



OPTIMAL LEARNING SYSTEM TO EMPOWER THE FUTURE GENERATIONS - A STUDY WITH REFERENCE TO COIMBATORE INDIA

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ABSTRACT

In this modern era educational institutions have come up with lots of up gradation and modifications in learning system. Hence, the Researcher planned to conduct a statistical analysis among the student's community, with Coimbatore as a specific region in India. This entire research paper deals with weather; a) The institutions are supporting the students with effective electronic learning atmosphere; b) Students have the attitude towards electronic learning system; c) What kind of changes needs to be accompanied by the management to produce employable students' community for the society? Finally suggestion provided to them how to make environment better customized by taking support from technological development. Since there are lot of research papers deals with topic of our research work, unique identification has made by researcher to adopt facilities which they have in progress along with slight modification and the tailor made construct system will enhance educational system with better endurance.

Keywords: e-learning, student's perspective, educational optimization, opinion mining, customization, tailor made construct, learning system.

1. INTRODUCTION

Today, the educational system is under a major paradigm shift from traditional learning system to electronic learning system. Through recent times, the information and communication technology (ICT) has steadily become a part of the curriculum in numerous educational institutions; i.e. the eLearning, which utilizes internet technology in delivering learning experiences. A form of this delivery method called the Learning Management System (LMS) mediates both the administrations of course instruction and material handling along with tracking of the student progress [1]. As per the report of Directorate of Technical Education Tamilnadu, India and Department of Economics and Statistics of Tamilnadu India, there are around 553 engineering colleges in which 67 are situated in the study area. Along with this 82 self financed arts and science colleges affiliated to the Bharathiar University (State University of the Study area) are also considered for the study. Globally it is an accepted fact that the internet usage has grown tremendously in the day-to-day activities of human life. The technology and life has become the two sides of a coin inseparable from each other. Especially when it comes to knowledge sharing and recent trends in learning system, the students prefer to be on the net to acquire the knowledge [2]. Change is the only constant factor, and based on that, educational industry has come with lots of modernization techniques which produces better platform for learner's community.

From the educational perspective, there is a change in the way education is imparted, and there are multiple channels that have come in for a holistic approach in education. In this scenario there is a better interaction through internet technologies, which supplements the revolution of ICT to deliver a complete course. The moment improvement happen in content, e-content comes in and also gives huge opportunity [3]. The constant changes in the social structure have affected the educational system and made the search of new strategies and methods obligatory. The most important one of these searches have been the use of computers. As this century is regarded as the century of information, the theories and methods formed in the centuries in the fields of producing, transmitting, providing and using the information have experienced radical changes. In these terms, information technologies in higher education have dramatically changed the scope and type of education and teaching [4]. In American, European and Australian continents they are moving ahead with electronic learning courses where the students are given the preferences to choose the courses based on the context of demand and supply progress. Especially Asia pacific region countries like Malaysia, Thailand, United Arab Emirates are marching on the footmarks of the above mentioned continents, the specific report say, the India is going to excel all those service in the educational system. But it is an assumption, and the factor to be accepted is that much growth is not inculcated in to the educational practices.



2. LITERATURE REVIEW: LEARNING TRANSFORMATIONS

Prior literatures mostly focused on the behavioural analysis and technological section. Considering e-learning as an innovative technology, the research combined the student's perspective analysis model along with technical support provided by web environment in order to analyse the behaviour and utilization in the non-utilized concealed institutions. Based on that scenario the modification will be mapped to the stake holders (Students, Faculties and Institutions). There are certain theories which researcher would like to avail

for his further consideration to provide a solution, those are listed here the Theory of Reasoned Action TRA [5] the Theory of Planned Behavior TPB [6], the Innovation Diffusion Theory IDT [7], the Technology Acceptance Model TAM [8], the Self-Determination theory SDT [9], the Model of Personal Computer Utilization MPCU [10], Social Cognitive Theory SCT [11] Salvador Ros et.al, characterize the three LMS (Learning Management System), generations using several properties, including interoperability, communication, methodology and learning experience.

