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Message from the Editor-in-Chief

Dear Colleagues,

TOJDEL welcomes you. TOJDEL would like to thank you for your online journal interest. The online journal system has been diffused very fast for last 7 years. TOJDEL has continued to diffuse new trends in distance education to all over the world since January, 2013. We hope that the volume 7, issue 3 will also successfully accomplish our global distance education goal.

TOJDEL is confident that readers will learn and get different aspects on distance education. Any views expressed in this publication are the views of the authors and are not the views of the Editor and TOJDEL.

TOJDEL thanks and appreciate all reviwers who have acted as reviewers for one or more submissions of this issue for their valuable contributions.

TOJDEL, Sakarya University and Istanbul University-Cerrahpasa will organize International Distance Education Conference-2019 (www.id-ec.net) at George Mason University between August 07-08, 2019 in Virginia, USA.

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July 01, 2019
Prof. Dr. Aytekin ISMAN
Sakarya University

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EFFECTS OF ASYNCHRONOUS E-MAIL INTERVENTION ON LEARNING PERFORMANCE IN RELATION TO THINKING SKILLS, EXECUTIVE FUNCTIONS AND ATTENTION BENEFITS OF INDIAN CHILDREN

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ABSTRACT
In this 21st century, both developing and developed countries are providing technology based distance mode of learning to the learners. Along with the traditional textbooks, blogs, tweets, podcast, webcast, online chats, discussion boards, and other virtual modes are becoming more popular and influencing the masses. Now a day, electronic mailing is the cheapest and accessible mode of learning. The main objectives of the study were to assess the effects of asynchronous e-mail on the performance in relations to thinking skills, executive functions and attention benefits of elementary students. The whole standard eight students (n=46), age range was 13.1 years- 13.7 years mean age 13.3 and SD 2.2 of Holy Cross school, Silchar, Assam, India was the experimental group was assigned for asynchronous e-mail learning. Pre-test posttest along with these attentions, working memory and executive functions scale was administered to assess the effects of asynchronous e-mail on the performance in relations to thinking skills, executive functions and attention benefits of elementary students. It was resulted that asynchronous e-mail learning was effective and the attention, working memory and executive functions of students has significant relations with their performance.
Keywords: Asynchronous e-mail learning, attention benefits, e-mail learning, executive functions and thinking skills

INTRODUCTION

The delivery of a learning, training or education program by electronic means may be term as e-learning. E-learning involves the use of electronic devices (e.g. a mobile phone or computer etc) in some way to provide training, educational or learning materials. In most cases, it refers to a course, program or degree delivered completely online. In modern time e-mail learning are becoming important elements of an educational system as it supportsin improving or evaluating the quality of education. Asynchronous e-mail learning is a teaching method, which uses online learning resources to facilitate information among a network of people,and it can be carried out even when the student teacher is in offline mode. Asynchronous learning combines self-study to promote learning in traditional on-campus education, distance education, and continuing education. It is a combined network of learners'along with the electronic network in which learner's communications are referred to as an asynchronous learning network. Asynchronous learning includes resources like Video-cassette/DVD, Voice Mail/fax, Print Materials, E-mail, conferencing systems, online discussion boards, wikis, and blogs. Asynchronous learning systems like Campus Cruiser LMS, Desire2Learn, Blackboard, Web CT, Moodle, and Sakai, have been developed to support online interaction, allowing users to organize discussions, post and reply to messages, and upload and access multimedia. These asynchronous forms of communication are sometimes supplemented with synchronous components, including text and voice chat, telephone conversations, video-conferencing. Asynchronous learning provides students the freedom to access the course and its instructional materials at any time they choose, and from any location, with an internet connection (*From Wikipedia and encyclopedia*). This allows for accessibility over large populations ranging from traditional-on-campus students to working professional also including international students in foreign countries.

ASYNCHRONOUS E-MAIL LEARNING

In support to asynchronous e-mail learning performance of the students, a total of 10 studies were reviewed and out of these 7 studies were experimental and remaining 3 were other related studies. Mostly, the present studies were conducted in American countries and United K kingdom areas. The firststudy was conducted by (Hiltz, 1997) in New Jersey undertaking 34 IT college students found a significant effect of collaborative e-learning at higher education system. A study was conducted in Netherland understanding participant from 4-11 open-university students found a significant effect of collaborative learning (Dewiyanti, Gruwel, Jochems & Bores, 2004). A study in France including 20 university students was conducted by (Scherer, 2005) found significant effect of asynchronous learning in mathematical mapping solution in a neuro computing way. Another study was supported by (Schellens & Valcke, 2005) undertaking 230 participants in Belgium found discussion orientated reflects high phases in knowledge construction were not significant. In USA a cross case design was framed on 286 secondary and 287 elementary school students resulted a significant effect of video base

communication used for taking classes (Spiceland & Hawkins, 2008). Hull Saxon, 2009 conducted a study on the participant ranged from 66-280 in USA found a significant effect on collaborative learning in asynchronous courses compared to traditional learning. A study was conducted in UK with 16 school students found computer mediated asynchronous is significantly effective for developing skills (Coffin, Hewing & North, 2012). A study was conducted in Korea by (Kim, Park, Yoon & Jo, 2016) found significant effect of asynchronous online discussion for blended learning. In the above discussion, it was noted that asynchronous e-learning was effective over traditional approach but few studies were not significant and was disagree with the results and findings over traditional approach of learning that is why the present study was undertaken. A last study was conducted in Turkey by (Serife, 2016) on 60 university students found technology and problem based online asynchronous discussion has significant effect on students task orientation.

ASYNCHRONOUS E-MAIL LEARNING IN RELATIONS TO THINKING SKILLS

A total of 12 studies were reviewed in support to asynchronous e-mail learning performance in relations to thinking skills; out of these 10 were experimental studies and one is survey study. The first study was conducted in London by (Blakemore & Choudhury, 2006) undertaking 145 participant from medical institute found a significant effect of changes in brain structured in both adolescence and early adulthood stage of development among the learners. A study was conducted in Ankara by (Akyuz, 2009) undertaking 44 participants of university students found no significant difference between pre-test and post-test result among the student's academic achievement. A study was conducted by (Cavus, 2009) in North Cyprus undertaking total no. of 41 participants were 20 male and 21 female university undergraduate students found a significant effect of mobile learning in changing students attitude towards learning environment. One study was conducted by (Lee, 2013) in Australia undertaking 1st group 672, and 2nd group 23 college students' found no significant difference between thinking skills and cognitive social presence among the students. One survey study was conducted in Auckland by (Samarraie, Teo & Abbas, 2013) undertaking 210 university students as a participant found a significant effect of structured representatives in influencing students metacognitive activities. In the above discussion, it was noted that most of the studies in relations to thinking skills has a significant effect over traditional learning but few studies were not significant and disagreed with the findings that is why the present study was undertaken. Two studies were conducted in Thailand were 1st study included 30 school students found a significant difference between pre-test and post-test among the learners (Petchtone & Sumalee, 2014) whereas 2nd study included 30 university students' found e-learning has a significant effect in developing creative thinking among learners in pursuing higher education (Songkram, 2015). One study was conducted by (Vainikainen, Hautamaki, Hotulainen & Kupiainen, 2015) in Finland undertaking 1543 school students' found formal thinking of an individual has a significant effect on verbal and quantitative reasoning. Another study was corroborated in Melbourne by (Broadbent & Poon, 2015) taking 140 online group students and 466 blended group students found a significant effect of using time management and elaborative strategies for academic achievements between both the groups of student's. Another study was supported by (Thaiposri &Wannapiroon, 2015)findings showed that information and communication technologies could play an important role in student developments in 21st century learning. Lee, Parsons, Kwon, Petrova, Jeong & Ryu, 2016 conducted a study in New Zealand and Korea where 25 university students were participated found significant effect of mobile learning on academic achievement. Cheng & Wan, 2017 conducted a study in Hongkong included 3,869 college student found there is no significant difference between students' thinking skills and learning dispositions.

ASYNCHRONOUS E-LEARNING IN RELATIONS TO EXECUTIVE FUNCTIONS

The researcher reviewed a total of 13 experimental studies were undertaken in support to asynchronous e-learning performance in relations to executive functions. The first study was conducted by (Welsh, Pennington & Groisser, 1991) undertaking 110 university students in Denver found no significant early prefrontal skills in relations to attentional stage of order. In the above discussion, it was noted that executive function has a significant effect over the traditional learning style but few studies were not significant and effective so the present study was undertaken. A study was conducted in London including 50 participants were 25 were male and 25 were female school students found a significant links between Executive Functions (EFs) and Theory of Mind (TOM) in students' performance (Hughes, 1998). One study was conducted in USA by (Carlsona, Mosesb & Bretona, 2002) undertaking 47 university students found there is a no significant relations between Executive Function (EF) and false belief understanding among the learner's. A study was conducted by (Kane & Engle, 2002) undertaking 104 university students in North Carolina and Georgia found a significant bonding between working memory, intelligence and prefrontal cortex functions simultaneously among learners performance. One study was conducted by (Carlson, Stephanie, Mandell, Dorothy, Williams & Luke, 2004) found a relation was non-significant with the controls included as individual differences in EF were relatively stable. Another study was conducted by (Willcutt, Doyle, Nigg, Feroane & Pennington, 2005) participants ranged from 2969 without ADHD and 3734 with ADHD group of medical institute found a significant difference between both the groups of children's. A study was conducted by (Thomson & Gathercole, 2006) including 51 participants were 27 were

boys and 24 were girl's school students in England found that working memory and inhibitory control has significant effect over the traditional learning approach. A study was conducted in UK by (Bull, Espy & Wiebe, 2008) undertaking 124 pre-school children found a significant effect in between the variance of cognitive skills and math and reading. Another study was supported by (Anderson, 2002) on ecological validity of EF tests and neuropsychological assessment procedures are examined, and adjunct methods of measurement are presented to enable a more comprehensive and valid assessment of EF. One study was conducted in Spain by (Rueda, Posner & Rothbart, 2010) undertaking participant ranging from 2 to 3 years kindergarten school children's found a significant effect between cognitive and behavioral training in relations to attentional control. One study was conducted by (Becker, Miao, Duncan & McClelland, 2014) undertaking 127 pre-school and kindergarten school children's in United States found a significant relations between stimulus Response (SR) and Executive Functions (EFs) with Visuo Motor Stimulus (VMS) among the children's. A study was conducted by (Cragg, Keeble, Richardson, Roome & Gilmore, 2017) undertaking total of 293 participants were 84 primary students , 67 secondary students , 67 university students and 75 adult young ; U.K found there is no significant effect between executive function and mathematics achievement among the learners performance. One last study was supported by (Vandenbroucke, Verschueren & Baeyens, 2017) results indicate moderate to large growth and stability in working memory and cognitive flexibility and small improvements and stability in inhibition.

ASYNCHRONOUS E-MAIL LEARNING IN RELATIONS TO ATTENTION BENEFITS

A total of 10 studies were undertaken in support to asynchronous e-mail learning performance in relation to attention benefit of the student's achievements. A first study was conducted by (Posner & Peterson, 1990) in Missouri undertaking 25 university students found a significant effect of attention to the targeted group as it was impaired in nature. Another study was conducted by (Cowan, Nugent, Elliot, Ponomarev & Saults, 1994) in Missouri, Columbia & Portland undertaking total number of 24 school, college and university students found a significant effect of spatial cueing modulation over spatial Stroop object based attention. Another experimental study is conducted by (Pomplun, Reingold and Shen, 2001) in Toronto, Canada undertaking 24 university students including 8 students in each group found a significant effect of both comparative task and attentional manipulation on visual span size. A study was conducted by (Perez & Solis, 2007) undertaking 521 college students found a significant effect of attention, working memory, and executive functions are separated but itsustained a fast improvement in performance of the students. Another study was conducted by (Chen & Wu, 2015) in Taiwan undertaking 37 university students found that videos lecture has a significant effect on student's performance. A study was supported by (Gaston, Moore & Butler, 2016) in Canada undertaking two group of students i.e., 23 and 18 found in attention, hyperactivity, oppositional behaviour has a significant effect on the nature of the learners. The last study was conducted in Finland by undertaking a total of 15 medical students were 8 female and 7 male by (Salo, Salmela, Salmi, Numminen & Alho, 2017) found a significant effect of attention as same while using or applying other objects too. Another study was conducted by (Bosse & Valdois, 2009) in France found visual attention span gas a significant effect on reading skills of the learners.

OBJECTIVES OF THE STUDY

1. To study the effects of asynchronous e-mail learning performance in relations to thinking skills of elementary students.
2. To study the effects of asynchronous e-mail learning performance in relations to executive functions of elementary students.
3. To study the effects of asynchronous e-mail learning performance in relations to attention benefits of elementary students.

HYPOTHESES OF THE STUDY

H1 There is no hierarchical significant relationship among the asynchronous e-mail learning performance and thinking skills of elementary students.

H2There is no hierarchical significant relationship among the asynchronous e-mail learning performance and executive functions of elementary students.

H3There is no hierarchical significant relationship among the asynchronous e-mail learning performance and attention benefits of elementary students.

METHODOLOGY

Participants

The study aimed to assess the effects of asynchronous e-mail learning performance in relations to thinking skills, executive functions, and attention benefits of elementary school students. The whole Class VIII students (n=46), age range was 13.1 years- 13.7 years mean age 13.3 and SD 2.2 of Holy Cross school, Silchar was assigned for asynchronous e-mail learning counted as the experimental group. For asynchronous E-mail, intervention was given to the students.

Design of the study

Single group Pre-test-Post-test quasi-experimental design was used in this study by following non-randomization manipulation principle. The effects of asynchronous e-mail learning on performance of experimental group students were assessed through ANCOVA and its relation with thinking skills, executive functions, and attention benefits was predicted through multiple hierarchical regression analysis. The findings of the study were generalized on the whole population. The details of the design of the study are given below in the table no. 1.

Table 1 Design of the study

Groups	Nature	Pretest	Intervention	Post test
Experimental Group (n=46)	Asynchronous e-learning	Achievement Test Thinking skill Test Executive function Scale Attention benefit scale	E-mail	Achievement Test

Instrumentations

There are four tools such as Achievement Test, Thinking Skill Test, Executive Function Scale and Attention Benefit Scale used in this study. The details of the tools regarding construction and standardization procedures were given below.

Achievement Test in Geography

Barman & Jena (2017) developed an achievement test on Geography based on the syllabus for Class VIII students affiliated to NCERT, New Delhi. The test contains 40 items having 10 short type items, 18 multiple-choice items having 4 options with three good distracters, and 12 very short type items developed with equal weightage. A maximum mark of the achievement test was 100. In addition to that, Content validity ratio (CVR=.86), test-retest reliability and split half reliability coefficient was .90 and .89 respectively and the time duration to response the items was 10-15 minutes has established.

