CHAPTER V

SUMMARY, MAJOR FINDINGS, IMPLICATIONS AND SUGGESTIONS
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5.0.0.0 Introduction

From the results of the research, interesting implications have been drawn with reference to the current e-learning scenario in India and according to individual's personality types. In this section an attempt is made to briefly summarise the procedure followed, highlight the major findings, derive their implications and propose suggestions accordingly.

5.1.0.0 Title Of The Research Project

Creating A Learning Society By Adapting The System To Match E-learners Profiles

5.2.0.0 Need For The Study

According to Murthy (2009) we live in an age where the only constant is change and learnability is the only instrument to handle this fast-paced change. Murthy (2009) describes learnability as a mindset that is open to new ideas, new people, new cultures and new paradigms. The present schooling structure is rigid and based on rote learning rather than encouraging individuals to question and think for themselves. According to Sterling (2004), most education policymakers are unaware of the scale of change needed in order to make society more sustainable, with a danger that not enough time is being spent helping children and students become 'sustainable citizens' in an already packed curriculum. Sterling (2000) further stresses the requirement of a key shift from a limited emphasis on 'education for jobs' towards the broader goal of building an ecologically sustainable economy and society through lifelong learning. Braham (2004) believes that organisations and individuals that are able to
learn with the greatest ease and speed will be the most successful in the future and that a person today cannot expect the current level of knowledge and expertise to serve him or her for years down the road. Murthy (2009) strongly asserts the need for an education that prepares individuals to cross national borders seamlessly, adapt to new cultures quickly and use education to add value to society. The creation of learning communities will be crucial to sustain lifelong learning needs and include learners of all ages.

India is projected to have the world’s third largest online population by 2013 and hence it is crucial to consider this trend in terms of educational changes. The use of online systems can improve the effectiveness of learning and enables society at large to access learning through increased options in educational offerings. Including people from all areas irrespective of their situation increases inclusion and participation in the workforce and contributes to the availability of lifelong learning for all. The use of ICT supported learning also helps learners acquire the necessary skills and knowledge for their job and personal development, which has a direct influence on business, competitiveness and economic growth. This helps to create a wider range of jobs with better skill sets. Students are not left helpless in the event of strikes by teaching faculty that leads to undue stress on the learner and an ill effect on their career.

However, digital literacy is an assumed fundamental element of the knowledge society. Ensuring that everyone has the necessary skills, competences, experiences and attitudes to make effective use of ICT is probably the biggest challenge of all. These drawbacks suggest that not every individual can be a successful and effective e-learner and certain profiles and characteristics exist in making a successful online student. Thus, in order to increase the completion rate of e-learning programs, the systems need to change and adapt to reflect the needs of individual e-learners according to their personal profiles. This will ensure everyone is given an equal opportunity to learn leading to the creation of true learning societies.
5.3.0.0 Scope And Limitations Of The Study

Part I : Exploring The Current Scenario Of E-learning

Scope: The existing e-learning scenario in universities and institutions that offer e-learning courses both, in India and internationally is explored.

Limitation: Out of the seventy universities in India that were found to offer distance learning only twelve specifically stated that their mode of delivery is e-learning. The other institutions have only used the term ‘distance education’ without specifically mentioning e-learning.

The other limitation is that although the aim of the study is creating a learning society by adapting the system, this study is limited to adapting only the e-learning system.

Part II : Comparative Study Of The Profiles Of Effective And Ineffective E-learners

Scope: E-learners belonging to different profiles who were both effective and ineffective, in their online course were surveyed from different countries with a major portion of students from India.

Limitation: The first part of the survey, the collection of information on the profiles of e-learners, those learners that are ‘presently studying’ their e-course, were not accountable in the results as it is impossible to determine their inclination towards completion or withdrawal from the course.
Part III: Designing Ways To Adapt The E-learning System  
To Match E-learners Profiles

Scope: E-learning course designers, practitioners and consultants (subject matter experts who have extensive experience implementing e-learning efforts in organisations and universities or working full time in the industry)

Limitation: The number of e-learning course designers interviewed is nineteen from select universities and e-learning design organisations. Thus the ideas presented could change with the change in the sample size.

5.4.0.0 Parts Of The Study

The research project has been divided into three parts:

Part I : Exploring the current scenario of e-learning

Part II : Comparative Study Of The Profiles Of Effective And Ineffective E-learners

Part III : Designing Ways To Adapt The E-learning System To Match E-learners Profiles
5.5.0.0 Research Design

The research design used in this project is described below according to each part of the study:

Part I: Exploratory Design: To Explore The Current Scenario Of E-learning

In Part I of the study, the researcher chose an exploratory research design, as it is a flexible and versatile process used to provide insights and understanding. The researcher explored the current scenario of e-learning through interviews and secondary information on online courses. Twelve universities and institutions in India, ten in America and ten in Australia were selected as part of the study based on the criteria that these institutions offered online courses.

Part II: Descriptive Design: Comparative Study Of The Profiles Of Effective And Ineffective E-learners

In Part II of the study, descriptive research was carried out in the form of a survey conducted face-to-face and computer-based. The online questionnaire was sent to e-learners who have either completed an e-course or have dropped out of an e-course in order to study the profiles of effective and ineffective e-learners. The e-learners completed the survey based on perceived anonymity.

The first half of the survey involved gathering information on the background of different types of e-learners. The next part involved finding the personality type of each individual e-learner in order to determine if a co-relation exists between the profiles of effective e-learners and those who were ineffective or unable to complete their respective e-learning course.
Part III: Exploratory Design: To Design Ways To Adapt The E-learning System To Match E-learners Profiles

In Part III of the study, the ways of adapting the e-learning system were explored to make it more personalised and learner-centric. Nineteen e-learning course designers, practitioners and consultants were interviewed through unstructured personal interviews with a list of topics to be covered. The experts were briefed on the purpose of the interview.