Table-1. The three generations of learning management systems [12].

Generation	Interoperability	Communication	Methodology	Learning experience
First	None	None	Self-Contained	Self-Contained
Second	Content Plugging and add-ons	Enrolled Student-Instructor	Teacher-Centered	Homogeneous
Third	Content and tools Service Oriented	All Students-Instructor	User-Centered	Heterogeneous

From the above Table-1, the first generation encompasses ad-hoc proprietary solutions and focuses on content distribution. This generation is associated with the concept of computer-aided instruction systems. Such learning systems are self contained and allow for little to no communication or interaction between students and teachers. The second LMS generation is based on so called Class Room-Based learning system, which provides centralized learning from content distributed by lecturers. This system enables communication between instructor and student's and employs various technologies to support learning activities. Currently the e-learning platform belongs to this second generation. The third generation LMS are service oriented letting the users easily create individualized and reusable learning contents. In another dimension it's called Personalized Learning Environment [12]. It is a widely held assumption that learning style is a useful model for quantifying user characteristics for effective personalized learning [13]. The use of personalized e-learning and Adaptive Education Hypermedia (AEH) has become increasingly important in recent years, with extensive research being devoted to find different ways of tailoring the learning experience for individual students [13]. Blended with collaborative learning can assist students to feel more interactive and also exerts a positive influence in terms of motivation, behaviour and self determination, as well as engagement in learning activities [14]. These web-based systems also know as course management systems fulfil three goals: 1) allow instructors to share learning resources such as lecture presentation slides; 2) make it possible for lecturers to conduct online exams or evaluate students learning by grading their assignments; 3) provide an interactive

environment through the discussion forums to encourage collaborative learning [15]. Comparing these three generation forum with real time data set of specific region will provide a clear cut understanding where the locality stands in the terms of educational system, augmentation based on the findings the researcher would like to suggest the following implementation on those environments leads to the betterment of the elearning system.

3. RESEARCH METHODOLOGY

The objective of the study is to glue the user expectations. Hence to achieve the researcher developed a quality-assured, a well structured questionnaire to collect the data on various aspects and descriptive research methodology was used to analyse the data collected so, and a findings where charted out. As Robson states "design is concerned with turning research question into projects" [16], so naturally it follows that the research question must be clear and ambiguous at the start of any experimental design.

3.1 Type of Research

This research gives an idea regarding the electronic learning existences and student's preference to shift ahead with technology oriented learning system; in Coimbatore India, where this location is known to be educational hub. This district has nearly 67 Engineering colleges' affiliated to Anna University Chennai and 82 Arts and Science Colleges which are affiliated to the Bharathiar State University. A quantitative approach was used in this research and the research is descriptive in nature. Student's perception towards electronic learning was identified as dependent and Geographical location;



Infrastructure and Management were identified as the independent variables.

3.2 Populace and Taster

The research populace is encompassed of students those who are currently pursuing or completed their education. The research taster was composed of 500 participants who were determined by considering their college identity as inputs. Most of the inputs are retrieved by; in person from various colleges and few of the samples collected through electronically. Demographic properties concerning the 500 data for whom data were collected within the scope of the research. The distribution of the research sample by means of sex is nearly equal (43.2% Male 56.8% Female). The stream wise collection of data from science and humanities, engineering and management are in the ratio of (56.6%, 19.6%, and 23.8%). Location classified in general term as rural, urban and semi urban are in the ratio of (33.0%, 35.6% and 31.4%). District data reflected as Coimbatore, Erode, Trippur and others (76.6%, 15.6%, 6.6% and 1.2%).

3.3 Measurement and scaling

The conceptualization and development of the questionnaire was based on the existing literature. A Choice Based, Ranking and typical 5-point Likert scale were used to measure the constructs presented in the survey. The survey instrument was refined during a pilot study to ensure the internal consistency of the measured instrument, with the involvement of 500 students.