Thinking Skill Questionnaires

Thinking Skill Test (Barman & Jena, 2017) has 3 sub-areas (convergent thinking, divergent thinking and creative thinking) assessed through MCQ, assertion and picture identification type of items constructed in corroboration with 4 chapters of 8th class Geography. The standardized criteria were followed during the construction of the items. The Construct Validity Ratio was .83, split half .89 and Cronbach α .88 and time duration (10-15 minutes) to response the whole items was established.

Executive functions Scale

Executive Function Scale (Barman & Jena, 2017) has three sub-areas (working memory, self-monitoring and task initiation). All the items were statement form, matching types, picture identification, passage, and analogy types. During the construction of the test items of executive functions scale all the standardized steps were followed. Construct validity ratio.86, test- retest reliability .87 and maximum 10-15 minutes to response the whole items was established. The details of Tool specification of Executive functions Scale is given in table 3.10

Attention Benefit Scale

Attention Benefit Scale (Barman & Jena, 2017) has three basic areas: Attention Time Span (picture identification, tick the odd out & naming the image), Attention Representing (sentence completion & short notes) and Attention Analyzing (naming the pictures, fill in the blanks & group activity). Construct Validity Ratio .89, test- retest reliability .88 and the maximum time 10-15 minutes time to response the whole items was established.The details of the tool specification of attention benefit scale is given in table 3.11

Procedure of experiment for asynchronous e-mail learning

Activity I Asynchronous e-mail learning

Before the asynchronous e-mail learning, a day pre-intervention training was organized for the participants of the experimental group. In this training program, learners were advised on how to connect internet and on how to the sign in the e-mail and on how to send or communicate the information. The researchers advised the participants to open their e-mail at any time to collect the learning materials to read and understand the concepts at their level best. For developing competency and skill, participants were advised to send e-mail to the researchers for better clarification of their difficulties, misunderstanding, and misconceptions. If the learning materials were beyond their level of understanding, then participants were advised to write the email to the researchers. As per their requirement, the learning materials were provided to the participants. This process was

continued upto three months to complete the entire 4 chapters in geography of class VIII. Before instructions, a pre-test on resources, land, minerals, and agriculture was administered and after instructions post-test was administered. The phase of instruction of asynchronous e-mail is given below.

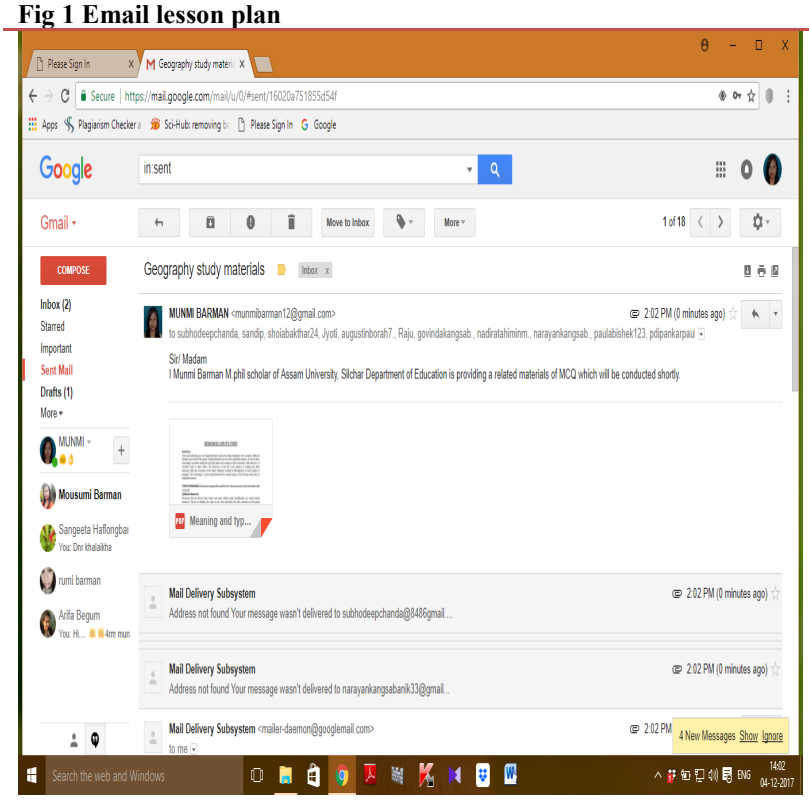
Phase1. Uploading the learning materials

Out of the whole geography book, only four chapters i.e. chapter1 (Resources), chapter2 (Land, Water & Soil), chapter 3 (Minerals & Power Energy) and chapter 4 (Agriculture) were selected for the experiment. After that, the developed, pdf files, videos, images, few Wikipedia materials, were screened and uploaded to the Email IDs of the participants and advised to read the materials at their own pace. If they find any difficulties in understanding then they could interact with the researchers about their queries at any time. As per the scheduled, the materials were uploaded frequently for the participants and that was continued upto the end of the chapters of the book.

Phase2. Learning for known to unknown

The participants after getting the learning material tried to learn by using their previous knowledge and continuously learnt the unknown contents those were provided.

Fig 1 Email lesson plan



Asynchronous e-learning(e-mail)
Activity Plan- 1
Subject- Geography
Topic-Resources and its types
Class- 8th Standard
Period- 2nd period **Time-** 11 to 12
Objectives

- understand meaning of resources
- Illustration of resources types
- differentiate between natural and man-made resources
- define biotic and abiotic resources

Materials

- Printed Materials (MCQ)
- Geography Text-Book
- PDF notes
- Internet

Methodology

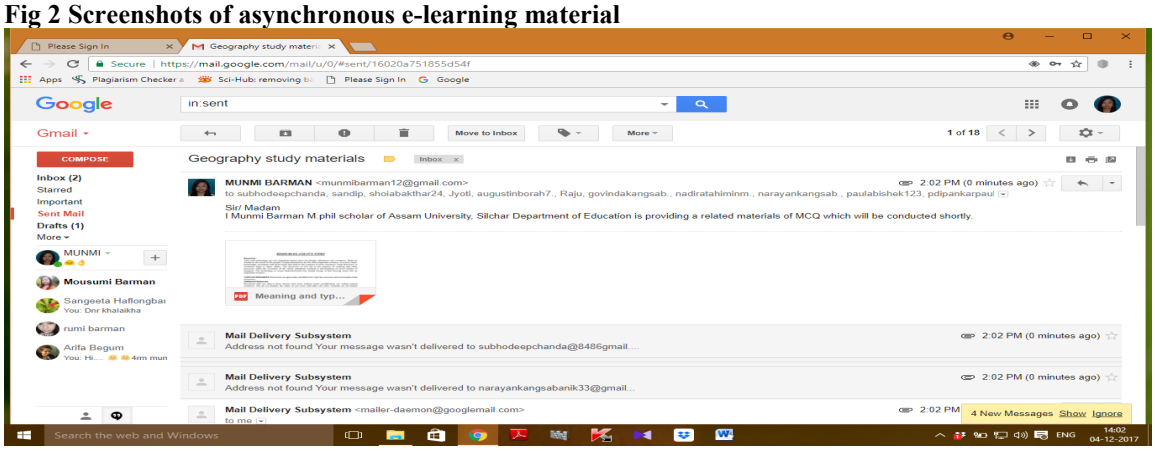
- Classroom demonstration
- assigning the MCQ
- Using of emails

Figure 1 : Meaning and Types of Resources**http://en.m.wikipedia.org/wiki/Agriculture_in_India**

Phase 3. Building concrete idea with asynchronous e-mail learning

Participants used the learning materials in addition to their previous knowledge, and they applied their own pace in learning, and constructed their ideas. (See fig 3.5 & 3.6).

Fig 2 Screenshots of asynchronous e-learning material



ANALYSIS AND RESULTS

H1 *There is no hierarchical significant relationship among the asynchronous e-mail learning performance and thinking skills of elementary students*

Table 1.1 Mean and SD of asynchronous e-mail learning performance, convergent thinking skill, divergent thinking skill, creative thinking skill of elementary school students of elementary school students

	N	Mean	SD
Asynchronous e-mail learning	46	55.35	5.770
Thinking Skills			
Convergent thinking	46	6.39	1.832
Divergent thinking	46	6.17	2.143
Creative thinking	46	5.26	2.215

Table 1.1 reveals the Mean, and Standard Deviation (SD) of post-test score of asynchronous group of participants. The post-test mean and SD of asynchronous e-learning group participants was (mean= 55.35 & SD = 5.770). Convergent thinking skill Mean and Standard Deviation (SD) was (mean= 6.39&SD= 1.832), Divergent thinking skill Mean and Standard Deviation (SD) was (mean= 6.17 & SD= 2.143) and Creative thinking skill was (mean= 5.26 & SD= 2.215). However, the Mean and Standard Deviation of Convergent thinking skill was better over both the Divergent and creative thinking skill.

Table 1.2 R, R^2, adjusted R^2 and Durbin-Watson of asynchronous e-mail learning performance and convergent thinking skill, divergent thinking skill, creative thinking skill of elementary school students

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.811[a]	.658	.650	3.414	.658	84.582	1	44	.000
2	.895[b]	.800	.791	2.637	.143	30.722	1	43	.000
3	.938[c]	.880	.871	2.071	.079	27.716	1	42	.000

Table 1.3ANOVA of asynchronous e-mail learning performance, convergent thinking, divergent thinking, and creative thinking of elementary school students

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	985.679	1	985.679	84.582	.000[b]
	Residual	512.756	44	11.654		
	Total	1498.435	45			
2	Regression	1199.360	2	599.680	86.220	.000[c]
	Residual	299.075	43	6.955		
	Total	1498.435	45			
3	Regression	1318.260	3	439.420	102.432	.000[d]
	Residual	180.174	42	4.290		
	Total	1498.435	45			

a. Dependent Variable: Asynchronous e-learning
b. Predictors: (Constant), Convergent thinking
c. Predictors: (Constant), Convergent thinking , Divergent thinking

Table 1.4 coefficients for asynchronous e-mail learning performance, convergent thinking, divergent thinking, and creative thinking of elementary school students

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	39.016	1.846		21.138	.000
	Convergent Thinking Skill	2.555	.278	.811	9.197	.000
2	(Constant)	42.073	1.529		27.519	.000
	Convergent Thinking Skill	-1.086	.691	-.345	-1.571	.123
	Divergent Thinking Skill	3.274	.591	1.216	5.543	.000
3	(Constant)	46.058	1.419		32.448	.000
	Convergent Thinking Skill	-2.089	.575	-.663	-3.631	.001
	Divergent Thinking Skill	1.178	.611	.437	1.926	.061
	Creative Thinking Skill	2.921	.555	1.122	5.265	.000

The regression of asynchronous e-learningon the basic model(R = .938, R^2= .880 and adjusted R2 =.871p < .005) revealed significant positive relationship with convergent thinking skill, divergent thinking skill, creative thinking skill (β =-.663 p < .001) and the F-value (df 3/42, 102.432p < .001) was significant. The regression of convergent thinking skill, and divergent thinking skillon the hierarchical multiple regression model (R = .895, R2 = .800 and adjusted R2 = .791 p < .001) found significant positive relationship with asynchronous e-mail learning performance (β = 1.216 p < .001) and the F-value (df 2/43, 86.220p < .001) was significant. In addition, the regression model) convergent thinking skillon the model (R = .811, R2 = .658 and adjusted R2 = .650 p > .001) revealed significant with asynchronous e-mail learningperformance (β = .811 p > .001) and the ANOVA of convergent thinking skill model (df 1/44, 84.582 p > .005) was also significant.

Fig 1a, b & c for asynchronous e learning performance, convergent thinking, divergent thinking, and creative thinking of elementary school students:

Fig 1a, asynchronous e –mail learning performance and convergent thinking

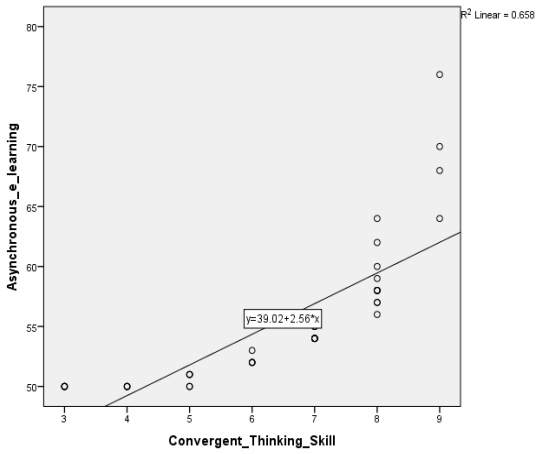


Fig 1 b, asynchronous e-mail learning performance and divergent thinking

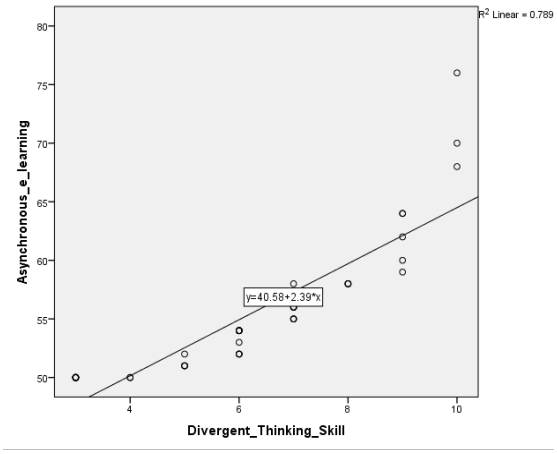
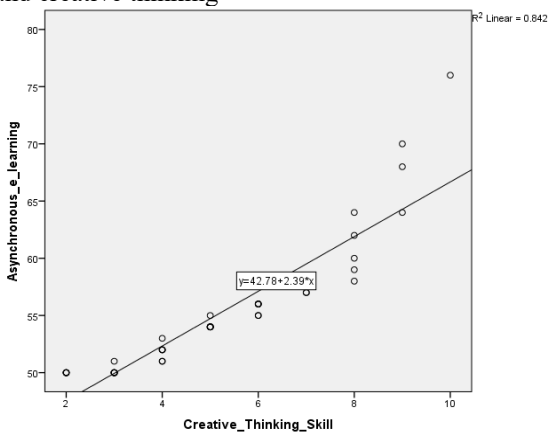


Fig 1c, asynchronous e-mail learning performance and creative thinking



The equation of the regression line for the asynchronous e-learning performance & convergent thinking skills, synchronous e-learning performance & divergent thinking skills, synchronous e-mail learning performance &creative thinking skills data is as follows: In asynchronous e-mail learning performance = 39.20+ (2.56 × convergent thinking skills) and asynchronous e-mail learning performance = 40.58 + (2.39 × divergent thinking skills) (calculated using the method of least squares, which is described below). The gradient of this line is 1.47, which indicates that for an increase of convergent thinking skills the expected increase in synchronous e-learningperformance. Similarly, the asynchronous e-mail learning performance = 42.78+ (2.39 × creative thinking skills). Here, the gradient of this line is 2.15, which indicates that for an increase of creative thinking skills the expected increase in synchronous e-learning performance (*see* figure 1 a, b & c).