The order in which the topics were covered and questions asked were not predetermined but decided by the researcher as the interview progressed. This allowed for greater flexibility in capturing the insights of the experts. Extensive literature search was also carried out on e-learning trends and the future direction of e-learning and its personalisation.

5.6.0.0 Part I: Exploring The Current Scenario Of E-learning

The first phase of the study was an exploratory research carried out in order to gain an overall understanding of the current scenario of e-learning both in India and internationally.

The research focused on investigating the universities and institutions offering some e-learning courses and collecting information, both from interviews with the universities and also secondary information available through the institution’s website. The information researched intended to identify the levels of learning available at these institutions along with the types of specialisation courses that are offered, the flexibility in the approach to meet the needs of the individual students and to identify if there is a need for change with the current delivery of courses at the institutions.
5.6.1.0 Objectives Of Part I

To find out the extent of e-learning in terms of:
1) level of learning
2) type of specialisation,
3) flexibility in approach to meet individual needs, and
4) the need for change.

5.6.2.0 Aspects Studied For Part I

The aspects studied were

1) The level of courses offered and their specialisations,
2) The organisation’s delivery method of the e-course and means of communication with e-learners
3) Initiatives to increase flexibility in the approach to meet individual needs.

5.6.3.0 Sample Used For Part I

Twelve institutions in India, while others internationally, namely ten in America and ten in Australia that all offer online courses.

5.6.4.0 The Tool Used For Part I

1) Questionnaire (see Appendix B) : The department and university heads of e-learning and instructional technology at the educational institutions were interviewed. Where interviews were not possible, the information on other universities was retrieved through the institution’s website.
5.6.5.0 Procedure Followed To Collect The Data For Part I

1) Primary data through interviews:
Heads of institutions that offer e-learning were interviewed through online and face-to-face interviews, wherever possible, with the help of a questionnaire. This was done to find out the current scenario of e-learning based on the aspects studied.

2) Secondary information through university websites:
The websites of the educational institutions were explored to find out information on their e-learning courses and their methods of delivery of the course along with their flexibility in approach to meet individual needs.

These Universities were both in India and outside India. The institutions that did not offer online learning were not included in the research.

5.6.6.0 Analysis Of The Data Of Part I

Data obtained with the help of exploratory research through interviews and secondary data has been compiled in a tabular form and interpreted based on the
1) level of learning,
2) type of specialisation, and
3) flexibility in approach to meet individual needs.

Using this information, the need for change in e-learning in universities and institutions has been suggested.
5.7.0.0 Part II : Comparative Study Of The Profiles Of Effective And Ineffective E-learners

The next stage is identifying the variables of an individual's profile that makes him/her an effective or ineffective e-learner. The study consists of a questionnaire distributed to e-learners who have either completed an e-course or have dropped out of an e-course.

5.7.1.0 Objective Of Part II

1) To find out whether effective and ineffective e-learners have a special personality profile.

2) To find out whether the e-course status depends on the e-learner's:
   - Gender
   - Age
   - Nationality
   - Level of Education
   - Type of Specialisation
   - Marital Status
   - Parental Status

5.7.2.0 Variables Studied

In the study of the profiles of different types of e-learners the variables taken into consideration by the researcher for the survey are as follows:

**Independent Variables:**
- Gender
- Age
- Nationality
- Level of Education
- Type of Specialisation
- Marital Status
- Parental Status
- Personality Type

**Dependent Variable:**
- E-course Status

### 5.7.3.0 Hypotheses Of Part II

1) **Ho:** E-course Status Is Independent Of The Following:

**Gender**  
{Male (1) and Female (2)}

**Age Group**  
{15-24 (1), 25-34 (2), 35+ (3)}

**Level of Education**  
{Undergraduate (1), Bachelors Degree (2), Postgraduate (3)}

**Type of Specialisation**  
{Science (1), Arts (2), Commerce (3), Management (4)}

**Marital Status**  
{Never Been Married (1), Married (2), Single (3)}

**Parental Status**  
{No Child (1), Children (2)}

**Personality Type**  
{INFJ (1), INTJ (2), INFP (3), INTP (4), ENFP (5), ENTP (6), ENFJ (7), ENTJ (8), ISTJ (9), ISTP (10), ISFJ (11), ISFP (12), ESTP (13), ESFP (14), ESTJ (15), ESFJ (16)}

(See Appendix F for explanation of sixteen MBTI type preferences)

190
2) **Ha:** E-course Status Is Dependent On The Following:

<table>
<thead>
<tr>
<th>Category</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male (1) and Female (2)</td>
</tr>
<tr>
<td>Age Group</td>
<td>15-24 (1), 25-34 (2), 35+ (3)</td>
</tr>
<tr>
<td>Level of Education</td>
<td>Undergraduate (1), Bachelors Degree (2), Postgraduate (3)</td>
</tr>
<tr>
<td>Type of Specialisation</td>
<td>Science (1), Arts (2), Commerce (3), Management (4)</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Never Been Married (1), Married (2), Single (3)</td>
</tr>
<tr>
<td>Parental Status</td>
<td>No Child (1), Children (2)</td>
</tr>
<tr>
<td>Personality Type</td>
<td>INFJ (1), INTJ (2), INFP (3), INTP (4), ENFP (5), ENTP (6), ENFJ (7), ENTJ (8), ISTJ (9), ISTP (10), ISFJ (11), ISFP (12), ESTP (13), ESFP (14), ESTJ (15), ESFJ (16)</td>
</tr>
</tbody>
</table>

### 5.7.4.0 Sample Used For Part II

Convenience Sampling technique was used to choose the e-learners. Two hundred and forty four e-learners were chosen for the study based on their e-course status of completed or dropped out.
5.7.4.1 Gender Wise Distribution

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>129</td>
<td>115</td>
<td>244</td>
</tr>
</tbody>
</table>