The questionnaire contained 37 items in total. The first part of the instrument contained 8 questions about demography of the respondents such as age, gender, education, stream etc. The second part of the questionnaire contained 9 questions about characteristics of the students on electronical gadgets; third part of the questionnaire contained 5 questions to study, the student's perspective towards traditional learning. Fourth part of the questionnaire contained 5 questions, for identifying the support facilities from the institutions. Fifth part of the questionnaire contained 8 questions on student's opinion on electronic learning incorporation. However sixth part of the questionnaire contained 2 questions to take the open views of the electronic learning system.

Convenience sampling approach was adopted in order to collect the primary data and it took a period of one month for the entire collection of data. Around 180 respondents were contacted electronically for data collection. The individuals targeted for the collection of data for this research project were Under Graduate and Post Graduate students in Coimbatore.

During a four-week period, 547 respondents completed the survey. A total of 547 responses were collected. Forty seven responses were discarded due duplicate submissions or incompleteness, a net sample of

500 (Size is determined based on the sample standard deviation) usable questionnaires was used in this study.

3.4 Tools used

For the purpose of data analysis, Statistical Package for Social Sciences (SPSS) version 20 was used. Statistical tests were applied to check the reliability (skewness and Kurtosis Test) and normality (cronbach Test) of the data, Anova, Chi Square Test and Weighted Average Method were conducted in order to see the impact of independent variables over the dependent variable.

3.5 Major factors of analysis

F1: Students using Internet generate positive attitude towards knowledge up-gradation (Table-4).

F2: Educational qualification of the respondents has no relationship with the content delivery system (Table-21).

F3: Students learning are significantly influenced by e-learning Management System (Table-14)

F4: Students willing to have customized learning environment (Table-19)

F5: Institutional support plays vital role for inducing student's behavioural pattern towards electronic learning system (Table-18 and Table-19).

4. RESULTS AND DISCUSSIONS

From the study when the demography of the respondents is analyzed; it is found that 43.2% of the respondents are male and 56.8% of the respondents are Female. Most of the respondents 97.2% are above 20 years old and 2.2% of the respondents are below 20 years shows that the researcher has selected students of right age for this study. Among this 91.6% are post graduates who are the real users of electronic learning system at the moment. Almost equal weight age has been given to select the samples from urban, semi urban and rural areas with 35.6%, 31.4% and 33.0% respectively. Around 76.6% of the respondents are from Coimbatore followed by 15.6% from Erode, 6.6% from Trippur and 1.2% from other areas. In the total sample size around 56.6% of the respondents are from science and Humanities stream followed by 23.8 respondents from Management stream and 19.6 from Engineering. Around 40% of the respondents are using internet for more than 5 years for learning followed by 30.4% of the respondents are using internet for less than five years. The sample contains more of studious students representing 44.4% who have scored more than 71% marks followed by 22.8% scored between 66% and 70% and it is learnt from the study that the great number of students 69.8% have a good networking relationship with more than 500 relations in their social media network.



Student's characteristics

Table-2. Student's electronic gadgets usage.

Products available	No. of respondents	Percentage (%)
Smartphone's	116	23.2
Laptop	70	14.0
Desktop	30	6.0
Tablet	3	.6
More than one Device	281	56.2

Table-3. Student's electronic gadgets accessing places.

Internet accessing places	No. of respondents	Percentage (%)
College Campus	88	17.6
Smart Device	140	28.0
Internet Café	147	29.4
Home	125	25.0

Table-4. Social networking sites utilization behavioural.

How you spent time in internet	No. of respondents	Percentage (%)
Using SNS for Informal Communication	11	2.2
Using SNS for Formal Communication	72	14.4
Retrieving useful information for up gradation	240	48.0
Obtaining relevant information for education	80	16.0
Others (Mentioned as chatting by respondents)	97	19.4

Table-5. Period of Internet Utilization.