H2*There is no hierarchical significant relationship among the synchronous e-mail learning performance and executive functions of elementary students*

Table 2.1 Mean and SD of asynchronous e learning performance, working memory, self-monitoring, task initiation

	N	Mean	Std. Deviation
Asynchronous e-mail learning	46	55.35	5.770
Executive Functions			
Working Memory	46	7.41	3.297
Self-Monitoring	46	7.76	3.171
Task Initiation	46	7.61	3.448

Table 2.1 reveals the Mean, Standard Deviation (SD) of post-test score of asynchronous group of participants. The post-test mean and SD of asynchronous e-learning group participants was post-test was (mean= 55.35 & SD= 5.770) Working memory Mean and Standard Deviation (SD) was (mean= 7.41 & SD= 3.297) and Self-monitoring Mean and Standard Deviation (SD) was (mean= 7.76 &SD= 3.171) and Task Initiation was (mean= 7.61 & SD= 3.448). However, the Mean and Standard Deviation of Self-monitoring was better over both the working memory and task initiation.

Table 2.2 R, R^2, adjusted R^2 and Durbin-Watson of asynchronous e-learning, working memory, self-monitoring, and task initiation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.898[a]	.806	.801	2.573	.806	182.259	1	44	.000
2	.898[b]	.806	.797	2.597	.001	.198	1	43	.659
3	.935[c]	.874	.865	2.118	.068	22.653	1	42	.000

Table 2.3 ANOVA of asynchronous e learning performance, working memory, self-monitoring, task initiation of elementary school students

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	43.703	.942		46.378	.000
	Working Memory	1.571	.116	.898	13.500	.000
2	(Constant)	43.436	1.125		38.607	.000
	Working Memory	1.210	.819	.692	1.477	.147
	Self-Monitoring	.379	.852	.208	.445	.659
3	(Constant)	42.539	.937		45.414	.000
	Working Memory	1.997	.688	1.141	2.901	.006
	Self-Monitoring	1.815	.757	.997	2.396	.021
	Task Initiation	-2.113	.444	-1.262	-4.760	.000

Table 2.4 Coefficients of asynchronous e mail learning performance, working memory, self-monitoring, and task initiation

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1207.038	1	1207.038	182.259	.000[b]
Residual	291.397	44	6.623		
Total	1498.435	45			
Regression	1208.371	2	604.186	89.567	.000[c]
Residual	290.063	43	6.746		
Total	1498.435	45			
Regression	1310.004	3	436.668	97.331	.000[d]
Residual	188.431	42	4.486		
Total	1498.435	45			

a. Dependent Variable: Asynchronous e-mail learning
b. Predictors: (Constant), Working Memory
c. Predictors: (Constant), Working Memory, Self-Monitoring
d. Predictors: (Constant), Working Memory, Self-Monitoring, Task Initiation

The regression of asynchronous e-mail learning on the basic model ($R = .935$, $R^2 = .874$ and adjusted R2 =.865 $p < .001$) revealed significant positive relationship with working memory ($\beta = 1.141$ $p < .001$)self-monitoring ($\beta = .997$ $p < .001$), task Initiation ($\beta = -1.262$ $p < .001$) and the F-value (df 3/42, 97.331 $p < .001$) was significant. The regression of working memory, and self-monitoringon the hierarchical multiple regression model ($R = .898$, $R^2 = .806$ and adjusted $R^2 = .797$ $p > .001$) found no significant relationship with asynchronous e-learning performance ($\beta = .692$ & $.208$ $p > .001$). However, the F-value (df 2/43, 89.567 $p < .001$) was significant. In addition, the regression model) working memoryon the model ($R = .898$, $R^2 = .806$ and adjusted $R^2 = .801$ $p > .001$) revealed significant with asynchronous e-learning performance ($\beta = .898$ $p > .001$) and the ANOVA of convergent thinking skill model (df 1/44, 182.259 $p > .001$) was also significant. Fig 2a, b & c is showing asynchronous e learning performance, working memory, self-monitoring, task initiation of elementary school students.

Fig 2 a, asynchronous e-mail learning memory

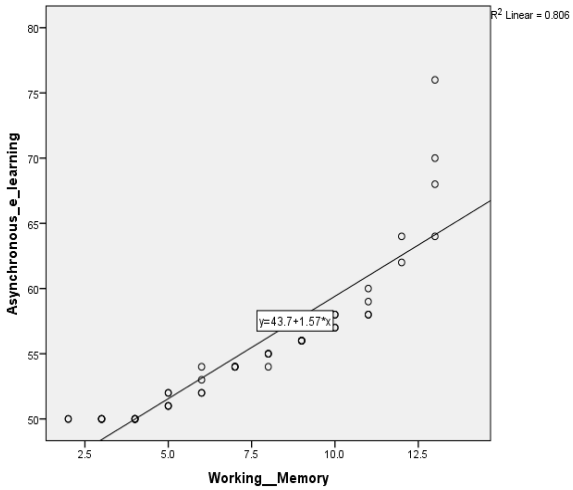


Fig 2 b. asynchronous e-mail learning & performance and working Self monitoring

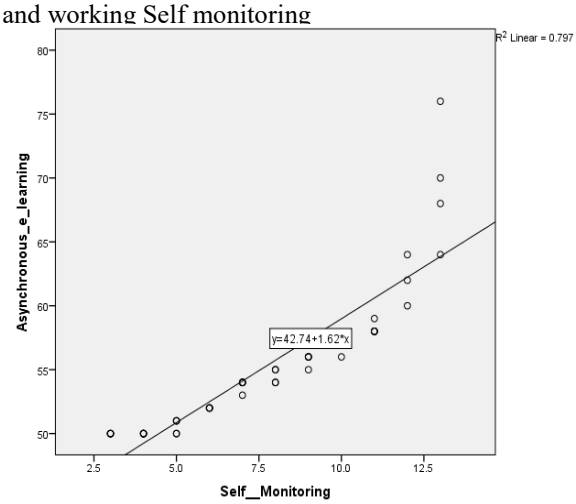
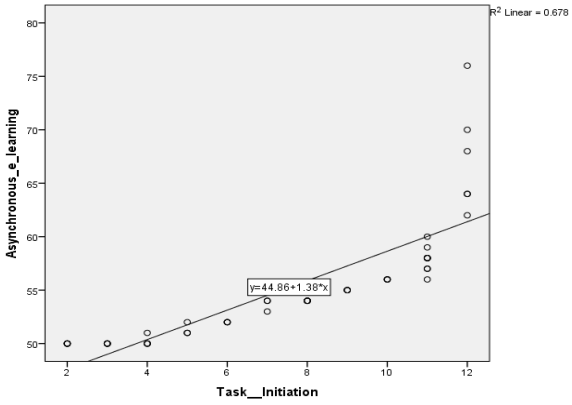


Fig 2 a, asynchronous e learning performance & task initiation



The equation of the regression line for the synchronous e-learning performance & convergent thinking skills, synchronous e-learning performance & divergent thinking skills, asynchronous e-learning performance &creative thinking skills data is as follows: In asynchronous e-learning performance = 43.7+ (1.57 × Working memory) and asynchronous e-learning performance = 42.74+ (1.62 ×Self- monitoring) (calculated using the method of least squares, which is described below). The gradient of this line is 1.47, which indicates that for an increase of convergent thinking skills the expected increase in synchronous e-learning performance. Similarly, the synchronous e-mail learning performance = 44.86 + (1.38 × Task Initiation). Here, the gradient of this line is 0.866, which indicates that for an increase of working memory the expected increase in synchronous e-learning performance (*see* fig 4.3).

Fig 2 a, b & c for asynchronous e-mail learning performance, working memory, self-monitoring and task initiation of elementary school students.

H3: *There is no hierarchical significant relationship among the asynchronous e-mail learning performance and attention benefits of elementary students*

Table 3.1 mean & SD of asynchronous e-mail learning, attention time span, attention representing and attention analyzing

	N	Mean	SD
Asynchronous e-mail learning	46	55.35	5.770
Attention Benefits			
Attention Time Span	46	5.74	1.341
Attention Representing	46	7.83	3.732
Attention Analysing	46	8.22	1.672

Table 3.1 reveals the Mean, Standard Deviation (SD) of post-test score of synchronous group of participants. The post-test mean and SD of synchronous e-learning group participants was post-test was (mean= 53.35 & SD = 5.770) attention time span mean and Standard Deviation (SD) was (mean= 5.74 &SD= 1.341) and attention representing mean and Standard Deviation (SD) was (mean= 7.83 &SD= 3.732) and attention analyzing was (mean= 8.22& SD= 1.672). However, the mean and standard deviation of attention analyzing was better over both the attention time span and attention representing.

Table 3.2 R, R^2, adjusted R^2 and Durbin-Watson of asynchronous e-mail learning, attention time span, attention representing, and attention analyzing

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.799[a]	.639	.630	3.508	.639	77.739	1	44	.000
2	.831[b]	.690	.676	3.286	.052	7.148	1	43	.011
3	.876[c]	.768	.751	2.878	.078	14.063	1	42	.001

Table 3.3 ANOVA[a] of asynchronous e-mail learning performance, attention time span, attention representing, attention analyzing of elementary school students

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	956.858	1	956.858	77.739	.000[b]
	Residual	541.576	44	12.309		
	Total	1498.435	45			
2	Regression	1034.056	2	517.028	47.875	.000[c]
	Residual	464.379	43	10.800		
	Total	1498.435	45			
3	Regression	1150.541	3	383.514	46.300	.000[d]
	Residual	347.893	42	8.283		
	Total	1498.435	45			

a. Dependent Variable: Asynchronous e-learning

b. Predictors: (Constant), Attention Time Span

c. Predictors: (Constant), Attention Time Span, Attention Representing

d. Predictors: (Constant), Attention Time Span, Attention Representing, Attention Analysing

Table 3.4 Coefficients[a] of asynchronous e-mail learning performance, attention time span, attention representing, attention analyzing of elementary school students

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	35.606	2.298		15.495	.000
	Attention Time Span	3.440	.390	.799	8.817	.000
2	(Constant)	43.481	3.648		11.919	.000
	Attention Time Span	.594	1.126	.138	.527	.601
	Attention Representing	1.081	.404	.699	2.674	.011
3	(Constant)	59.322	5.296		11.201	.000
	Attention Time Span	3.623	1.274	.842	2.843	.007
	Attention Representing	2.329	.486	1.506	4.793	.000
	Attention Analyzing	-5.232	1.395	-1.516	-3.750	.001

a. Dependent Variable: Asynchronous e-mail learning

The regression of asynchronous e-mail learning on the basic model (R = .876, R^2= .768 and adjusted R^2 =.751 p < .001) revealed significant positive relationship with attention time span (β =.842 p >.01), attention representing (β =.1.506 P<.001), attention analysing (β = -.1.516 <.001)and the F-value (df 3/42, 46.300p < .001) was significant. The regression of attention time span (β =.138 p>.001) and attention representing (β =.699 p >.001) on the hierarchical multiple regression model (R = .831, R2 = .690 and adjusted R2 = .676 p > .001) found no significant positive relationship with asynchronous e-learning performance. However, the F-value (df 2/43, 87.875 p < .001) was significant. In addition, the regression model) attention time spanon the model (R = .799, R2 = .639 and adjusted R2 = .630 p > .001) revealed significant with asynchronous e-learning performance (β = .799 p > .001) and the ANOVA of attention time spanmodel (df 1/44, 77.739 p > .001) was also significant. Figure 3 a, b & c for synchronous e-mail learning performance, attention time span, attention representing and attention analyzing of elementary school students

Fig 3 a, asynchronous e learning performance, attention time span

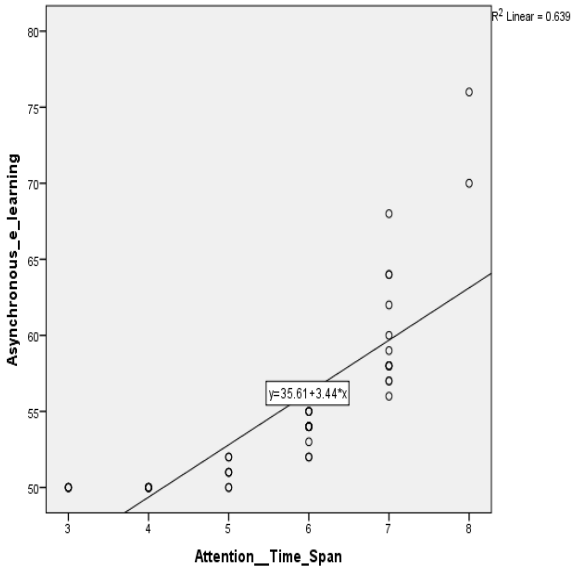


Fig 3 b, asynchronous e learning performance, attention representing

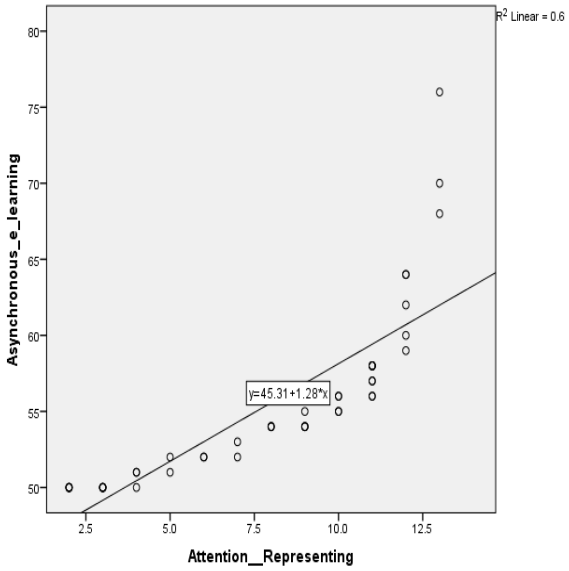
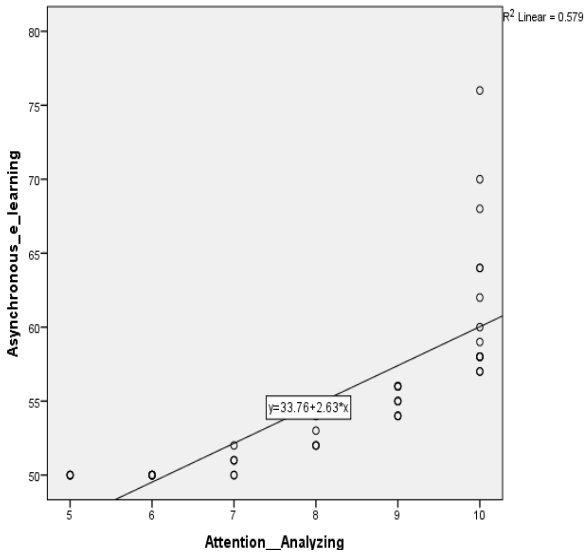


Fig 3 c, asynchronous e learning performance, attention analyzing



The equation of a straight line is given by y= a + bx, where the coefficients a and b are the intercept of the line on the y axis and the gradient, respectively. The equation of the regression line for the synchronous e-learning performance & convergent thinking skills, synchronous e-learning performance &divergent thinking skills, synchronous e-learning performance &creative thinking skills data is as follows: In asynchronous e-learning performance = 35.61 + (3.44 ×Attention Time Span) and asynchronous e-learning performance =45.31 + (1.28

×Attention Representing) (calculated using the method of least squares, which is described below). The gradient of this line is 1.47, which indicates that for an increase of convergent thinking skills the expected increase in synchronous e-learning performance. Similarly, the asynchronous e-learning performance = 33.76 + (2.63 ×Attention Analyzing). Here, the gradient of the lines are 3.44, 1.28 and 1.47 respectively which indicates that for an increase of creative thinking skills the expected increase in synchronous e-learning performance.