5.7.4.2 Age Group Wise Distribution

<table>
<thead>
<tr>
<th>Age Group</th>
<th>15-24 years</th>
<th>25-34 years</th>
<th>35+ years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>78</td>
<td>116</td>
<td>50</td>
<td>244</td>
</tr>
</tbody>
</table>

5.7.4.3 Nationality Wise Distribution

<table>
<thead>
<tr>
<th>Nationality</th>
<th>Indian</th>
<th>Asia-Pacific</th>
<th>Western</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>188</td>
<td>27</td>
<td>29</td>
<td>244</td>
</tr>
</tbody>
</table>

5.7.4.4 Level Of Education Wise Distribution

<table>
<thead>
<tr>
<th>Level Of Education</th>
<th>Undergraduate Degree</th>
<th>Bachelor Degree</th>
<th>Post-Graduate Degree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>69</td>
<td>133</td>
<td>42</td>
<td>244</td>
</tr>
</tbody>
</table>

5.7.4.5 Specialisation Wise Distribution

<table>
<thead>
<tr>
<th>Specialisation</th>
<th>Science</th>
<th>Arts</th>
<th>Commerce</th>
<th>Management</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>37</td>
<td>80</td>
<td>30</td>
<td>97</td>
<td>244</td>
</tr>
</tbody>
</table>

5.7.4.6 Marital Status Wise Distribution

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Never Been Married</th>
<th>Married</th>
<th>Single</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>113</td>
<td>85</td>
<td>46</td>
<td>244</td>
</tr>
</tbody>
</table>
5.7.4.7 Parental Status Wise Distribution

<table>
<thead>
<tr>
<th>Children</th>
<th>No Child</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>63</td>
<td>183</td>
<td>244</td>
</tr>
</tbody>
</table>

5.7.4.8 Personality Wise Distribution

<table>
<thead>
<tr>
<th>ISFJ</th>
<th>INTJ</th>
<th>ESTP</th>
<th>ESFP</th>
<th>ESFJ</th>
<th>ENFP</th>
<th>ENTP</th>
<th>ENFJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>14</td>
<td>11</td>
<td>23</td>
<td>32</td>
<td>20</td>
<td>15</td>
<td>11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ISTP</th>
<th>ISFP</th>
<th>ISTJ</th>
<th>ESTJ</th>
<th>INFP</th>
<th>INTP</th>
<th>INFJ</th>
<th>ENTJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>8</td>
<td>11</td>
<td>9</td>
<td>11</td>
<td>7</td>
<td>13</td>
<td>9</td>
</tr>
</tbody>
</table>

5.7.4.9 E-Course Status Wise Distribution

<table>
<thead>
<tr>
<th>Dropped Out</th>
<th>Completed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>112</td>
<td>132</td>
<td>244</td>
</tr>
</tbody>
</table>

5.7.5.0 The Tools Used For Part II

1) Questionnaire (See Appendix C): The questionnaire was designed in parts after consulting three professionals to check for clarity and specificity and content validity.

Part 1: E-learner Personal Background And Personality Profile

Part 2: Reasons E-learners Enroll In An E-course And Suggested Improvements In E-courses
2) Myers-Briggs Type Indicator (MBTI): To find the Personality Type of each individual e-learner, the MBTI test published by Deshpande (2008) has been used.

The reliability of the test was carried out by using test-retest method. Following are the results.

<table>
<thead>
<tr>
<th>Preferences</th>
<th>Test-Retest Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>.908**</td>
</tr>
<tr>
<td>I</td>
<td>.835**</td>
</tr>
<tr>
<td>S</td>
<td>.652**</td>
</tr>
<tr>
<td>N</td>
<td>.737**</td>
</tr>
<tr>
<td>T</td>
<td>.850**</td>
</tr>
<tr>
<td>F</td>
<td>.851**</td>
</tr>
<tr>
<td>J</td>
<td>.862**</td>
</tr>
<tr>
<td>P</td>
<td>.852**</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)

5.7.6.0 Procedure Followed To Collect The Data For Part II

About two hundred and eighty e-learners were sent the online questionnaire to study the profiles of effective e-learners. Out of which two hundred and fifty e-learners completed the questionnaire along with a personality test. Only two hundred and forty four e-learners have been analysed as they met the criteria of their e-learning status being completed or dropped out. The other six e-learners were not analysed as their e-course status was ‘presently studied’ which would lead to inconclusive results. The results from the personality test were analysed using the MBTI scoring sheet (Deshpande 2008) in order to derive the personality type of each e-learner.
1) Oneway Analysis of Variance (ANOVA) was used to find out if effective and ineffective e-learners differ significantly on the following 8 different preferences of MBTI:

   a) Extravert (E)  
   b) Introvert (I)  
   c) Sensing (S)  
   d) Intuition (N)  
   e) Thinking (T)  
   f) Feeling (F)  
   g) Judging (J)  
   h) Perceiving (P)

2) Chi Square Test was used to see if ‘e-course status’ depends on the following:

   a) Gender  
   b) Age Group  
   c) Nationality  
   d) Marital Status  
   e) Parental Status  
   f) Level of Education

All data was analysed using SPSS version 12.
5.8.0.0 Part III : Designing Ways To Adapt The E-learning System To Match E-learners Profiles

The final stage of the research explored the possibility of adapting the system to make it a more humane, personalised and flexible e-learning system by matching it to the profiles of e-learners.

5.8.1.0 Objective Of Part III

To design ways of adapting the e-learning system to make it a more humane, personalised, flexible system to match e-learners profiles.

5.8.2.0 Sample Used For Part III

Nineteen e-learning course designers, heads of institutions and universities and other e-learning industry professionals participated in the interviews to explore the ways of improving the present day e-learning system and creating a learning society through educational change.