Period of using internet	No. of respondents	Percentage (%)
Less than 1 Year	51	10.2
1-2 Years	10	2.0
2-3 Years	59	11.8
3-4 Years	137	27.4
>5 Years	243	48.6

Table-6. Student's Library Habitual.

Usage of library	No. of respondents	Percentage (%)
Once in a week	110	22
Once in a month	81	16.2
Frequently	163	32.6
Rarely	121	24.2
None	25	5

Institutional support

Table-7. Status on student's material collection using electronic forum.

Usage of ELS materials	No. of respondents	Percentage (%)
Frequently	249	49.8
Moderately	224	44.8
Rarely	27	5.4

Table-8. Institutional teaching behavioural.

Mode of Teaching	No. of Respondents	Percentage (%)
Talk with chalk	62	12.4
PPT	72	14.4
Both	366	73.2

Table-9. Electronic learning system availability in institutions.

Availability of ELS	No. of respondents	Percentage (%)
Yes	197	39.4
No	303	60.6

Table-10. Types of Electronic Learning System Incorporated in Institutions.

Type of ELS	No. of respondents	Percentage (%)
Moodle	35	7.0
Coursera	54	10.8
Blackboard	0	0.0
Webtrain	57	11.4
None	354	70.8

**Table-11.** Institutions network mode.

Media of internet access	No. of respondents	Percentage (%)
Wi-Fi	314	62.8
LAN	12	2.4
Both	160	32.0

Table-12. Mode of communication circulation across institution.

Mode of circular	No. of respondents	Percentage (%)
e-Mail	362	72.4
Discussion Board	23	4.6
Notice Board	115	23.0

Table-13. HENRY GARRETT ranking method.

Traditional methodologies	Rank
Lecture method	1
LCD-PPT	2
Activity based facilitation	3
Assignments	4
Seminars	5

(Students Preference on Traditional Learning Delivery Method)

As far as profile of the students with the relationship to the electronic learning system is concerned statistics proves they have a high accessibility and equipments to have a better relationship. Around 56.2% of the respondents have minimum of two devices to access the net to upgrade their knowledge. The access points are unfortunately outside the campus only 17.6% using college campus where as rest of the respondents use either home or commercial enterprises. Hence the colleges have to find a better solution to offer a better environment for the students. Only half of the learners are using the hard copy (Library) as a source of information and update their knowledge. The remaining are very rarely or never use the library. The ease of accessing the internet may be the strong reason to avoid the usage of library. Almost 80% of the students are using the internet for more than three

years. As the IQ in IT of the Gen-X (Generation-X) students is high, the exposure to the internet for a smaller duration also gives a higher understanding on the knowledge acquisition. This also has improved the awareness on Social Networking Sites (SNS) and its usage in formal and informal communication to share the knowledge among the learners and the facilitators.. Once a better tool or a method is available the productivity may go on the positive side. Among the internet users of the respondents almost 95% utilize the materials available in the cyber space to the maximum extent to upgrade and share the knowledge they acquired.

When the student's characteristics are concerned it is found that more around 56.2% of the students hold more than two electronic gadgets through which they can access the internet. And around 57.4% of the learners use either their smart device or internet café as their accessing point. And also around 35.4% of the respondents use the social networking sites for their knowledge up gradation and information sharing. Rest of all use it for informal communication. Most of the learners (48.6%) of the respondents have more than five years of experience in using internet. It is also found that around 94.6% of the respondents use the electronic forum for the material collection either frequently or moderately. This has a contradictory reference with 35.4% usage for knowledge up gradation, shows that the respondents unawareness on the usage.