FINDINGS

It was found that there exists a significant effect of asynchronous e-mail learning performance among elementary students. This was because of the technology assisted asynchronous e-learning motivated the learning performance of experimental group students. Infact, the impact of asynchronous e-learning (email) has significant role to share information to enrich the content knowledge over the traditional group of students. It was found that the thinking skill was hierarchical and significantly related to asynchronous e-learning performance of the students. The independent variables like convergent thinking skill, divergent thinking skill and creative thinking skills of the experimental group participants were directly correlated with their learning performance because Durbin- Watson value is (.454). This finding was equivalent to the earlier researchers by (e.g. Blakemore & Choudhury, 2006; Broadbent & Poon, 2015; Canvas, 2009; Petchtone & Sumalee, 2015; Songkram, 2015; Vainikainen, Hautamaki, Hotulainen & Kupiainen, 2015) found that formal thinking of an individual's level were statistically significant factors for verbal and quantitative reasoning. It was found that the Executive Functions was hierarchical and significantly related to asynchronous e-learning performance of the students. The independent variables like working memory, self-monitoring and task initiation of the experimental group participants were directly correlated with their learning performance because Durbin-Watson value is (.793). This result was supported by earlier researchers (e.g. Becker, Miao, Duncan & McClelland, 2014; Bull, Espy & Wiebe, 2008; Kane & Engle, 2002; Rued, Posner & Rothbart, 2010; Thomson & Gathercole, 2006) found that executive functions of working memory and inhibition plays a significant role in learning situations. It was found that the Attention Benefit was hierarchical and significantly related to asynchronous e-mail learning performance of the students. The independent variables like attention time span, attention representing and attention analyzing of the experimental group participants were directly correlated with their learning performance because Durbin- Watson value is (.516). This finding was equivalent to the earlier researchers by (e.g. Cowan, Nugent, Elliot, Ponomarev & Saults, 1999; Perez & Solis, 2007; Salo, Salmela, Salmi, Numminen & Alho, 2017; found that though attention, working memory and executive functions are separated but it sustained a fast improvement in performance of the leraners.

DISCUSSION

The study claimed that asynchronous e-mail learning was found significant better over the learning performance among the students and this result was supported by (Coogle & Floyd, 2015; Stewart; Dewiyanti, Gruwel, Jochems & Broers, 2004; Giesbers, Rienties, Tempelaar & Gijselaers, 2013; Harlow & Bacco, 2011) found that students perceived benefits to both synchronous and asynchronous e-mail learning environment. Now question may be raised why asynchronous e-learning performance was better for the participants. In Indian context, secondary schools students and their parents have smartphones to use where it creates a sound environment among the learners to get self-acquainted with new knowledge or information's. To some extend a question may arise is asynchronous e-learning are applicable in all Indian secondary schools, if so to what extent, if not why? This recent study clarify that learning through Email was really an innovative instruction, which motivated the learners and encourage to perceived the real learning linkage between different concepts which are accepted and supported by (Shahabadia, 2015; Szeto, 2014; Wang, 2008) found that asynchronous e-learning styles are helpful to compared e-learners with their academic performance of the learners. It is so applicable because with the implementation of new techniques and teaching aids in classroom creates an interesting settings for the students to learn or understand the concepts more clearly. It motivates and attracts the learners to learn the same thing through different modes or styles i.e. why synchronous and asynchronous e-mail learning is applicable in all Indian sec schools. When we are discussing about an online learning in relations to the present context a question may rise that is Email accessible in Indian school in formal schooling time if not why, then how it can be successful? Yes, Email can be made accessible in all Indian secondary schools during the formal schooling time as we know now in the present time all are familiar with the smart electronic gadgets and how, where and why to use it. The learning environment in Indian secondary schools was not fully technology supportive where students were getting traditional lectures for their clarification of concept. In this context, the researcher thought of applying a new online and offline learning style i.e. asynchronous e-learning (Email) in the experimental classes. During formal schooling hours if we introduce Email learning to students it can make the learning process more interesting and affordable to all equally. This study was supported by (Coogle & Floyd, 2015; Shahabadia, 2015) found that asynchronous e-learning styles are helpful in learners' academic performance. To know the significant effect of Email supported learning the researcher has undertaken the present study. During our emergency time email also plays a significant role in mailing the information's to a group of people at the

same time limit and it saves our time, energy and money. In present scenario many changes has come up in the real teaching learning process so, to know more about those related topic we have to go through different studies and sometimes a question may raise that in present world, how the researchers are applying Email in the formal learning process and is it useful for both formal and non-formal situations? When we looked into the present situation many options are available for conducting or providing information to the learners. As we know many changes has come up which leads to drastic mobility among different parts of the world. Now, in this modern era learning can be termed by different meaning like e.g. blended learning, flipped classroom learning, hybrid learning, synchronous e-learning and asynchronous e-learning etc. For understanding the new changes in the teaching learning situation the present study has been undertaken. Many researchers are applying Email in their research study areas linking up with different areas of interest. The present study was supported by (Asterhan & Tammy, 2011; Bower, 2011; Chang & Wu, 2015) found that online discussion has significant effect over face to face discussion format. During the formal learning process Email can be implemented for providing study materials, pdf files and information's to the students. Asynchronous online modes of learning styles which is very useful in teaching learning situation as it provides a flexible freedom to everyone to use it at his/her own pace. Yes, an Email are applicable in formal as well as non-formal situation because they are both online and offline mode of learning styles. Different researchers studies leads to different directions and to know it deeply some questions can be in this way-Does the results conflict with other researchers findings, if so, then how many research from Indian counterparts and how many from abroad? Yes, to some extend conflicts arises between the researchers of different countries. But there is no single study supported from India is found in regards to the result for the present study in using an Email.

The study claimed that thinking skill was hierarchical and significantly related to asynchronous e-learning performance of the students. The independent variables like convergent thinking skill, divergent thinking skill and creative thinking skills of the experimental group participants were directly correlated with their learning performance. The findings was supported by earlier researchers (Blakemore & Choudhury, 2006; Broadbent & Poon, 2015; Canvas, 2009; Petchtone & Sumalee, 2015; Songkram, 2015; Vainikainen, Hautamaki, Hotulainen & Kupiainen, 2015) found that formal thinking of an individual's level were statistically significant factors for verbal and quantitative reasoning. The present study was Quasi Experimental Design were there was no chance of randomization in the selection of the sample unit rather it encourages the random selection of 1 or many classes. So, on the basis of the design 3 classes of 3 schools were randomly selected for traditional intervention. Somehow the researcher has tried to minimize the internal validity through ANCOVA and Regression Analysis and through motivating the students to maximum use of an email during their experiment. In asynchronous e-mail learning experiment class all the students were not equally, utilizing their thinking skill during the interventions, but the maximum students' performance became high and as a whole thinking skill of students was highly correlated with the dependent variable. However, it was also found that the R^2 of creative thinking was much better than divergent thinking skill and convergent thinking skill of the students. The thinking skill of the learners' performance was more skewed towards the learning performance because of Email mode of interactions and interventions as the Google era generations students were felt comfortable to learn independently at their own pace and convenience. Rather formal schooling is time bound and works on parents and teachers suggestion and decision. Again, question was raised whether this ideology or intervention is applicable to all Indian schools and among all Indian class of students. The researchers are sure about the phenomena that it could be possible to implement in all the Indian schools, but if government, stakeholders, administrators, teachers, parents and students himself or herself take interest to apply in the teaching- learning process. Not only this but also maximum secondary school students now-a-days using smartphones to chat in WhatsApp, Facebook and other social media. That is why the study claimed it is possible to implement not only in all Indian schools but also in other countries too. The study claimed that the executive functions were hierarchical and significantly related to asynchronous e-learning performance of the students. This result was supported by earlier researchers (e.g. Becker, Miao, Duncan & McClelland, 2014; Bull, Espy & Wiebe, 2008; Kane & Engle, 2002; Rued, Posner & Rothbart, 2010; Thomson & Gathercole, 2006) found that executive functions of working memory and inhibition plays a significant role in learning situations. The independent variables like working memory, self-monitoring and task initiation of the experimental group participants were also correlated among the learners performance respectively. It clarified that both synchronous and asynchronous e-mail learning enhanced the learning performance of those learners who are directly or indirectly related with factors of learning styles. The recent study confined there is a significant relationship between asynchronous e-mail learning styles with working memory, self-monitoring and task initiation learning performance of the secondary school students. This result was not supported by some earlier studies (e.g. Carlsona, Mosesb & Bretona, 2002) found that combination of inhibition and working memory do not shows any relation between EF and false belief understanding. In asynchronous e-learning experiment class all the students were not equally utilizing their executive function during the interventions, but the maximum students' performance became high and as a whole executive function of students was highly correlated with the

dependent variable. However, it was also found that the R^2 of Task initiation was much better than working memory and self-monitoring of the students. The study claimed that the attention benefit was hierarchical and significantly related to asynchronous e-learning performance of the students. The independent variables like attention time span, attention representing and attention analyzing of the experimental group participants were also correlated among the learners performance respectively. It clarified that asynchronous e-mail learning enhanced the learning performance of those learners who are directly or indirectly related with factors of learning styles. Again, question was raised whether this ideology or intervention is applicable to all Indian secondary schools or not? The researchers are sure about the phenomena that it could be possible to implement in all the Indian schools, but if government, administrators, teachers, parents and students himself or herself take interest to use it in the teaching- learning process. Also, in present time all are familiar to smart gadgets- how, where and why to use it. That is why the study claimed it is possible to implement not only in all Indian schools but also in other countries too. This result was supported by earlier researchers (Cowan, Nugent, Elliot, Ponomarev & Saults, 1999; Perez & Solis, 2007; Salo, Salmela, Salmi, Numminen & Alho, 2017) found that though attention, working memory and executive functions are separated but it sustained a fast improvement in performance of the learners.

CONCLUSION

If we compare with the European, American and other advanced countries of the world, we can find that the classroom is highly assisted with internet accessibility. In this study, the researcher found developing countries should adopt e-learning aids or styles assisted learning in their classroom. Asynchronous e-learning in Indian classroom is still in progress, not all the classroom of secondary schools is facilitated with smart classroom or internet connections etc. The learning environment in Indian secondary schools was not fully technology supported where students were getting traditional lectures for their clarification of concepts. In this context, the researchers thought of applying a new online and offline learning styles i.e. asynchronous (Email) e-learning in the experimental class. To know the significance effect of an Email supported learning approach the researcher has undertaken the present study. As a result, it was observed that technology supported learning was much better than traditional learning and it was supported by earlier researcher (Cheng & Wu, 2015; Coogle &Floyd, 2015). However, few researchers who conducted the studies in European and American countries did not support the result (Granda, Garcia, Nuno & Suarez, 2010). Now-a-days teachers are acquiring and upgrading knowledge regarding video-conferencing, using different software like EMO, Skype, Google-Duo, Orientation and Refreshers courses. The literatures found that asynchronous e-mail learning has significant relationship with the learning performance of school, college and university level students. It was found that there exists a significant effect of asynchronous e-learning performance learning among elementary students. This was because of the technology assisted asynchronous e-learning motivated the learning performance of experimental group students. The present findings can be apply in underdeveloped countries if the government, policy-makers, stakeholders, teachers, parents and students take initiative and interest to implement new style in teaching learning process. There should also be the provision of smart classrooms, internet facilities, and e-learning programs in teaching learning process. Asynchronous was supported by earlier researchers (e.g. Dewiyanti, Gruwel, Jochems & Broers, 2004) found that asynchronous group of learners performance was also better among the participants. However, few researchers who conducted the studies in European and American countries did not support the result (Bower, Dalgarno, Kennedy, Lee & Kenny, 2015) found that learning outcomes before, during and after blended asynchronous learning was not statistically significant over learning performance of the students. It was found that there is a significant hierarchical relationship between asynchronous learning styles with thinking skill-learning performance of secondary school students. This was supported with the earlier studies conducted by most of the developed countries in the countries (Samarraie, Teo & Abbas, 2013; Songkram, 2015). The independent variables like convergent thinking skill, divergent thinking skill and creative thinking skills of the experimental group participants were directly correlated with their learning performance. To implements the recent findings in Indian context the responsibility should be taken by Indian government, stakeholders, administrators and other authority to promote convergent thinking, divergent thinking and creative thinking by using asynchronous e-learning modes among the learners respectively. There should be maximum utilization of virtual learning like internet, email, WhatsApp, Skype and imo etc. in teaching learning process to meet the recent results in secondary schools. It was found that there is a significant hierarchical relationship between asynchronous learning styles with executive functions learning performance of secondary school students. This was supported with the earlier studies conducted by most of the developed countries in the countries (Kane & Engle, 2002; Thompson & Gathercole, 2006). The independent variables like working memory, self-monitoring and task initiation of the experimental group participants were directly correlated with their learning performance. Different strategies are available to improve executive functions (Stroop Task, Saccadic Test and Inhibitory Control) of students that could promote high performance and retention among Google generation students.It was found that there is a significant hierarchical relationship

between asynchronous learning styles with attention benefit learning performance of secondary school students. This was supported with the earlier studies conducted by most of the developed countries in the countries (Bosse & Valdois, 2009; Chen & Wu, 2015). The independent variables like attention time span, attention representing and attention analyzing of the experimental group participants were directly correlated with their learning performance. Different programme and policies like frequent IQ test, yoga, meditation and other co-curricular activities should be implementing in educational system to improve attention benefit of students that could be transfer into learning situation to improve the learning performance of the leraners.