5.8.3.0 The Tool Used For Part III

1) Questionnaire: To collect information from e-learning experts, practitioners and consultants on creating a learning society and ways of adapting the e-learning system (See Appendix D).
5.8.4.0 Qualitative Analysis Of Part III

Secondary data analysis was conducted using academic journals and books on or relating to e-learning. Computer databases were also used to identify books and additional related articles that are relevant to e-learning and the efforts made to adapt e-learning.

The information collected from the e-learning designers and subject matter experts was qualitatively analysed to discover the trends in e-learning, the consideration when designing courses, steps taken to personalise courses and the technology used to design e-learning courses.

Further they were also consulted to find out the future trends in relation to e-learning. The suggestions given by the experts and e-learning course designers have been used to come up with ways to create learning societies and adapt the system to match the profiles of e-learners.
5.9.0.0 Major Findings Of The Study And Their Implications

The title of this project is “Creating A Learning Society By Adapting The System To Match E-learners Profiles”. In order to do this, the current scenario of e-learning was researched through interviews and secondary information from websites of universities and institutions that currently offer e-learning courses; the profiles of effective and non-effective e-learners were derived using questionnaires; and ways to adapt the e-learning system to make it more personalised, humane and flexible are proposed that matches e-learners profiles.

5.9.1.0 Part I: The Current Scenario Of E-learning: Major Findings And Implications

The universities and institutions currently offering e-learning were studied based on the aspects of level of learning, the types of specialisations offered, and flexibility in their approach to meet individual needs. Based on these findings, it was found that there is a need for change in the e-learning system.

1) Level Of Learning:

Courses exist for most levels of learning namely, Certificate, Diploma, Advanced Diploma, Post-Grad Certificate, Bachelors Degree and Masters Degree. There is immense opportunity and the provision to learn several courses and degrees online.

2) Type Of Specialisation:

Most of the e-courses are in Education (Bachelors and Masters), MBA, Technology, Law, Languages, Science, Arts and Finance.
3) Flexibility In Approach To Meet Individual Needs:

The universities outside India, namely in America and Australia are better equipped than Indian Universities with the online learning technology to provide 24x7 support and counselling facilities to students when required. The online courses include interactive study material; one way and two-way video and audio and online learner support. The most common mode of communication between the student and the tutor is through email. They also use telephone and face-to-face methods of communication however email still remains the most popular medium. Information about the student is collected through student surveys and database management tools.

The institutions also offer counselling and mentoring facilities for students, invite them to form online groups and participate in online discussions. A vast proportion of online courses at the moment are delivered asynchronously where there is no real time interaction between the tutor and the student. Some e-learning institutions deliver their courses synchronously in a virtual classroom setting, although this number is still low. Currently a majority of the courses are delivered through blended learning techniques. This includes a technology-based component in the course along with face-to-face sessions between the learner and the tutor, which is the same as the present day learning scenario.

4) The Need For Change:

The need to adapt the courses according to the personality of e-learners is a factor that is currently not been taken into consideration by most universities interviewed. The majority of e-learners are in the age group of 25-34 with the least being 40+. In terms of promoting lifelong learning, tailoring the courses to meet the needs of older learners could result in their inclusion online as well. This will lead to the formation of online communities of people that does not depend on age.
There is an exponential increase in student online enrollments shows a growing interest in online courses. The high attrition rate among students in online courses implies that there is still a need to increase the retention rate of e-learners at universities and institutions that offer courses online by finding innovative ways to keep learners active and interested in their course so that they are able to accomplish their educational goals along with gaining from the experience of flexible learning. In terms of improving the retention rate of learners in online courses, new methods of learning that are individualised and adapted to the learners needs should be the base on which the e-learning courses are designed. Hence universities should take the time to fully understand their student population and their needs in order to be able to give them a personalised learning solution that will increase their chances of true learning instead of rote learning to pass an examination. When learning is personalised to an individual’s needs, they are more motivated to learn. The training of teachers in online pedagogy and their support is essential in the fruitful implementation of online learning efforts. The E-B.Ed course is a total paradigm shift offered through Tech-MODE. The innovations in the course prepare teachers for the classrooms of the future by concentrating on empowering group learning, community and sharing networks to work towards lifelong learning. It equips teachers with skills that promote self-study, performance based learning, collaborative learning, learning through distributed classrooms and learning supported by e-learning resources.

The courses should be designed with additional bridging courses to help students understand the study material better. Student support services, which help students, feel like they are not alone in the online area but more so belong to a community of learners will help students study better. The focus on the courses should not be more on entirely online or face to face. These are merely delivery methods. What the focus should be on is the quality of the material being developed and the interaction it encourages between the learners and the tutors.
E-learning course strategy needs to be designed keeping in mind the core principle of anytime anyplace learning and time flexibility without discounting the quality of the course in order to retain students till completion.

Evaluation and assessment is an area that also should be focused on, that could lead to increase or decrease in student motivation. A situated assessment approach proposed by Naidu (2004), which incorporates both the affordances of the environment as well as the abilities brought to the situation by the student, can be used to move away from static assessment.

Since the courses do not take into consideration the personality of individual learners, the courses are not tailor-made according to the needs of individual learners but more of a one-size fits all solution, which is no different to the current education system offered in school and on-campus courses. It is important to adapt the courses according to the personality of e-learners in order to make e-learning totally learner-centric. By focusing on individual’s needs only can the system be changed, which would keep the learner more interested in the course, ultimately increasing the retention rate is the online learning arena.
In order to find out if there is any significant difference in the personality types of effective (n=132) and ineffective (n=112) e-learners, the e-learners were given the Myers Briggs Type Indicator (MBTI) test. They were then compared on the eight personality preferences using oneway analysis of variance (ANOVA).