It is statistically evident that around 73.2% of the institutions use both electronic and conventional learning material as a mode of teaching. Whereas only 12.4% are still lynching on to the old talk with chalk method. And also it is noted that 60.6 % of the institutions doesn't have facilities for elearning system which provides a wider scope for the researcher to provide or suggest a better tool / system to enact elearning system. Moodle, Coursera, Blackboard, Webtrain are the various tools used in the institutions where elearning system is already existing. When we look at the delivery methods adopted by the institutions in general they use Lecturer Method; LCD-Projector; Activity Based; Assignment Submission & Seminar. But for the preference of the students both traditional learning system and electronic learning system attracts equal weight age with slight variation due to the features of the methods. With technical advancements around 62.8% of the campuses were Wi-Fi enabled, which creates easiness for the students to access the internet. As for as administration is concerned; the usage of e-mail is becoming popular among the institutions with 72.4% support.

**Table-14.** Traditional learning vs. electronic learning.

In which learning aspects do you feel more knowledge has been transferred	Traditional learning	Electronic learning
Content	57.6	42.4
Accessibility	28.2	71.8
Clarity	48.2	51.8
Demonstration	34.6	65.4
Illustrations	32.6	67.4
References	32.2	67.8
Linkage	33.4	66.6
Cost	41	59
Interaction	61.8	38.2
Involvement	55.8	44.2
Reliability	45.8	54.2
Outcome / Effectiveness	43.4	65.6
Technology Usage	20.6	79.4

From the above Table-14. When traditional learning is compared with electronic learning it creates a wide variation as per the factors for knowledge transfer is concerned. When content is concerned it is clearly evident that 57.6% of the learners prefer traditional learning system. Likewise Interaction with 61.8% and Involvement (55.8%) prefer to have traditional learning system. In Class room environment learners felt that the transfer of knowledge provided by the facilitator plays a vital role. As one to one interaction, removes the barrier of distance along with the involvement of the respondents undoubtedly chosen the traditional learning system as a better choice. As for as accessibility concerned, the

respondents prefer elearning system and it is supported by 71.8% of the learners. The electronic learning system has a better preference for the following factors: Clarity (51.8%), Demonstration (65.4%), Illustrations (67.4%), References (67.8%), Linkage (66.6%), Cost (59%), Reliability (54.2), Outcome/Effectiveness (65.6) and Technology usage (79.4%). Since all the above factors involves more of technology the ease of use increased and demonstrate a higher preference for the younger generation. The familiarity with the electronic gadgets and the frequency of availability enables the younger generation towards electronic learning system.

Table-15. Reliability and normality statistics.

Factors	No. of items	Cronbach alpha	Skewness statistics	Kurtosis statistics	Mean	S.D
Traditional Learning Methodology	5	0.689	0.176	-0.690	3.20	0.751
students perspectives on e-learning	3	0.842	-0.590	-0.092	3.79	1.049
Traditional learning	5	0.719	0.264	-0.366	3.35	0.745

The above Table-15: shows the reliability of the data, which was tested using Cronbach's alpha. The acceptable value for Cronbach alpha is 0.6. As for all the variables, the value of Cronbach alpha is above the acceptable value, this shows that the data collected from the survey is reliable.

The above table shows the normality analysis of the data. Skewness and kurtosis were calculated to

ascertain the normality of the data. The values of both of these descriptive i.e. skewness and kurtosis for all the variables fall between the acceptable value of +1 and -1 hence, it portrays that the data is normally distributed.

The above Table also shows the mean values for the variables. The average respondent score on overall factors was found to be 3.20 on a five point Likert scale, with 1 the least favourable and 5 the most favourable. This



is above the neutral score of 3, which implies that respondents' overall attitude towards e-learning is positive.

Weighted average method

Table-16. Features expected from an electronic learning tool.