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E-LEARNING IN ENGLISH CLASSROOM: AN ANALYSIS OF FACTORS LEADING TO ITS ACCEPTANCE

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ABSTRACT
With the colossal development in information technology and communication networks, a paradigm shift has been created from the paper-based education to web-based education. The web-based education is applied to the learning of languages also on par with technical education in engineering colleges in India. In recent years, with the assortment of smart phones and the internet, students are more willing to use technology and online resources as assets to learn English. The engineering educational systems uphold the learner-centric online English learning based on the needs of the students for placement and the demand of the situations. The traditional or face-to-face classroom settings are shared by online learning of English. This paper focuses and illustrates in detail the attitude of the students in undergoing online English learning activities. Their objective of the researchers is to scrutinize the attitude of students regarding the credibility in practicing e-learning of English. The present paper does not aim to analyze the academic improvement of the students through the e-learning of English. Relatively, it ponders on the attitude of the students towards online learning of English. The paper analyses the data related to the factors leading to acceptance of online learning of English among the engineering students at Mepco Schlenk Engineering College, Sivakasi. The responses of the students reveal that they are absolutely in favour of e-learning of English.
Keywords: Virtual learning, online learning of English, Informal learning of English, Self-Learning of English.

I. Introduction:

With the colossal development in information technology and communication networks, a paradigm shift has been created from the paper-based education to web-based education. The web-based education is applied to the learning of languages also on par with technical education in engineering colleges in India. The technical institutions are pouring their capital in building well-equipped language labs with internet connectivity encouraging learning of English through various online sources. Their main intention in training the students is to make the students acquire good English that could open the avenues for premium jobs. The students must have better English knowledge because all the technical interviews are conducted only in English. As a part of the recruitment process, the students have to take up aptitude tests which include a subset of verbal ability questions testing their English exclusively. Consequently, special training in acquiring the English language in addition to the regular syllabus and curriculum has become part of the Engineering college pedagogy activities. Moreover, some students who prefer to fly abroad may have to take up international examinations testing the CEFR level – an international standard for judging out the ability within a language. All these are online examinations that require a time-bound sharp analysis and right response in English.

The term “e-learning” is well-defined by K.H. Fee as “any learning that involves using the internet or intranet.” In the past, learning through the internet was considered a great treasure of experts. In recent years, with the assortment of smart phones and the internet, students are more willing to use technology and online resources as assets to learn English. The engineering educational systems uphold the learner-centric online English learning based on the needs of the students for placement and the demand of the situations. As K.H. Fee points out, the online English learning allows the students to be more independent as they “have control over the content, learning sequence, pace of learning, time,” etc. Therefore, special training in learning English using the internet has become a part of scholarship in technical institutions. In engineering colleges, traditional or face-to-face classroom settings are shared by online learning of English. This paper focuses and illustrates in detail the attitude of the students in undergoing online English learning activities.

A) Statement of the Problem:

As many colleges of Tamilnadu have mandatory language labs in line with the AICTE directions and curriculum, it has become necessary to use the internet and intranet for learning English. The students of Mepco Schlenk Engineering College, who are put under this umbrella, also need training in online English learning and so they are given a chance to undertake an online English certificate course in addition to the regular curriculum. Yet there is a difference of opinion among the teachers regarding the online learning of English and direct teaching

methods in the classroom. They had certain skeptical questions regarding the correct focused learning of English using intranet and internet and it is confirmed through their discussions. Some felt it be useful while a few considered it to be a waste of time as it is not designed in a direct teacher-centered manner and there is a lot of possibility of malpractices in responding to the interactive dashboard of the certificate course whereas such laxity is not possible in the real-time classroom. Though their opinions are scrutinized, the researchers have not endeavored to analyze here the opinion of the teachers. Their objective is to scrutinize the attitude of students regarding the credibility in practicing e-learning of English. The present paper does not aim to analyze the academic improvement of the students through the e-learning of English. Relatively, it ponders on the attitude of the students towards online learning of English. So, there was no necessity of pre-tests and post-tests for stemming scientific findings from the participants of the research. The paper presents an analysis on the data related to the factors leading to acceptance of online learning of English among the engineering students at Mepco Schlenk Engineering College, Sivakasi.

B. Objectives:
The objectives of the paper are to

- Analyze the attitude of the students on online learning.
- Insist on implementation of e-learning along with traditional lecture method of English

II. Research Design

- Literature survey
- Methodology: Data collection through questionnaires on knowledge acquisition through e-learning.
- Data Analysis of the student' attitude on erudition of English through e-learning.
- Suggestions.

A.

B. Literature Survey:

Online learning has become an important component in education, and it is believed to provide unique advantages in the learning process (Appana, 2008; Dolence & Norris, 1995; Katz, 1999; Shopova, 2014). When e-learning is applied to English teaching, the pedagogical strategies have to be fundamentally changed from the direct lecturing on English lessons to the indirect mentoring of the students which the teaching community hesitates to accept. Kleiner, B, Thomas N, and Lewis L feel that many teachers do not use this technology in their classes because of the lack of time, knowledge, and interest. In the past years, English teaching has been dominated by teacher-centered strategies in India, particularly in Tamilnadu, focusing on teaching grammar and reciting words. Huiwei Cai says "If we insist on emphasizing grammar and vocabulary, then students are only good at passing exams, and cannot master a language. If we do not change, the new generation will still be not satisfied with school education in the next 30 years". The result is that students are made exam-ready and so they score good marks in the exam. Yet, they cannot speak or write in English properly. To get a better English Learning experience, online learning should become part of the pedagogy in English classes.

Chhabra P says that the judicious use of blogs, twitters, tubes, podcast, smart boards and phones can facilitate and enhance both teachers and students' language learning as the use of these facilities not only provide the learners with authentic input but also they are gates to receive and share information. In e-learning, the students' focus lies on skills like writing and speaking through online chats and discussion boards after the silent processing of the input data through listening and reading. This gives a chance for students to prompt their English competency rather than the traditional lecture methods with an exclusive focus on listening. It gives room for the practice of the language. The Language acquisition does not depend on grammar and invalid exercises, but on student's own constant practice. As Huiwei Cai puts, "E-learning can turn the pedagogical strategies to student-centered, focusing on fostering linguistic sensitivity and improving listening comprehension and ability of expression so as to enable students to master English as soon as possible. Language acquisition does not depend on grammar and invalid exercises, but on student's own constant practice. That is the E-learning Pedagogical Strategy." It is easy to monitor the students if the teachers have real interest to lend a hand the students in online learning of English. Bhukya Alwar Swamy says, "Teachers can view their students' work online at any time. Learners will not miss their lessons as they can see and listen to the teacher through an online webcam and receive tests, quizzes, and notes from electronic online whiteboards."

C. Methodology:

The research study focused on gathering information on e-learning of English from students who were taking the online certificate course so that they could respond to the questions based on their synchronized personal experiences. The Online English Learning and Assessment solution from the certificate course had the content completely aligned to the CEFR, and had a suitable practice module for competitive exams. It had a strong focus on employability and preparedness for higher education. The students were given an orientation on the ways to

access the materials for the course. It was ensured that students do not have a computer and internet anxiety. Students were allowed to do the course for two hours a week in the regular working hours and after the working hours also if they needed. By the time the survey was conducted, 40% of I year B.E/ B. Tech students have completed the online course, the other 40% of them were nearing the stage of completion and the remaining 20% students were in the midway of the course. As all the I year B. E/ B. Tech students had the learning experience of English using internet, the reports on responses may be taken as authentic and acceptable. A questionnaire consisting of ten questions on online learning Experience of English was given access to I year freshmen of Mepco Schlenk Engineering College using Google forms. 363 students who had undergone online training in English for ten months provided response. Those students were from various engineering branches and embraced heterogeneous learners of the different social background, the medium of learning and the ability of knowledge absorption. The data provided by all the 363 participants are taken for analysis.

D. Data Analysis

Motivation and interest have tremendous impact on the learning of any language. It can be applied to English also. If the learning modules of English are interesting and engaging, students will naturally feel that the language is interesting. From their e-learning experiences of the past, the students responded to questions related to motivation and development of LSRW skills through online learning of English. The questions are:

1. Through my learning experiences, I feel motivated to learn English by the use of Internet because it is interesting.
2. Internet applications can be used in the class to enhance the learning of LSRW skills.

Figure 1: motivation for LSRW skills through e-resources

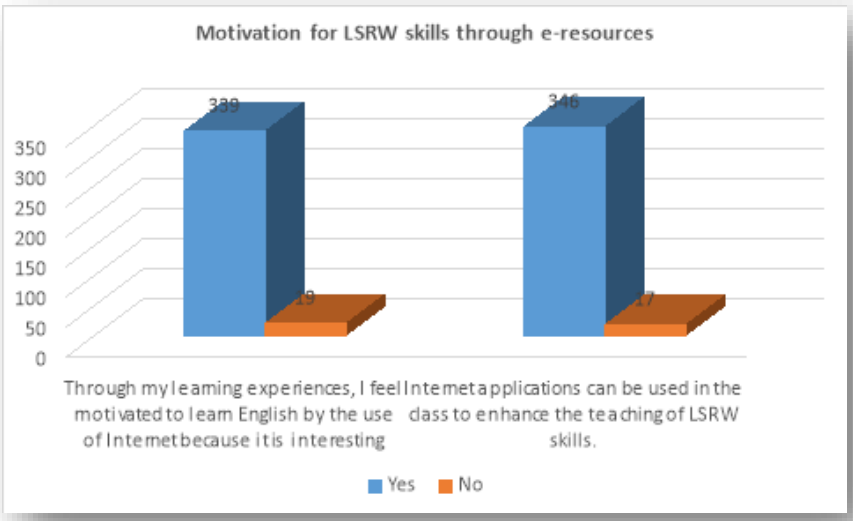

Figure 2: motivation for LSRW skills through e-resources

The above chart says that for questions 1 and 2, around 93% and 95% of the students have given positive responses respectively. The responses tell that the students have absolutely been motivated by the online learning of English. As the web based learning of English provides the high efficiency resources pertaining to the enhancement of LSRW skills like listening to video and audio, exercises related to speaking in real time situations, reading comprehension passages, adding on simple write ups, interpretation of pictures, cloze tests, grammar exercises etc., the students find the learning experience motivating. As the students are provided a monitored and guided online learning through proper learning modules compiled by the experts, the students totally focused on all the four skills of language along with grammar and vocabulary. Except a few, students have spoken in favour of enhancement of LSRW skills through online learning.

After the questions on content of English, the students were asked two more questions related to their ease and comfort in online learning of English. The questions are:

3. Through my learning experiences, Internet resources provided me more opportunities for autonomous (independent) learning.
4. E-learning offers the possibility to efficiently manage my time of learning at my convenience.

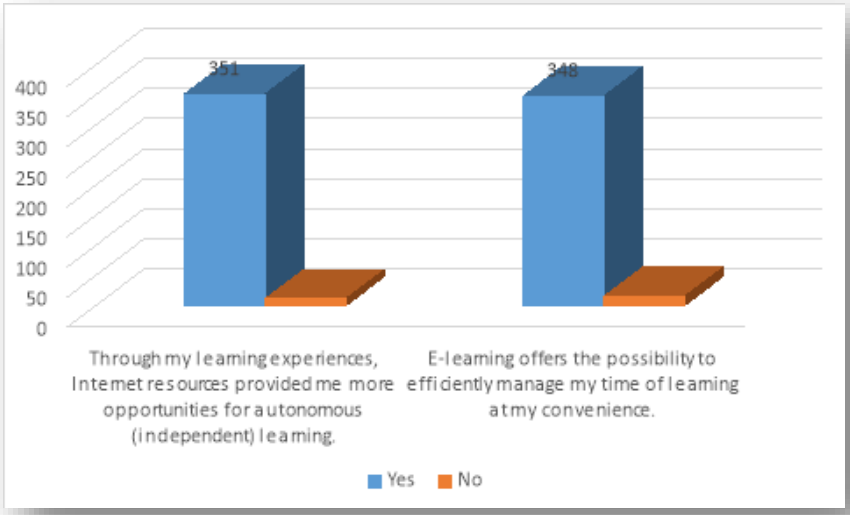

Figure 2: Autonomy and ease of e-learning

Figure 2: Autonomy and ease of e-learning of English:

The above graph shows that 351 and 348 students out of 363 have given affirmative response to questions 3 and 4. While doing the online learning of English, the students had the liberty to select their lesson from the set of streamlined modules. They may go with either one of the LSRW skills module or grammar as per their wish. They could refer to other websites also to learn the right using of unknown phrases and grammar rules. As they had this freedom of choice of topics in English learning for two hours a week in a formal lab class, they felt more comfortable. As the choice was their own, the students learnt English sincerely with complete focus on lessons. The autonomy in online learning of English helped the students to shoulder up the task with high level accountability. The materials could be accessed even after the regular class hours, which added to the convenience of their learning. Moreover, all the students do not need special training on all the language skills. The students who were good at writing can just complete the assigned modules on writing and spend more time on learning other skills. To augment the skills to be honed, they can put more efforts through e- learning. There are many websites and apps that provide special trainings.

The next question of analysis is quite interesting because it reflects the booming passion of the youth for using electronic gadgets. The question is

5. Online English learning is a good alternative to the pen-paper based system.
6. In my belief, Internet resources can replace English textbooks.