<table>
<thead>
<tr>
<th>No.</th>
<th>Variable</th>
<th>Statistical Technique Used</th>
<th>Remarks</th>
</tr>
</thead>
</table>
| 1.  | Extraversion (E) | Oneway Analysis Of Variance (ANOVA) | Significant at (.000)  
Ineffective E-learners are significantly higher on Extraversion (E) than Effective E-learners |
| 2.  | Introversion (I) | Oneway Analysis Of Variance (ANOVA) | Significant at (.000)  
Effective E-learners are significantly higher on Introversion (I) than Ineffective E-learners |
| 3.  | Sensing (S)   | Oneway Analysis Of Variance (ANOVA) | Not Significant (.230)  
There is no significant difference in the mean scores of Effective and Ineffective E-learners on Sensing (S) |
<table>
<thead>
<tr>
<th>No.</th>
<th>Type</th>
<th>Oneway Analysis Of Variance (ANOVA)</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Thinking (T)</td>
<td>Significant at (.018)</td>
<td>Effective E-learners Are Significantly Higher On Thinking (T) Than Ineffective E-learners</td>
</tr>
<tr>
<td>6.</td>
<td>Feeling (F)</td>
<td>Significant at (.019)</td>
<td>Ineffective E-learners Are Significantly Higher On Feeling (F) Than Effective E-learners</td>
</tr>
<tr>
<td>7.</td>
<td>Judging (J)</td>
<td>Significant at (.000)</td>
<td>Effective E-learners Are Significantly Higher On Judging (J) Than Ineffective E-learners</td>
</tr>
<tr>
<td>8.</td>
<td>Perceiving (P)</td>
<td>Significant at (.000)</td>
<td>Ineffective E-learners Are Significantly Higher On Perceiving (P) Than Effective E-learners</td>
</tr>
</tbody>
</table>
The preceding information indicates that effective e-learners are high on Introversion (I), Thinking (T) and Judging (J). The ineffective e-learners are high on Extraversion (E), Feeling (F) and Perceiving (P). This implies that e-courses should be adapted to reflect the e-learners' personalities in order to increase the retention and successful completion rates of e-learners.

5.9.3.0 Part II b: E-learner Background Information

In order to find out if the e-course status is dependent on other variables relating to e-learner background information, Chi Square Of Independence was done to find the association between e-course status and gender, age group, nationality, level of education, type of specialisation, marital status and parental status.

<table>
<thead>
<tr>
<th>No.</th>
<th>Hypothesis</th>
<th>Statistical Technique Used</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1) Ho : E-course Status Is Independent Of Gender</td>
<td>Chi Square Of Independence</td>
<td>Not significant (.278)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-course Status Is Independent Of Gender</td>
</tr>
<tr>
<td>2.</td>
<td>1) Ho : E-course Status Is Independent Of Age Group</td>
<td>Chi Square Of Independence</td>
<td>Not significant (.899)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-course Status Is Independent Of Age Group</td>
</tr>
<tr>
<td>3.</td>
<td>1) Ho : E-course Status is independent of Nationality</td>
<td>Chi Square Of Independence</td>
<td>Not significant at (.925)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>E-course Status Is Independent Of Nationality</td>
</tr>
</tbody>
</table>
The preceding information indicates that the e-course status does not depend on any of the following variables:

- Gender
- Age
- Nationality
- Level of Education
- Type of Specialisation
- Marital Status
- Parental Status

The null hypothesis 1) Ho is accepted.
5.9.4.0 Reasons E-learners Enroll In An E-course:

Major Findings And Implications

Apart from analysing the personality of e-learners, it was found necessary to find out what motivated them to enroll in an e-course. A summary of their reasons given by the e-learners (n=244) are presented below under the four broad categories of better job prospects, self-paced learning, family commitments and the nature of course delivery.

<table>
<thead>
<tr>
<th>No.</th>
<th>Reason</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Better Job Prospects</td>
<td>142</td>
</tr>
<tr>
<td>2.</td>
<td>Self-Paced Learning</td>
<td>126</td>
</tr>
<tr>
<td>3.</td>
<td>Family Commitments</td>
<td>63</td>
</tr>
<tr>
<td>4.</td>
<td>Nature of Course Delivery</td>
<td>53</td>
</tr>
<tr>
<td>5.</td>
<td>Total</td>
<td>384</td>
</tr>
</tbody>
</table>

Since better job prospects was the main motivation for studying an e-course it implies that the e-course status of an e-learner does not depend only on personality but also on other factors that motivate e-learners to enroll in and complete e-courses. E-learning designers should have a multi pronged approach. The use of strategic and effective advertising that promotes increased and improved job prospects with e-learning will help attract the majority of learners and other prospective e-learners. It is important to design and execute the course such that the learner feels like he can relate the material taught to the corresponding career options that arise from completing the course. In this manner, the learner will be more motivated to complete the course and also participate in the online discussions, as they would want to obtain as much knowledge on the topic as possible. When choosing the delivery style of the course, it may be tempting to choose the new synchronous technology that is emerging in the e-learning market. However designers
should keep in mind, that students choose online learning due to the fact that there do not exist any timelines or rigid class timetables. By offering synchronous courses, although they may increase motivation through increased interaction, they are also taking away the true nature of e-learning which is anytime learning. Thus a good mix of different methods is required in order to make learning beneficial to the learner with their requirements in mind.

5.9.5.0 Improvements In E-courses Suggested By E-learners:
Major Findings And Implications

The e-learners (n=244) suggested changes they would like to have in e-courses based on their experience with e-learning. The improvements suggested by e-learners are useful for e-learning course designers and planners to consider when designing future e-courses.