Factors	Weighted average	Rank
Subject related material	76.5	1
Faculty discussion forum	76.4	2
Individual performance assessment	75	3
Online test	74	4
Student discussion forum	60	5
Expert opinion In specific subjects	54.2	6
Online assignment submission	30	7

From above Table-16, it clearly represents the expectation of learners' community. It shows that in ELS though anytime anywhere accessibility is available the content need to be improvised and more of subject related material can be made available, which is proved through the weighted average of 76.5 at Rank No.1. In the absence of the one to one interaction a faculty discussion forum has become an unavoidable factor to increase the effectiveness of the elearning system with the weighted average of 76.4 standing at Rank No.2. Though the material and forum is available to improve the cardinality, individual's performance need to be analyzed to know the understanding of the student. Hence the individual performance assessment has secured the third Rank with weighted average of 75. The fourth factor opted is the

online test that depicts the accepted level of performance/understanding after completing the specified course or study material with the weighted average of 74. The Younger generation is also keen on having a peer group interaction through the student discussion forum as it motivates and increases the competitiveness among them with the weighted average of 60. Contradict to the general notion on the expert's opinion; the statistics opines the sixth rank with the weighted average of 54.2. This may be due to the lack of experts in elearning system, which may be a concern for the researcher to put more emphasize. Finally to the reality the student community is reluctant to the assignments; hence it is the last preference with least weighted average of 30.

Table-17. Student's perspective on traditional learning method.

S. No.	Traditional learning methodology	5	4	3	2	1
1	I am comfortable with the traditional learning methodology	10.2	30.2	34.6	17.6	7.4
2	I am very sharp in completing the task given by faculty	6.2	23.4	30	25.6	14.8
3	I am ready to take up an extra add on courses through electronic learning if provide by your institution	1.2	20	23.2	25.4	30.2
4	In traditional learning are you receiving more inputs on up to date:	4.6	25.8	31.6	26.4	11.6
5	Do you think are you out dated with your educational system.	7.6	23.2	28.2	24	17

5 Strongly Disagree 4. Disagree 3. Neither agree nor disagree 2. Agree 1.Strongly Agree

From above Table-17: When the 5 point Likert scale is used to measure the perception of students on the traditional learning methodology it is found that around 64.8% of the students were on the negative perception (i.e. low acceptance). When completing the task given by the

faculty is analyzed it is found that around 55.6% are slightly on the positive edge. Almost 55.6% of the respondents are highly motivated or perceived to have an add-on course through electronic learning. This shows the positive perception for the inclusion of electronic learning



system in to traditional learning system. When a quantity of input and the updation of the educational system are

concerned most of the students have a neither positive nor negative opinion.

Table-18. Student perception on institutional support.

S. No.	Factors	5	4	3	2	1
1	My institute enable with internet facility where all the students access internet frequently	6.8	10.8	20.4	22.8	39.2
2	My Institute allow me to access internet on my own device like mobile, laptop	1.4	8.2	22.2	28	40.2
3	My institute encourage online facilitation system	3.4	7.8	33.8	25	30

5 Strongly Disagree 4. Disagree 3. Neither agree nor disagree 2. Agree 1. Strongly Agree

From above Table-18: When the support extended by the institutions were analyzed through 5 point Likert scale, the students have strong perception on both, the support of the institution to use the internet facility as

well as own devices (supported by 39.2% and 40.2% respectively). But only an average acceptance is given for the online facilitation system provided by the institution shows that the institutions have to improve on this area.

Table-19. Opinion on eLearning implementation.

S. No.	Factors	5	4	3	2	1
1	Do you feel electronic learning as a better method than traditional learning	8.6	15.2	21.8	41.6	12.8
2	Do you think a combination of both electronic and traditional learning system is required	2.4	16.2	20.6	36.4	24.4
3	Does your institution encourage electronic learning?	1.4	1.6	41.2	30.6	10.8
4	Do you think electronic learning improve your competitiveness?	2.2	11.6	31.8	44.2	10.2
5	Do you think electronic learning system leads to deviations	6.2	22.2	33.6	32.8	7.2

5 Strongly Disagree 4. Disagree 3. Neither agree nor disagree 2. Agree 1. Strongly Agree

From the above Table.19: Around 54.4% of the respondents have a very high opinion to implement the elearning system over the traditional learning system. 60.8% of the students have a positive opinion for the combination of both elearning and traditional learning systems. Though the institutional encouragement for elearning system seems to be positive 41.2% of the respondents are in the neutral status. But 54.4% of the respondents are very clear to say that elearning improves their competitiveness. When the perception of the students on the electronic system leads to deviation is concerned either it shows neutral or slightly positive result.