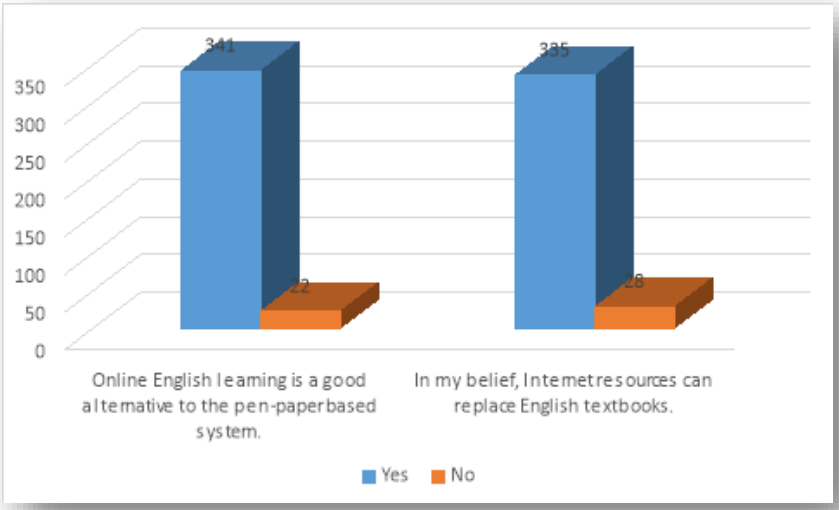

Figure 3: Paper based learning and e-resources

Figure 3: Paper based learning and e-resources:

The above chart on response for the questions 5 and 6 clearly shows that the students of this generation prefer e-resources for knowledge up gradation. Whenever they need information, they search the internet rather than the books in the library because good quality web resources are readily available at a cheaper cost in smart phones or palmtops in their hands. Unlike the past where limited numbers of books are the ultimate source of knowledge, the e-resources of today are available in plenty and can be downloaded for free of cost or low-cost payment. Moreover, these sources of English language learning are available in the form of interactive texts, audios and videos that hold the attention of the English language learners. It is obvious from the analysis that the students of English language prefer to tap the screen or press the keys rather than using pen and paper as electronic media is their untailored everyday habit. Consequently, they don't have an affiliation to the printed materials in the similar way in which their parents had. The habit of reading the printed materials has dwindled as more reliance is on e-sources. As the online English resources appeal to the senses of the English learners with interactions and animations rather than the printed materials and reaches the brain with new impacts, the experience of learning remains pleasant. When students use internet for English lessons, they come across the lessons of higher quality offered by the global educators. They come across the native speakers' lesson also. As a result, their preference is for internet English materials rather than paper based learning.

The involvement of the students in learning English is very important as it ensures the quick and assured acquiring of the language. The questions testing this concepts are:

7. Through my learning experiences, I was more attentive (careful) in Internet-assisted English language teaching classes rather than in the classroom.
8. Over All, I prefer e-learning of English and I believe that it is better than the traditional lecture method of learning in the classroom.

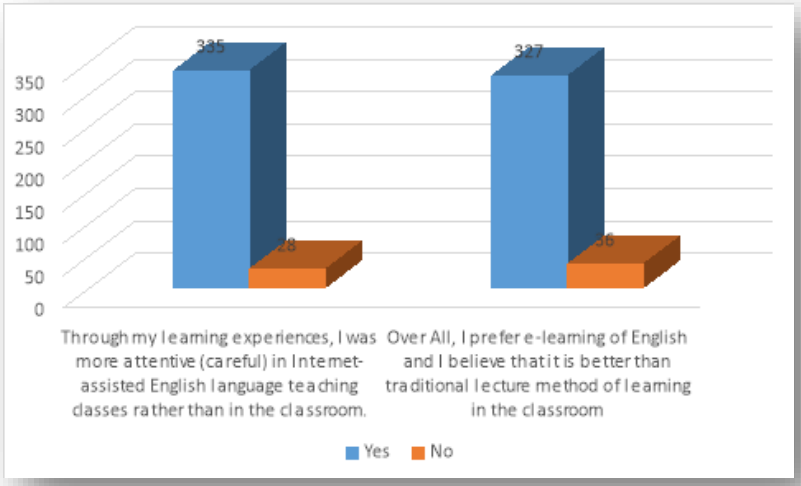

Figure 4: conscientious learning of e- resources in English

Figure 4: conscientious learning of e-resources in English:

From the above chart, it is clear that 335 and 327 students have answered in favour of question number 7 and 8 respectively. They feel that the online English resources need more attention as it demands an individual response or interaction from each person where as individual attention is less possible in a huge classroom. The e-learning materials in English have a variety of attention-grabbing interactive platforms like dashboards and multimedia tools with a combination of texts, images, animations and video recordings. The students integrate and manipulate the learning concepts from various sources, unlike in the classroom, which is mainly unidirectional as lead by the teacher. During e-learning of English, the students cannot be just be passively listening or taking down the notes as they do in the traditional class. The students have to be mentally vigilant during the online English learning process and physically active by involving in simple activities shifting from one interface of English to another. This keeps the learners alert. The content of learning of the current segment is being chosen by the English Language learner, although the overall path of learning is defined by the mentor. The students feel more responsible and dedicated as the lessons are their choice. Most of the content delivery platforms for English language need a periodical response from the students. So, the students are active and there is less chance of distraction. However, in the classroom settings, the teachers are active and the students are passive receptors many a times. The teachers keep on conveying what they know, feel or demand some response from students which the students may not find interesting or agree with. Though the concepts are valuable and the approach of teaching is worthy, students may find the lessons to be tedious because the teacher is active whereas students have to be passive with no space for self expression in a big class. Even if some students prefer to convey their opinion, they do not do so because they have inhibition to express themselves in an English class. In the online learning, they are free to give their response because it is a one to one interaction between the computers and the English learners and so they need not worry about holding a good image among peer group. They can proceed with more confidence.

All the language learners are naturally curious to know their progress levels. Students prefer to check their language competency and to decide whether to proceed with the same English learning strategies or to modify it in future. So, they were asked to answer the following questions.

9. Online English Learning is more comfortable and enjoyable to me because it gives immediate feedback (marks) on my performance.
10. I think I would like to use Internet assisted language learning materials and activities in my future EFL learning as much as possible.

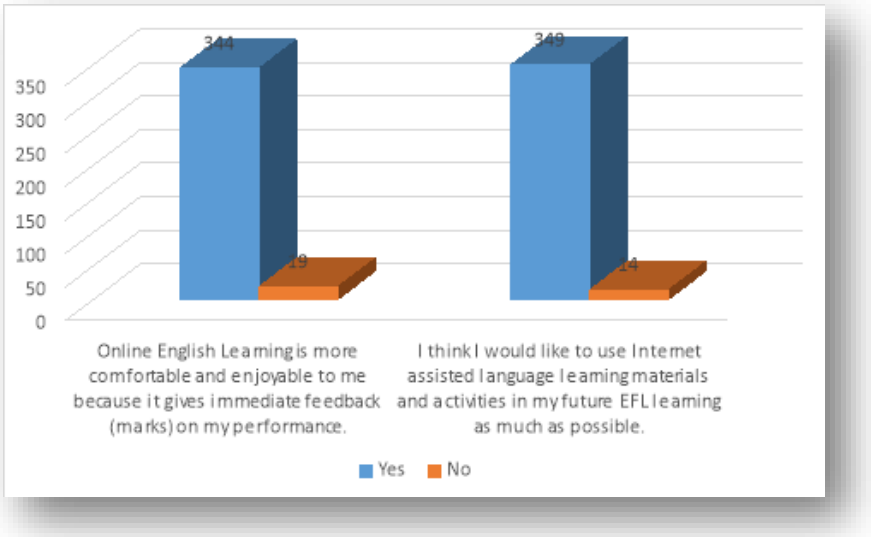

Figure 5: Feedback status and future usage of online English learning

Figure 5: Feedback status and future usage of online English learning

The chart 5 shows that 344 and 345 students have favoured the questions 9 and 10 respectively. In a classroom of heterogeneous learners, it is not possible for the teacher to provide feedback to each and every individual. Even if a formal evaluation process is administrated, it takes time for a teacher to give feedback unlike the online interactive modules. The teachers take a few days to evaluate the tests. By the time, the students lose interest in that evaluation process and results. Most of the online evaluations are added with the correct answers for the mistakes committed by them and the reasons why the answers are wrong. Students prefer online English learning because it is user friendly and appealing to the younger generation. Because of many positive aspects of the online learning of English, students are ready to accept it for their future English language acquisition.

Suggestions:

From the above analysis, it is obvious that the students have steadfast interest in e-learning. In the era of technical boom, English learning through electronic media is possible and feasible with wide numbers of enthusiasts. As the students have a little pride in using the gadgets, the same can be tapped in the right way to make them learn English with hunger. The passion for e-resource can be made an asset for learning online English. Once the students start using the gadgets for improving English, they explore the contents themselves and get interested in auto-learning. Self-learning of English is the best choice of e-learning strategies as it drives the individual with sincerity and perseverance. As the web based learning of English offers the high proficiency resources pertaining to the enhancement of LSRW skills, the students of English find the erudition motivating.

Although the concept of e-learning of English is readily accepted by the students, the teachers still have a little hesitation in approving learning of English using intranet or internet. When the lecture is delivered in the class, they have the satisfaction that the idea is conveyed to the students clearly and majority of the students have learnt it. They have the confidence that they lead the students in the right direction through good explanations and elaborations of concepts through direct method of teaching whereas that kind of teacher satisfaction is lagging in online learning. However, it is the duty of the teacher to act as a mentor in suggesting the right route of synchronizing the need of the student and the pleasant English learning. The teachers can allocate some of the topics to be imparted through direct learning method and the remaining topics to be learnt through self-learning using online mode. The systematic online learning of English must run in parallel with direct lecture method and this has to be incorporated in the syllabus itself.

Monitoring and managing both types of classes is indeed a dual work to the teacher as the activity of estimating ensured e-learning of English also demands time and energy. The students' must be periodically evaluated through some online quizzes, blogs, and other interactive platforms or through direct interactions in the class. The outcomes of e-learning may fail if the students are not mentored in the right direction with proper guidance and feedback. The possibilities of malpractices in e-learning of English like copying, screen sharing, and helping the friends by completing the task of one person by another can be mitigated by the highlighting the need for them to

use English. Yet another criterion to impress the e-learning students of English is to create awareness on job opportunities that English could generate for them. The unfortunate fact prevailing here is that the teachers know all these techniques to motivating the students for e-learning of English, but they are held tight with so many academic and non-academic activities and they have less time for cordial interaction with the students on this topic.

Limitations:

When there is more reliance on E-learning in the classroom, the relation between students and teachers will be greatly change. The students may lose respect for the teacher and start depending on e-resources. The teachers must be the leaders in taking the students through the learning modules and their hidden presence must be felt by the student. If so, the students will have learning responsibility and admiration for the teacher. As online learning of English focuses on the individual and independent learning and not on the open group interaction which is essential for placement. In fact activities like oral presentation and discussions are more effective only in the real time face to face interaction rather than the collaborative platforms through internet. However, the facility must be made available to the students who hesitate to talk in front of the whole class in the beginning stage of the training. This will make the students shake off the language inhibitions. Yet another disadvantage is the possibility of copying and open support received from friends for the completion of task and responding mechanically to the questions posted without understanding of the ideas conveyed.

Conclusion:

Those who have forethought and scientific spirit will realize the need and the importance of e-learning in English teaching learning. E-learning will greatly improve the efficiency of learning English leading to good English knowledge absorption and consequently the placement percentage. E-learning of English is the trend of the day and need of the hour. It is quite good for reducing the burden on the students. Once the pedagogical strategies are modified, the teachers may also equally find the English e-learning tools to be interesting. Online learning of English is accepted nowadays as it is student-centered with focusing on direct interest of students and nurturing sense of language. Many teachers will accept it in future.

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EXAMINING THE IMPACT OF E-LEARNING ON RESOLVING WORK PLACE ISSUES IN MANUFACTURING INDUSTRIES AT CHENNAI CITY

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ABSTRACT
The performance of every organization may be affected by internal and external factors. The predominant internal factor which may affect the performance of the employee is 'workplace issues' such as bullying, discrimination, role conflict, communication, low motivation & job satisfaction, gossip, etc. In the present research, the researcher has taken only four major workplace issues and wants to find out the effect success of e-learning system on minimizing workplace issues of the selected manufacturing organizations from Chennai city. The sample size of the research is 250, chosen from five different manufacturing organizations. The primary data was collected through the questionnaire with 50 items. The findings of the study revealed that all the three hypothesis formulated based on the conceptual model is true and significant at 1% level. Based on the outcomes of the research it is determined that the successful e-learning systems was able to minimize the workplace issues of the selected manufacturing organizations from Chennai city, India.
Keywords: success of e-learning systems, workplace issues, manufacturing industries, role conflict, communication, low motivation & job satisfaction.

INTRODUCTION

Every individual around the world spends significant portion of their life-time in their workplace. The employees those who find comfortable in the organization used to have long-term association with the organization. Present technological world integrates the individuals from different geographical locations, cultures, and demographic profile in the workplace, which may lead to interpersonal conflict, and workplace issues. All kind of the organization may face workplace issues and there is a need of robust mechanism to prevent, control, and resolve such issues in the organization, because workplace issues may create negative outcomes in the organization such as low motivation & productivity, increase in absenteeism, turnover, etc. Educating the seriousness of the issues and its negative consequences which may affect the individual and organization may prevent, control, and resolve the workplace issues at the least time possible. The organization may use e-learning modules or online resources in order to educate the employees about workplace issues. The proper structuring of e-learning modules with appropriate content may affect the knowledge of the individual which in turn educate them which is right and wrong, and make the changes in the behaviour of the individuals. The foremost objective of the research is to inspect the influence of e-learning on resolving work place issues in manufacturing industries at Chennai city.

CONCEPTUAL FRAMEWORK OF THE STUDY

E-Learning: E-learning is one of the best significant services driven by the internet. It has the possibility to convert in what way and when employees learn and integrates a learning culture with the job atmosphere. It is not only about training and teaching but also about learning that is custom-made to an employee. So E-learning is a plat form where various fields such as web-based training, technology driven instruction and online training come together. Hence tablets, computers and smartphones enable and improve the approach towards e-learning. Workplace is termed as a place where employer-employee build relationship. Here the employer delivers the tools such as e-learning whereas employees have to handle and mature their skills and employability and are finally are accountable for upholding the value that the employee add to the company they are employed. E-learning can encourage employees to devote more time and energy in learning at workplace. The key is that the alternate and flexible learning atmospheres provided by the technology can decrease the hindrances and

everyday problems of arrangement learning activities with the job schedules. However, e-learning delivers noteworthy economic and social gains over the traditional classroom learning. Henceforth this e-learning benefits include anytime, anywhere, any location learning, time reduction in attaining new skills because of the nature of e-learning with its visual, feedback mechanism and period taken to learn are the other merits. While with regards to the investment E-learning is considered to increases its payback throughout its lifetime.

Workplace
It is the physical place where employee carry on his job for sake of his living. Where a place can vary from a home-office to a big factory or an office building.