<table>
<thead>
<tr>
<th>No.</th>
<th>Suggested Improvements</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Design</td>
<td>167</td>
</tr>
<tr>
<td>2.</td>
<td>Interaction</td>
<td>82</td>
</tr>
<tr>
<td>3.</td>
<td>No Changes required</td>
<td>10</td>
</tr>
<tr>
<td>4.</td>
<td>Total</td>
<td>259</td>
</tr>
</tbody>
</table>

The e-learner’s suggestions were broadly classified into improvements in the design of e-courses and increased and enhanced interaction required. The implications are given below.
Design:

The courses should be designed keeping in mind the students and their needs. The students find a course interesting when they can relate it easily to their experiences or current issues. Courses should as much as possible try and include current global issues in their examples. Podcasting is an interesting method of enabling mobile learning whilst updating the content of the course. This will enable students to associate the ideas being taught with their situation. A comprehensive help page should be made available to the students with 24 hours live help in order to help them get their queries answered with a quick turnaround time. Search functionality in the course to enable the learner to quickly find certain text when required instead of scrolling through the entire course. Students should also be able to log in/out and save their work with complete flexibly even in a sub-section of the main topic. This enables them to easily track their progress and return to where they left off without having to scroll through several pages of text. Courses should be designed with more interaction in order to enable kinesthetic learners to effectively learn in online courses. The use of holographic programs to increase simulation will improve the static design of some e-learning courses. This is possible with the interactive 3-D simulation learning programs being introduced in the education market.

To ensure that the course is free of any errors, it should undergo comprehensive testing for design flaws, content errors and any other errors that could hamper the delivery of the course. Thus the course should be logically organised and easy to navigate. An online repository and library of tools and knowledge should be provided to students to enable them to avail of this time saving facility. Traditional methods of assessment are no longer feasible in their present form in the Web-based classroom. Online assessments should be designed with the objective of checking the effectiveness of the course design and tutoring skills rather than just scoring the students. Students should be provided with self-help quizzes and continuous assessment methodologies to help students work
towards achieving a goal. Tutors should also include mid-term reviews to check how students are faring.

Thus when designing e-learning courses it should be known to make it more interactive instead of just the usual layout of pages. Programs such as Dimdim (is a web conferencing tool that let the user deliver synchronised presentations, whiteboards and web pages while sharing voice and video) and Etherpad (the only web-based word processor that allows people to work together in real-time as it updates each document every half a second, which means that a number of people can work together and see each other’s updates immediately) should be incorporated in e-learning courses in order to help students to interact. Screenr is an online screencasting tool, which allows the user to record on their Mac or PC, and then play on the Web or on an iPhone. Hand cutouts are a fun way to increase interaction and make e-learning interesting. These are useful tools that can be incorporated to improve the quality of e-learning.

The low retention rate means that most students sign up for e-courses without a proper understanding of what is expected of them and the amount of effort and level of competency that is required to undertake and be successful in a particular course. By using pre-course learning training and a flexible syllabus that is focused around the individual, the course designers will be able to set themselves up for success and all achieve success in terms of motivating students and retaining them through to course completion. Virtual seminars for students to better understand the course can also be used where students should be asked to make goals for them to accomplish from the course. Setting these goals and objectives, gives them a sense of responsibility to fulfill certain tasks and also helps establish clear guidelines of what is expected from the tutor and the student. Students should be given a timetable outlining discussions, educational expectations and contact time in order to avoid disagreements later in the course. Universities and school should work on collaborating their efforts by giving students the
opportunity to set up international networks with students in other universities and countries through university affiliation programs. This can be done easily in the online space and will lead to a wealth of knowledge being exchanged and a learning community being created at the same time.

A mix of synchronous and asynchronous components in the course to accommodate the needs of different students. Otherwise the course could be designed to be delivered either synchronously or asynchronously and students given the option to choose according to the preferences. Students should also be given the flexibility to move from one preference to another depending on their circumstances at the time of studying the course. Students should be taught how to self-learn, not what to learn. Using the concept of metacognition, students will learn how to learn and have an active control over their learning. By being aware of their cognitive process, students are better able to plan their learning and be able to self-manage their learning.

**Interaction:**

In order to get over the non-physical nature of a virtual classroom, it is important for the instructor to create social presence online which leads to an environment that is richer and more engaging for all involved. E-learners should be given a facility of being able to chat to lecturers and others through video, skype, messenger and other online methods of communication. Offline contact with students can also be carried out, when appropriate and where it is deemed necessary.

Discussions should be carried out in smaller groups (virtual classrooms) of about 10-15 students. These groups can be used to increase interaction through revision of the coursework, case studies and to carry out discussions on the topic, which helps facilitate a deeper understanding of the topic. Instructors can also use smaller groups to include extra
activities for fun and creative touches, which helps liven up the class session.
Students should also be encouraged to evaluate peers and give feedback to each other in the group. This helps students to get to know their peers and encourages social presence online.
Students should learn to respect each other in the online space and in their groups and communities. Only then can learning be encouraged and can learning truly take place. Rules of netiquette should be published and it is the tutor's responsibility to maintain the decorum of the class in a live environment; whilst keeping it highly interactive and lively at the same time. Balance is the key. Cost of course and fees should be suitable to all classes in society to increase inclusion and educational opportunities.

Overall as Weisburgh (2002) stated, it is important to keep costs low, make learning intuitive, track and measure learning and most importantly, communicate and build a sense of community among the e-learners.

5.9.6.0 Part III : Designing Ways To Adapt The E-learning System To Match E-learners Profiles

The suggestions by e-learning course designers and experts have been summarised and analysed in order to suggest ways to create a learning society by adapting the system to match the e-learner's profiles

5.9.6.1 Creating A Learning Society : Major Findings And Implications

Efforts are being made in India to form communities of learners. There are currently 206 Continuing Learning Centres in the country, each of which functions as a Centre for Teaching (learning for remaining non-literate and neo-literates); a Centre for Library, Centre for group discussion; Centre for vocational training programmes and skill up
gradation; Centre for extension facility of other development departments; a Centre for Promoting sports and adventure activities; a Centre for recreational and cultural activities; a Centre for information; and a Centre to Serve as a community centre. Thus these Continuing Education Centres provide self-directed learning involving the learner as an active participant and encouraging the development of a deep approach to learning that is lifelong. Sarva Shiksha Abhiyan (SSA) is the Government of India’s national flagship programme to achieve the Universalisation of Elementary Education (UEE) by making free and compulsory education to the children between the ages of 6 and 14 years. Saksham is a charitable trust that has been established in Delhi, India with the sole purpose of empowering people from marginalised sections of society, especially those with disabilities. It focuses on the theory of informal learning where students with disabilities are taught through observation, doing activities and looking at pictures in order to help them gain practical knowledge and understanding better. The Government of Andhra Pradesh chose to implement the NComputing solution to utilize PC capacity in order to bring computer access into 5000 government schools to benefit 1.8 million underprivileged children.