Test: Chi-Square test

Hypothesis

HA0: Null hypothesis Educational qualification of the respondents has no relationship with the e-learning Management System

HA1: Alternate hypothesis Educational qualification of the respondents has relationship with the e-learning Management System

Level of Significance: The level of significance is fixed as 5% and therefore the confidence level is 95%.

**Table-20.** Cross tabulation of educational qualification and e-learning methodology.

Qualification	Influence on elearning - better method					Total
	Highly dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Highly satisfied	
Graduate	0	1	11	3	27	42
Postgraduate	43	75	197	106	37	458
Total	43	76	208	109	64	500

It was noted from the above Table-20: that the majority of the respondents are post graduates, in which 458 Students are post graduates and 42 Students are

graduates. Majority 39.4% of the respondents neither satisfied nor dissatisfied with the e-learning management system.

Table-21. Chi-square test: Educational qualification and e-learning methodology.

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	110.991^a	4	.000
Likelihood Ratio	77.077	4	.000
Linear-by-Linear Association	53.242	1	.000
No of Valid Cases	500		

From the above Table-21: it is clear that the Asymp. Significance value is 0.000 which is less than 0.05 and hence alternate hypothesis is accepted. So there is a significant relationship between educational qualification of the respondents and e-learning management system. 64% of the graduates are highly satisfied with the eLMS and 39.4% of the respondents are neither satisfied nor dissatisfied with the e-learning management system

Hypothesis

HB0: Null hypothesis Stream of the respondents has no relationship with the content delivery system

HB1: Alternate hypothesis Stream of the respondents has relationship with the content delivery system

Level of Significance: The level of significance is fixed as 5% and therefore the confidence level is 95%.

Table-22. Stream of the respondents and the content delivery system.

Stream	Knowledge transfer traditional/Elearning-content		Total
	Traditional learning	Electronic learning	
Science and Humanities	174	123	297
Engineering	52	32	84
Management	62	57	119
Total	288	212	500

It was noted from the above Table-22 that the majority of the respondents prefer traditional learning in terms of content, in which 57.6% of the respondents prefer traditional learning methodology. Thus, majority (61.9%)

of the engineers prefer traditional learning methodology followed by 59% of the science and humanities students prefer the traditional learning methodology.

**Table-23.** Chi-square test result: stream of the respondents and content delivery system.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	2.673 ^a	3	0.445
Likelihood Ratio	2.662	3	0.447
Linear-by-Linear Association	.752	1	0.386
N of Valid Cases	500		

From the above Table-23, it is clear that the Asymp. Significance value is 0.445 which is greater than 0.05 and hence null hypothesis is accepted. So there is no

significant relationship between stream of the respondents and the content delivery system.

Table-24. Chi-square result between location of the respondent and electronic learning aspects.