Workplace issues
It is the issues worried with the working environment, behavior of the employee, flow of communication, employee recruitment & termination, and employee growth, which consequence in the whole performance, constancy, and culture in an organization. It is found that employee nearly spend about one-third of their adult lives at workplace, which reasons for workplace issues to become mutual source of stress for many employees. In the modern world it is highly difficult to have a place of work where each and every employee's role, their anticipations, and personalities match work flawlessly with each other, without conflict. As such, certain workplace issues may even be a reasons for negative psychological symptoms. Moreover research has also indicated that perceived stress at the workplace are related with a higher prevalence of mental health issues which may cause anxiety and depression.

Issues at Workplace:
Role conflicts: It occurs when there are incompatible demands placed upon a person such that compliance with both would be difficult. Persons experience role conflict when they find themselves pulled in various directions as they try to respond to the many statuses they hold. Role conflict can be something that can be for either a short period of time, or a long period of time, and it can also be connected to situational experiences. Role conflict happens when there are contradictions between different roles that a person takes on or plays in their everyday life

Communication: It is the course of exchanging information and ideas. There are various methods of communication. In order to be an efficient and appreciated member at the organization it is significant that you become capable in all of the various methods of communication that are suitable which even include the e-learning methods of communication. It is a two-way process of attainment a mutual understanding, in which members not only exchange data, news, ideas and feelings but also generate and share meaning. In broader sense, communication is a means of linking people or places.

Low job satisfaction: Job satisfaction has been defined as a rewarding emotional state succeeding from the appraisal of one's job; an affective reaction to one's job; and an attitude towards one's job. As job satisfaction is a widely researched and complex phenomenon, it follows that there are numerous definitions of the concept.

Performance issues:
A performance issue is a failure to meet the basic requirements of a job. They are based on reasonable expectations of behavior and results as defined by a job description, performance objectives, policy and a firm's organizational culture.

LITERATURE REVIEW

Impact of e-learning on resolving workplace issues
Ahmed et al. (2016), in their research highlighted challenges that hinder effective implementation of e-learning in Iraq and recommend possible solutions to tackle them. A total of 108 respondents voluntarily participated in this research. They consisted of academic staff (N=74), professors in charge of e-learning (N=3), and undergraduate students (N=31). Three methods were used to collect data: a survey instrument, semi-structured interviews, and focus groups. Data was then analyzed and reported quantitatively and qualitatively. This provided in-depth understanding to the current status of e-learning in public Iraqi universities and highlighted major hindrances of its successful application. Based on this analysis, the study proffered many recommendations that should be considered in order to fully benefit from e-learning technologies.

Doculan (2016), the development that has taken place in internet technologies has changed globally the learning approaches that are current adopted. With this regards there is no exemption to a county like Philippines. E-learning has become more popular because of its usefulness and potential in the Higher Education Institutions. Therefore it is must for any institution to evaluate the merits and demerits E-learning before it is implemented.

This would be able to ascertain the wants and factors that directly affect the readiness to use. The present study is conducted to assess the readiness of Philippine Higher Education Institutions to use E-learning.

Noren Creutz and Wiklund (2014), in their research explored the addresses of learning that are portrayed by e-learning at workplace. The basic objective of this research is to know how learning is defined in study inside this area. The researcher has reviewed articles on e-learning at workplace from the year 2000 to 2013, where the results are offered in four descriptions emphasising four overlapping time phases with different truth regimes: celebration, questioning, dissolution and reflection. It is also established form the research that learning as a phenomenon tends to be relegated in relative to the digital technology used. With regards to the above mentioned facts it is debate for a proposal of more critical and problematized method to e-learning, and a deeper understanding of the tasks and prospects for organizations and employees to gain knowledge in the digital era.

Habib Ullah Khan(2013), Communication has a role of heart in all kinds of educational interactions, with the popularization of computer technology for home and office use, teaching methods have changed communication styles from plain lectures to multimedia presentations. These new trends in education are in their infancy, online learning or E-learning, and are quickly becoming an important aspect of education in our future around the world. In spite of easy availability of new multimedia support, still the uses of technological tools of communication in the educational fields are in their initial stages, in the under developing countries like Oman. We have yet to fully experience the transformative effects of these mediums, particularly on web based learning. Group work activities are another main point or task in the high education. Switzer and Shriner were of the view that students are the most obvious party who benefit from group work among students, faculty members, and the community. According to them there are four overlapping types of benefits for students. These are: 1) immediate educational benefits, 2) immediate social benefits, 3) critical thinking benefits, and 4) long-term career benefits. Different researchers were of the opinion that face to face communication will not solve the empowerment problems in group work activities. As, through FTF interaction male dominant role can be produced due to identity of speaker, eye contact, nodding, moving the hands , and facial expressions etc. In this situation suitable adoption of technology can be consider as an alternative mode of communication, where there is a chance of discrimination. This case study will be a further step in addition to the previous technological tools & group work related researches. In this researcher will try to explore that how suitable technological tools can play a role to overcome the group work problems and to increase the performance of the students in the developing countries like Oman.

Chen and Kao (2012). E-learning systems, approved by organizations for training the employee to improve the performance of their employees, which are categorized by self-directed, independent learning. Motivation for learning is very important in designing e-learning practices at workplace. There is very much limited research has been carried out by various researcher in the field of alignment of e-learning with individual learning requirements and organizational goals. This research aims to explain the significance of learning motivation towards e-learning systems by the employees' which is grounded on the information systems achievement model. The researcher has collected the data form 185 employees who access e-learning systems in their work place in Taiwan and investigated through PLS. Outcomes of the research display that employees' motivation towards learning, which reflects their learning wants and strengths, inclined by perceived usefulness and fulfilment towards e-learning, and their use of the systems, which improved their job performance. Moreover the outcome of the study also confirmed that significance of employees' motivation towards learning and the necessity for position of employees' learning requirements and organizational objective is achieved through e-learning training.

Hsiu-Ju Chen (2010), E-Learning systems are progressively has being accepted by todays modern enterprises, since of their cost-down effect. But, the existing literature offers little perception into their beneficial significances. It is anticipated that a transmission of the learned knowledge, skills and attitudes of the employee towards jobs will occur through e-learning systems use. Henceforth it marks e-learning systems a valuable instrument for enlightening outcomes of the job, though it is not properly standardised. The IS achievement model, which captures together the technological and human elements of information systems, delivers a theoretical basis for connecting system use to system job. The present research inspects the association among e-learning systems use and overall outcomes of the job which is grounded on the model. The researcher has collected data from 193 e-learning system users were investigated with partial least square (PLS). The research outcomes display that that e-learning systems are observed as useful and filling the employee's need of e-learning systems use is significantly related with complete outcomes of the job. The outcome show that there is a basis for instituting a link among an organization's investment in e-learning and human capital management, it also advance empirical support to the IS achievement model.

Paivi and Paiivi (2005), discovered the application of e-learning as a tool for learning at workplace, where it was used as a form learning for the adult and organizational as well with the theoretical point of view. Moreover the researcher has also review various empirical studies on current explanations to pedagogical difficulties faced in workplace learning in broad view and in specific with regards to e-learning. Lastly, the research has focused on the challenges faced with the further growth of e-learning solutions at the workplace. The researcher has also reviewed theories of adult, workplace and organizational learning to bring out key pedagogical suggestions of these theories from an e-learning view point. But few articles related to electronic networks and communication tools has also been developed for workplace learning are also termed here. The result displays the growth of effective e-learning solutions for the use of work organizations which needs integrated knowledge of research from various sources: sociocultural, cognitive and organization theories of learning. The inference are grounded on empirical illustrations and the literature review pedagogical challenges and theory-based procedures are offered for the design of e-learning atmospheres at workplace. These contain addition of theoretical knowledge with applicants' practical skill, support for the explication of implied knowledge, and backing of association and knowledge exchange among various groups of individuals. Hence this research incorporates various theoretical methods for the design of e-learning atmospheres at work place.
Wagner et al. (2005), the need for training in Occupational Medicine in India is well known. The majority of company doctors cannot leave their work and join a residence program. The question which course delivery mode - residential or blended or distance education - is appropriate to teach working company doctors is therefore an urgent one. Adult education: Adults learners - in contrast to young students - have a lot prior experiences and knowledge which they want to use. They have tight personal schedules and are very practical and goal-oriented. They usually have a fulltime work. Adults need more guides than lecturers. Immediate use, practice by doing and discussion groups are the most powerful tools in teaching. Lecturing seems to be the most ineffective teaching method. Distance education is widely used already in teaching occupational health & safety and occupational medicine (OS H) in other countries. Almost 100% of all post-graduate teaching in occupational medicine is done by distance education in the UK. A "blended" course model seems appropriate for Occupational Medicine teaching. It has contact phases and self-learning phases The Indian Association of Occupational Health could play a leading role in expending high quality teaching in Occupational Medicine. These activities would contribute to the Government's goals to strengthen Occupational Health in India. This article discusses distance education and online teaching as one viable way to deliver high quality training in Occupational Medicine to working company doctors in India.

Elizabeth et al. (2004), Seven in-employment postgraduate Master's level students in an e-learning unit participated in this research, designed to identify tensions between participation in a community of learning that was part of their studies, and participation in the communities of practice that they were engaged in at their workplaces. It was hypothesised that participation in both these forms of community in their different contexts may enhance each other, or could potentially have a disrupting effect on each. The research employed an interviewing technique. The students' perceptions of the impact of participation in the one form of community on their participation in the other was mixed, with some suggesting that it was enhancing, and others suggesting the contrary, or that there was no impact. The findings indicate that the enhancing effect of participation in communities of learning relevant to a learner's workplace community of practice occur when the learning tasks are designed to enable negotiation of tasks and collaboration with learners who have similar workplace issues.

METHODS & SAMPLES

The present research is conducted in manufacturing industries context. The descriptive research design is followed in this research. The research is attempted to describe the employees' perception towards success of e-learning systems followed in selected manufacturing industries and its impact on minimizing workplace issues of the organization. The survey was conducted to collect the primary data from the 250 samples from five different manufacturing organizations from Chennai city, India. The structured questionnaire with 50 items, and three sections were used for the survey. In which first section deals with their personal details such as age, qualification, designation, department, experience in the present organization. The second section deals with success of e-learning systems using e-learning success model developed by Holsapple and Lee-Post (2006), which has three major factors namely system design, system delivery, and system outcome, however in the present research the model is slightly modified with 'workplace issues' instead of 'system outcome', because the main purpose of this study is discover the influence of e-learning system on workplace issues, so the questionnaire used in the study has two major factors namely system design, and system delivery. The system design (15 items) has three sub-factors such as system quality (5 items), information quality (5 items), and service quality (5 items), whereas system delivery (10 items) has two sub-factors namely system use (5 items), and user satisfaction (5 items). The third section of the questionnaire deals with workplace issues (20 items) with four sub-factors namely role conflict (5 items), communication (5 items), low motivation & job satisfaction

(5 items), and performance issues (5 items). The questionnaire used in the study was pretested using pilot study with 50 samples (10 from each selected manufacturing organization). The results of the pilot study indicates that the questionnaire is reliable and valid. The results of reliability analysis of the questionnaire was tabulated in table 1.

Table 1. Reliability analysis results

S. No	Factors	Reliability Cronbach Alpha
1	System Quality	0.902
2	Information Quality	0.735
3	Service Quality	0.884
4	System Use	0.821
5	User Satisfaction	0.793
6	Role Conflict	0.931
7	Communication	0.865
8	Low Motivation & Job Satisfaction	0.811
9	Performance Issues	0.926

The above table 1, it is establish that all the factors of the research has Cronbach alpha coefficients above than 0.7, which means the questionnaire used in the study is reliable and valid. In the present study, the researcher adopted percentage analysis and structural equation modeling approach using SPSS 20.0 and AMOS 20.0 statistical software.

RESULTS AND DISCUSSION

The demographic profile of the respondents are summarized in table 2, which describes the age group, designation, department, and experience in the present organization using frequency analysis with frequency and percent.

Table 2. Profile of samples

S. No	Factors	Frequency	Percent
1	**Age group**		
	18 - 25 Years	43	17.20
	26 - 32 Years	39	15.60
	33 - 40 Years	81	32.40
	41 - 48 Years	56	22.40
	More than 48 Years	31	12.40
2	**Educational Qualification**		
	ITI	64	25.60
	Diploma	87	34.80
	Undergraduate	78	31.20
	Post-graduate	21	8.40
3	**Designation**		
	Junior	132	52.80
	Middle	86	34.40
	Senior	32	12.80
4	**Department**		
	Technical	189	75.60
	Non-technical	61	24.40
5	**Experience in the Present Organization**		
	Up to 5 Years	96	38.40
	6 - 10 Years	56	22.40
	More than 10 Years	98	39.20
	Total	**250**	**100.00**

Table 2 summarize the profile of the sample with age group, qualification, designation, department, and experience in present organization.

- Around one-third of the samples (32.40%) are aged 33-40 years, 17.20% of them aged 18-25 years, 15.60% of aged 26-32 years, 22.40% of them aged 41-48 years, and only 12.40% of them aged more than 48 years.
- One-fourth (25.60%) of the samples are qualified with ITI from various trades such as fitter, carpenter, welder, machinist, etc. Around one-third (34.80%) of them are qualified with Diploma in various branches such as Mechanical, Electrical & Electronics, Electronics & Communication, etc. 31.20% of them are undergraduates, and only 8.40% of them are post-graduates from Technical, and Arts & science education.
- Majority (52.80%) of the samples are working in junior level positions, one-third (34.40%) of them are working in middle level positions, and only 12.80% of them are working in senior positions in the selected manufacturing organizations from Chennai city, India.
- Most (75.60%) of the samples are working in technical departments in various manufacturing units related to production of products, whereas around one-fourth (24.40%) of them are working in non-technical departments such as stores, administration, etc.
- 38.40% of the sampled employees are having work experience of up to 5 years in the present organization, whereas 22.40% of them are working in 6-10 years, and 39.20% of them are having work experience of more than 10 years in the present organization.

Impact of E-learning on resolving work place issues using Structural Equation Model

The conceptual model of the research was formulated based on the extensive literature surveyed by the researcher, and it is presented in figure 1. The impact of success of e-learning on minimizing workplace issues was examined using Structural equation modeling (SEM) approach, in which success of e-learning is an independent variable, and workplace issues is a dependent or outcome variable.