However, these documented attempts are still very few and should be increased if the goal of true learning societies where lifelong learning is encouraged is to be achieved. The current educational system is extremely rigid and based on the one-size-fits all model. It does not promote lifelong learning. The styles of school teaching currently do not guarantee that students are actually learning and understanding the content so much as just rote learning. This idea of schooling needs to change in order to make way for better methods of learning that is more tailored to the needs of the changing society today and the needs of the learners. Learning societies mean that every individual is learning in some form or the other. Currently the illiteracy rates in India are shockingly high and this needs to change if India wants to be a robust player in the dynamic environment based on globalisation. There is a
need to work towards creating communities of learners and learning societies where people of any age group and qualification come together to learn. It is necessary for schools to see themselves as part of a bigger community; in their local area, nationally and internationally. Schools should also understand the need for coordinating support systems for educating people of all ages and combining older styles of learning and teaching with the latest technology, which is the direction in which learning of the future is heading to. This will help bring about a positive, fundamental change in education and create an enriched environment (Dickinson, 2000).

The above findings imply that the educational system needs to undergo systemic change by looking at the system in its entirety rather than endeavoring to fix problems based only on certain parts of the system. A plan of action is required in order to create an educational system that promotes excellence and confidence among individuals. Since the educational system is an open system, a change in one part will affect the entire system either positively or negatively which means that any change that is introduced into a part of the system should consider the effect of the change on the entire system. Hence before introducing any changes, the implications and effects of the changes should be well thought through, not only about the affect of the changes on the area that the change occurs, but more on the sub-areas as well that are inter-related, especially in a system such as the educational system.

The systems approach is strongly advocated by thinkers like Pastuovic, Senge and Aggarwal to name a few. The Association for Education Communications and Technology (AECT) (1999) states that the systems approach should be used to develop a view of education more consistent with society's present and future needs. The suggestion is that in order to create an enriched environment to ensure learning in the future at all levels, there needs to be a change in the culture of the learning system to appreciate new methods of learning such as online
learning as being of equal or better value than traditional on campus education. The perception of distance education in India is that of inferior quality compared to traditional on-campus education. The level of competition is always high in the academic arena in terms of scoring high marks in examinations in order to be able to attain a place in a higher-level educational institution. Thus students and learners will most probably not willingly choose online learning if given an option to study using traditional methods and means of delivery. This is due to the fear that their online educational qualifications will not be regarded as highly as those learners with similar qualifications achieved through traditional means. This cultural mindset first needs to change as part of the systemic change in a push towards encouraging and promoting online learning. Institutions and even corporate organisations when looking to hire candidates should stress the equal opportunity in a candidate being selected irrespective of the manner in which they have obtained their academic qualifications. Only by advertising and practicing this norm, will the cultural mindset begin to change towards to a more accepting society that is open to change.

Education is moving towards being collaborative, based on real-time learning. The creative use of digital technologies in classrooms and other areas will ensure that every citizen is given an equal opportunity to learn. Community groups of Interest based on specialisations of courses offers the ability to use ICT to link students with similar interests and give them a common platform and place to interact, share ideas, innovations and discuss their issues. It will also help students interact with other students, not only within the confines of their classroom but all over the country and even around the world. It also gives teachers an opportunity to learn and develop as professionals, while parents and citizens learn and grow by participating in educational activities. Learning can be optimised with the sharing of knowledge and change directed ideas can be built upon through the constructive sharing of thoughts.
With regards to a learning society, it is important to focus not only on the creation but also on the quality management of the learning societies created. E-learning and its technology is extremely handy to us as an economical way of creating learning societies of the future to bring together people across cultures, nations and different backgrounds. Employing the techniques of knowledge management in education will see the systematic creation, sharing and storage of knowledge for more collaborative use in the future.

The changes in ICT and digital technologies can help in the creation of learning communities for people to come together and learn irrespective of their physical, geographical or social restrictions. Extending learning to include people in rural areas is of uttermost importance in order to increase literacy rates and make India a talented country to face the changes of the future. The formation of communities of practice based on the needs of the people in rural areas will facilitate the spread of education and learning to these hard to reach groups. True learning societies can only form when every citizen is an educated citizen.

5.9.6.2 Adapting The System To Match E-learners Profiles

Experts believe that in the future, e-learning will level the professional playing fields with governments using e-learning for citizen skill development. The rapid changes in skills requirement will lead to the need for learners to access constant on-demand learning based on a micro learning concept rather than complete course packages. Self-paced, self-selected e-learning should become an integrated work process rather than something separate.

The learning and teaching landscape is believed to change from individualised learning to collaborative learning structures where there exists an open network for the sharing and distribution of knowledge and knowledge sources. This will be through the formation of rich
learner communities. It is necessary to provide pro-active support for e-learners by putting them and their needs at the heart of e-learning design. The use of technology is needed to achieve full personalisation of courses. Personalising e-learning will give learners a sense of presence and an online identity so that they are able to interact online comfortably. The research conducted by the author showed a correlation between synchronous delivery of online courses and a higher retention rate among students. This is probably because students who study in a synchronous environment are constantly motivated through the real-time interaction and dialogue exchanged with their peers and the instructor and in turn this helps create a feeling of community in the online space. This fact is mirrored by Annetta & Holmes (2006) who noted that synchronous learning environments provide rich opportunity for building learning communities and virtual learning environments allow students a sense of presence within their class. This is the only way that learning will become truly learner-centric and adaptable for the learner.