No.	Hypothesis	Results	Reasons
H1	Location of the respondents and the Expectation on Electronic Learning Tool-Subject Related Material	Supported	Chi Square results, Pearson Chi-Square Value= 40.175, Asymp. Sig. (2-sided) = 0.000
H2	Location of the respondents and the expectation on Electronic Learning Tool-Online Test	Supported	Chi Square results, Pearson Chi-Square Value= 16.830, Asymp. Sig. (2-sided) = 0.001
H3	Location of the respondents and the Expectation on Electronic Learning Tool-Online Assignment Submission	Not Supported	Chi Square results, Pearson Chi-Square Value= 6.296, Asymp. Sig. (2-sided) = 0.098
H4	Location of the respondents and the Expectation on Electronic Learning Tool-Faculty Discussion Forum	Supported	Chi Square results, Pearson Chi-Square Value= 48.209, Asymp. Sig. (2-sided) = 0.000
H5	Location of the respondents and the Expectation on Electronic Learning Tool-Student Discussion Forum	Supported	Chi Square results, Pearson Chi-Square Value= 25.177, Asymp. Sig. (2-sided) = 0.000
H6	Location of the respondents and the Expectation on Electronic Learning Tool-Individual Performance Assessment	Supported	Chi Square results, Pearson Chi-Square Value= 28.474, Asymp. Sig. (2-sided) = 0.000
H7	Location of the respondents and the Expectation on Electronic Learning Tool-Expert Opinion	Supported	Chi Square results, Pearson Chi-Square Value= 28.421, Asymp. Sig. (2-sided) = 0.000

From the above Table-24: shows the results of Chi-Square Test for association between the location of the respondent and seven various aspects of electronic learning system. Six of the seven assumptions were

supported by the data that shows a positive association and proves that the location influences the expectation of the e-Learning Management System.

**Table-25.** Analysis of variance between the demographic variables and the e-Learning Management System.

Demographic factor	Dependability	sum of squares	df	mean square	f	sig.
Gender of the respondents	Between Groups	.720	1	0.720	0.597	.440
	Within Groups	601.030	498	1.207		
	Total	601.750	499			
District of the respondents	Between Groups	8.883	4	2.221	1.854	0.117
	Within Groups	592.867	495	1.198		
	Total	601.750	499			
Annual Income of the respondents	Between Groups	5.389	4	1.347	1.118	0.347
	Within Groups	596.361	495	1.205		
	Total	601.750	499			

A one way ANOVA test was conducted to analyze the variance between the demographic variables and the elearning management system. From the result it is found that the significance of the three factors like gender, district and annual income of the respondents are higher than the 0.05 level proves that it does not vary with the preference towards elearning management system.

5. LIMITATIONS

This study has certain limitation, based on the geographical location and access facility. Primary focus has been given to prepare a concrete base to analyze the present scenario on the various developments for the implementation of eLearning in the Institutional premises. Due to the lack of infrastructure in many of the Institutions, the researcher could not collect more input from the on-line method. Hence the personal interview method has become the major source of information. This limited the study area to the rural and semi-urban area. Due to lack of responsiveness the researcher could get back the responses from only around 40% of the institutions out of 82 Arts and Science colleges and 67 Engineering colleges.

Also the earlier studies relevant to the topic gives much input on the availability of elearning system the statistical evidences are not conducive to compare the traditional learning system in the respective areas.

6. CONCLUSIONS

The researcher has taken all the steps to identify the various pros and cons of traditional learning system and electronic learning system. Various tools were employed in different angles to find the strong support to create a solid learning management system. From the analysis he could perceive a strong support on the expectation and development of the electronic learning system. Most of the results suggest that the combination of

traditional and electronic learning system will give a better solution to improve the quality of education. In the prospective of the researcher the geography, Infrastructure and Management has three components and have been analyzed and found that in the six of the seven aspects the location is supported by electronic learning system. Whereas only the Online Assignment Submission; has a negative impact on geography. As far as infrastructure has concerned only partial support has extended by the institutions though they have a better facility for internet access. So it may be suggested that students may be allowed and encourage to utilize the facilities available and optimize the knowledge up gradation of the learners. As managing these facilities and optimizing the usage will improve the competitiveness of the learners and create a pool of employable learners with updated knowledge to fit in the needs of the industries. Hence it is clear that a combined learning system will definitely serve the purpose of technological innovations to improve the quality of education, in all the streams of Science; Technology and Management. This has paved a way to develop a system that encompasses the attributes of both traditional and electronic learning systems and create a better tool to empower the students with better mode of up gradation there by creating a highly systematic and innovative society.

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