & Three, each offered in one academic year, i.e. on a full-time equivalent basis. Levels Two & Three combined lead to a Degree (Bsc) level qualification

In general students invest 600 hours yearly in study broadly distributed as follows:

200 Hours - Tutorial Workshops
300 Hours - Home-based Distance Learning
100 Hours - Integrated Field Project (Diploma), minor-thesis (degree)

A variety of mechanisms are used to assess each participants performance including continuous assessment based on module assignments, workshop participation, examinations, integrated fieldwork project / minor thesis completion and attendance. Participants are assessed by the college with which they register.

From an academic perspective the course material is regularly updated and supplemented with expert input lectures and resource materials posted on the virtual learning environment (VLE). Standards are supervised by the academic committee, the faculties, examination boards, the external examiner. The academic committee has achieved standardization of fees and of marks and standards across the universities. This is crucial to the joint delivery of the programme.

The academic board constantly seeks to strengthen collaboration between the institutions for the most effective model of blended distance learning delivery. The strengthening of
collaboration has resulted in excellent results, progression from a diploma to a degree qualification, the development of a virtual center of excellence in rural development, collaborative research, the preparation for a masters level progression route and detailed evaluation of the collaborative process of working together. This process will present a valuable model of higher education collaboration for the sustained development of innovative higher education delivery into the early 21st century.

The experience and the impact of such programme is highly significant. The cohorts of students who have complete such Diploma/BSc in Rural Development by Distance Learning make a significant contribution to the policy and application of rural development locally, regionally and nationally. The value of the blended learning method can be established as an option for adults wishing to return to higher education but limited through access constraints. The feasibility and importance of educating “into” rather than “out of” local communities can be established. However the such programme need significant research to validate the learning and to continue the development of effective blended learning within the higher education society.