The thoughts of the experts suggested that the future of e-learning is based on a blended learning solution which enables learners to learn the basics of their content individually according to their capacity and speed, while the interactive portions and discussions can be carried out in face-to-face sessions. This on the whole is thought to lead to higher retention among e-learning students by giving learners an opportunity to form personal relationships during their face-to-face sessions and then extend their relationship further through their online discussions and web seminars.

In order to offer truly personalised education, it is necessary for the instructor to learn about each student. Hence setting up an induction meeting with each student to learn about them, their learning style, their profiles and their personality will help the instructor adapt their teaching methodology and level of communication and interaction according to the individual’s preferences. These meetings can also be
used to familiarise students with the aims, objectives and activities of the university and the methodology of online learning.

In order to increase the retention rates in online learning it is necessary to adapt the e-course to be able to include the learning needs of different types of e-learners based on their personalities. **Mentors should provide counseling and should be trained to use the mentoring guidelines** when recommending courses and guiding e-learners. Before students commit themselves to an e-course, there should be mentors provided to educate them about the roles and responsibilities of e-learners.

1) Every prospective online student should be made to take a personality type test in order to determine their personality and suggest courses and areas of interest that has proven to be interesting for a certain personality type.

2) Mentors who are trained in e-counseling or counseling for online students will then be able to guide students appropriately through mentoring guidelines on their choice of course and make it the best fit to their personality type.

3) Once the personality type is known, the mentors will choose the course design, type of instruction and communication which is most beneficial for the particular student based on their individual profiles and personality type.

By tailoring the course in this manner, it will lead to more learner-centric education and an advantage for the students through effective mentoring.
The educational system should work towards creating a caring society with citizens who believe in an equal educational opportunity for all which will lead to a win-win situation. The gap between the haves and have-nots needs to be re-designed in order to change their sentiments towards the importance of education. This will enable the marginalised to channel their thoughts and intelligence on more fruitful pursuits rather than concentrating on their feelings of hopelessness. Poverty and inequality exists due to a self-centred approach. Collaborative learning helps us change our view to more worldly horizons where we think more collaboratively breaking down the perception of competitiveness between nationalities and even among gender, caste, etc. This way we can focus on building learning societies instead of nations. Learning is the healthiest response in a world of rapid change and contributes to the concept of lifelong learning that is required in today's rapidly changing society. The unlimited resources that e-learning has to offer can be used to create learning communities in society that eventually lead to and encourage lifelong learning.

In order to achieve the best results in terms of online student's completion rates, the system should be adapted to meet the individual needs of e-learners according to their personalities. Depending on the mix of personality types, the counseling and mentoring facilities can be changed in order to suit the individual needs to the learners. For example, the extraverts need constant social interaction and collaborative group learning. This is where the concept of the learning society is of significance and these learners in this society would be able to interact and gain knowledge whilst exchanging ideas with other learners in a common space that is the learning society. Thus in the future, through the creation of these societies, learners who have characteristics that are now deterring them from completing their online courses due to feelings of
isolation and de-motivation, to be energised through the flow and exchange of communication, using the developments in technology, which in turn would lead to an increase in the number of successful learners completing online courses, irrespective of their personality types.

Besides the personalities of e-learners, this research has also investigated the reasons e-learners enroll in an e-course and has presented their suggestions for improvements required in e-courses. Thus the e-learning course designers and planners need to take a multi-pronged approach when designing ways to adapt the e-learning system to match not just the personalities of e-learners but also to address the reasons that motivate them to enroll in e-courses and incorporate the improvements suggested by them. Only then can a more humane, personalised and flexible system be developed that matches the individual personalities of e-learners to create the best possible and learner-centric system for future learning.

5.11.0.0 Suggestions For Future Research

This research found the role of e-learner’s personality on their effectiveness in an e-course and has suggested ways of adapting the present e-learning system to match learner’s profiles. Further research in the following areas will provide greater insight into the personalisation of e-courses, which is what the future of e-learning is about.

1) It is realised that certain personality types are more suited to online learning than others. In trying to achieve a best ‘fit’ in the online space, would the teacher- student relationship prove to be more fruitful if the personality of the instructor was matched to the personality of the learner?
2) An experimental study to compare the personalities of students and their effectiveness in the same course taught online and taught in a traditional classroom.

3) It would be interesting to find out if there is an association with the personality of an e-learner and the specialisation of the e-course have an effect on the effectiveness of a learner in e-learning. Specialisations of the courses also play an important role as counsellors and mentors align student’s needs with their aptitude, attitude and interest and endeavour to match student’s needs to their abilities.

4) A comparative study on the effectiveness of mentoring tailored to student personalities and general mentoring in increasing student retention in an e-course.

5) A study of possibility of the creation of learning societies based not just on e-learner’s personalities, but also their learning styles and type of thinking.

6) A study of the effect of an e-learner’s creative personality on the e-course status

7) The effect of ‘Communities of Interest’ in increasing the interaction between e-learners of a particular e-course

8) The effect of setting up ‘Communities of Practice’ to increase the literacy and access to technology especially for those in rural areas.

9) Study the use of language technology and how it will affect group learning in online courses.
10) The use of Nanotechnology in knowledge sharing and information processing with the use of nano devices that will enable the direct linking of people and technology and its effect on e-learning.

11) The integration of Artificial Intelligence in e-learning systems in its endeavour to make e-learning systems into intelligent systems that are able to predict learner behaviour instead of being reactive, passive systems.


13) Setting up knowledge management frameworks for use in the online space.

14) Exploring ways of designing the e-learning system to accommodate learner behaviour styles. Better learning can be achieved hopefully by identifying the difficult learner behaviours and adapting the system to them.