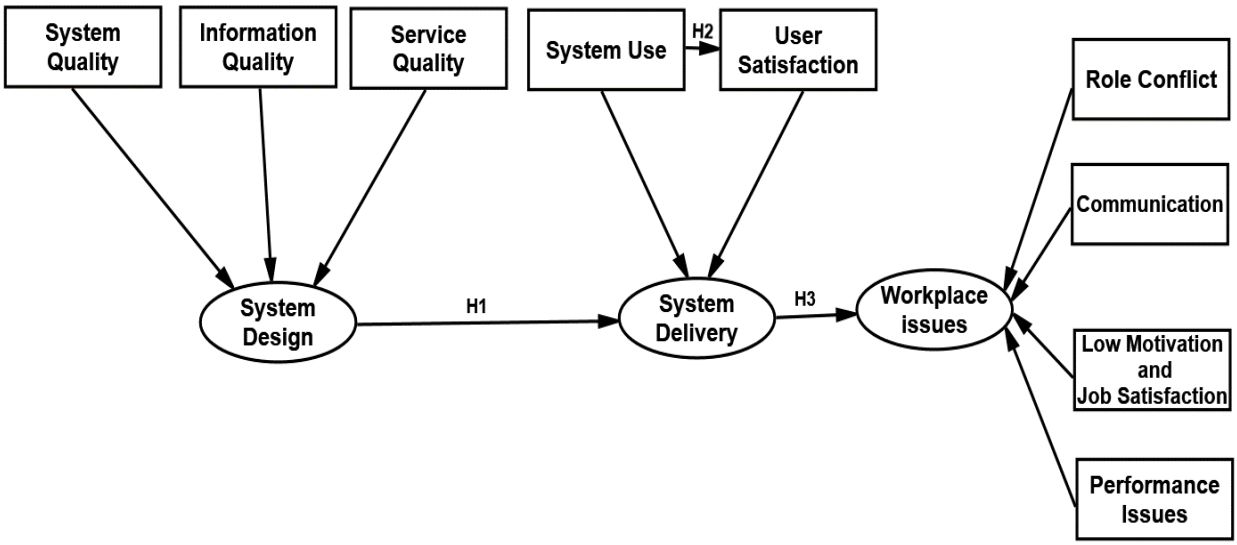

Figure 1. Conceptual model

The independent variable has two stages (i.e. system design, and System delivery). The following hypothesis can be formulated and tested using structural equation modeling approach.

H1: System design is having significant positive impact on system delivery.
H2: System use is having significant positive effect on user satisfaction.
H3: System delivery is having significant negative impact on workplace issues (or)
Success of e-learning system is having significant negative impact on workplace issues of selected manufacturing organizations.

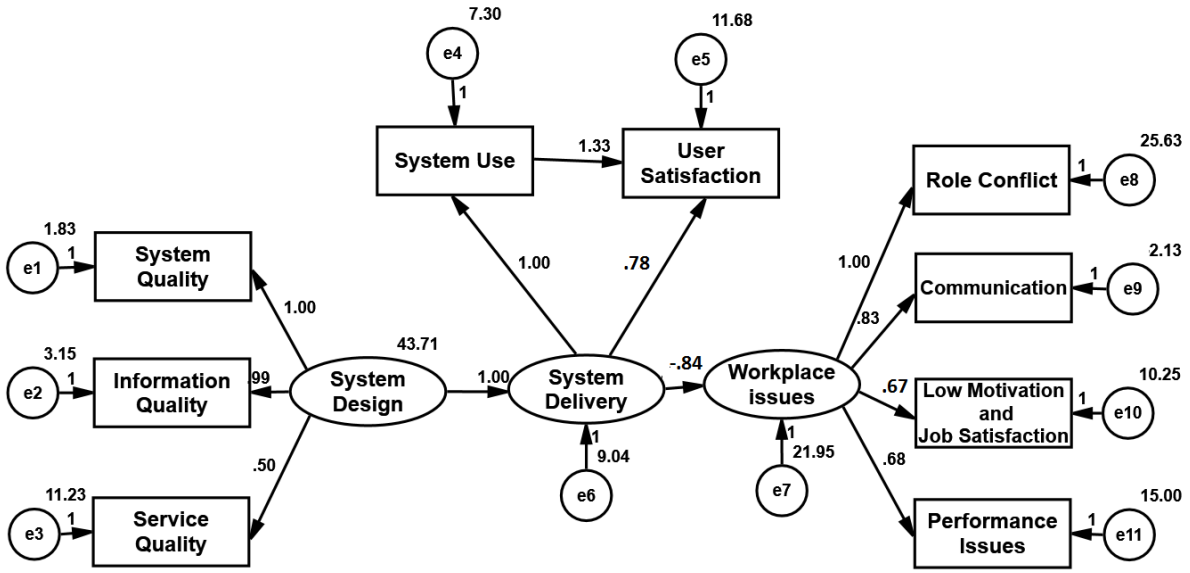

Figure 2. SEM Model with unstandardized regression coefficients

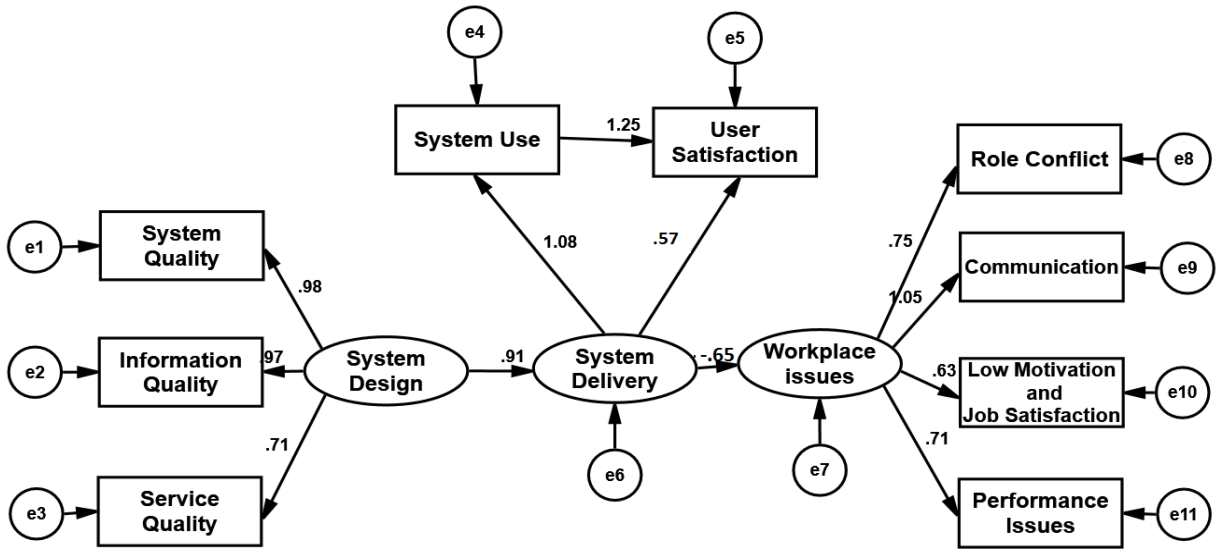

Figure 3. SEM Model with standardized regression coefficients

Figure 2 and 3 represents the SEM model of the research with unstandardized and standardized regression coefficients respectively.

From the SEM models shown in the above figures, it is found that all the factors of the system design construct, system delivery construct are having significant factor loading (i.e. more than 0.5).

The standardized regression coefficient of system design on system delivery is 0.91, which is positive and significant at 1% level, whereas the standardized regression coefficient of system use on user satisfaction is 1.25 (i.e. it is also positive and significant at 1% level, and standardized regression coefficient of system delivery and workplace issues is -0.65, which is negative and significant at 1% level, therefore the results of the SEM indicates that all the hypothesis given above based on the conceptual model are true and significant at 1% level.

Model fitness indicates of the above set model such as Chi-square, p value, GFI, AGFI, CFI, NFI, TLI, RMR, and RMSEA are inside the mention ranges which confirms that model is fit with the primary data collected for the research.

CONCLUSION

The findings of the study indicates that system design is having positive effect on system delivery, whereas system use is having significant positive effect on user satisfaction, and system delivery is having negative effect on workplace issues of the organization, which means the successful e-learning system is able to shape the knowledge, skill, and attitude of the employees and minimizes workplace issues at manufacturing

organizations from Chennai city, India. The prevention or eradication of workplace issues can produce positive outcomes in the manufacturing organizations such as enhanced productivity, motivation, morale, loyalty, engagement, commitment, citizenship behaviour, etc. So, through this research it is concluded that educating the employees through the training programmes, and e-learning programmes the organization can minimize the workplace issues in their organizations.

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EXPLORING COMMUNITY IN DISCUSSION BOARD ACTIVITIES

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ABSTRACT
This study focuses on the best practice of building community in the online classroom, with a specific interest in how this best practice can be achieved through discussion activities. In particular, we investigate the relationship between the structure of discussion board activities and the extent of community that is developed within discussion threads. We define the important elements of discussion board structure to include: (1) the prompt (2) expectations and guidelines, (3) incentives for participation, (4) instructor facilitation and guidance, and (5) tone of interactions. Then, through an analytical coding of discussion board threads, we explore this relationship between structure and community building in three undergraduate online economics courses. We find that the nature and extent of community building within discussion board activities is largely determined by their structure. Additionally, we investigate whether student perceptions of community correlate with differences in the structure of discussion board activities. Our findings suggest a positive relationship between the optimality of discussion board structure and student perceptions of community. We conclude with a discussion of practical strategies for community building through discussion activities in the online classroom.

Introduction

Online classrooms are increasingly being utilized by institutions of higher education in the United States (Ginder, Kelly-Reid, & Mann, 2017; Seaman, Allen, & Seaman, 2018). This rapid growth in the use of the online classroom has placed many capable, but inexperienced, instructors in a new and unfamiliar environment, since most are trained and experienced only in traditional instruction. While there are many similarities between the online and on-campus classroom, traditional teaching methods do not often map perfectly into the online classroom (Palloff & Pratt, 1999; Elison-Bowers, Henderson, Sand, & Osgood, 2010). The idiosyncrasies of online versus traditional instruction have generated a literature that outlines *strategies of effective practice* for online instructors (Haughton & Romero, 2009; Clark-Ibanez & Scott, 2008; Elison-Bowers, Henderson, Sand, & Osgood, 2010). These studies emphasize strategies of effective practice, or what some have called *best practices*, in areas such as course policies and expectations, time and assignment management, technological fluency, and community building. In this study, we are interested in the best practice of community building in the online classroom.

Specifically, we investigate the extent and nature of community that is developed within discussion board activities in the undergraduate online classroom. Research suggests that discussion boards, when properly structured, can be instrumental in promoting community, deep learning, and learner satisfaction in an online setting (Kasl & Yorks, 2016; Block, Udermann, Felix, Reineke, & Murray, 2008; Clark-Ibanez & Scott, 2008; Bender, 2003; Misanchuk, Anderson, Craner, Eddy, & Smith, 2000). Given this knowledge, are discussion boards typically being structured in ways that achieve the desirable outcomes of community, deep learning, and learner satisfaction? Our study undertakes an analysis of the discussion board activities in six undergraduate, online economics classes offered by the Department of Economics at Colorado State University (CSU) – a department that has been experiencing rapid growth in its online enrollments over the past five years. We investigate three research questions at the intersection of discussion board activities and community building; (1) How are discussion board activities currently structured in these courses? (2) What is the nature and extent of community that is developed within discussion board activities in these courses? And (3) Do differences in discussion board structure and the associated characteristics of community correlate with student perceptions of community? Our ultimate aim is to provide instructors with practical knowledge and strategies that can be utilized to promote meaningful interaction and community building within discussion board activities.

Literature Review

Defining Community

We begin our literature review by defining what is meant by *community*. In the most fundamental sense, community is created when students are comfortable, feel welcome, and can connect with others. This conception of community is consistent with Brown's (2001) foundational level of community, which is "making online acquaintances or friends." Further, this foundational conception of community falls within the "social presence" element of Garrison, Anderson, and Archer's (2000) community of inquiry and within Wenger's (1998) "potential" and "coalescing" stages of community development. In a more advanced sense, we define community as a fully functioning community of learners (Cross, 1998), community of practice (Wenger, 1998), or community of inquiry (Garrison, Anderson, and Archer, 2000); this advanced conception of community builds upon the foundational conception of community. A community of learners requires that a group of students be "engaged in intellectual interaction" (Cross, 1998, pp. 4). These three elements (i.e. engagement, intellectuality, and interaction) can be mapped into the three key elements of a community of inquiry – teaching presence, cognitive presence, and social presence (Garrison, Anderson, and Archer, 2000). At this advanced level of community within the online classroom, students not only feel welcome, comfortable, and connected, but they are motivated and encouraged through guidance, they engage each other in rigorous discourse and dialogue, and they build camaraderie through participation in casual, or non-formal, social interactions (Brown, 2001).

The Importance of Community

Building a sense of community in the online classroom is important for several reasons. According to the constructivist perspective, the creation of knowledge is a social phenomenon, and therefore learning is best achieved in community (Cross, 1998; Wenger, 1998). Essentially, knowledge is above all else, inter-subjective (i.e., existing between conscious minds) and therefore, its creation and transference requires interaction and connection between individuals. Community is also important due to its positive relationship with student experience. Building a sense of community through interaction promotes strong relationships between students and the instructor which creates a space where students want to be. This ultimately encourages a positive learning experience and reduces isolation – both of which are essential to student learning and persistence (Murdock &Williams, 2011; Ke & Hoadley, 2009; Chernish, Defranco, Dooley, & Linder, 2005; Richardson & Swan, 2003; Swan, 2002; Swan, Shea, Fredericksen, Pickett, Pelz,& Maher, 2000). Lastly, participation in a learning community is practical in preparing students in multiple facets of life beyond the classroom (Cross, 1998; Shellenbarger, 2017). Students' abilities to engage in discourse and dialogue and their abilities to effectively take part in teamwork and collaboration are practical skills that will enhance their social, civic and economic life.

Building Community in the Online Classroom

Promoting a sense of community in the online classroom is achieved through meaningful interactions resulting from shared interest, collaboration, and support. Online classrooms are often administered through a learning management system (LMS) that includes features such as discussion boards, chat rooms, group hangouts, and other resources. Yang and Cornelious (2005) argue that "email, listserv, threaded discussions, and chat rooms provide an efficient tool to build effective online community" (p. 9). However, additional portals (Gee, 2005) can be created for collaboration and the development of community between participants. Learners often connect on social media, Google documents, wikis, etc. (McKenna, 2018); and engagement in, and creation of, these external portals strengthens online communities (Yang & Cornelious, 2005). Other mediums, such as chat, promote meaningful interaction by allowing students additional ways to ask questions and connect with other students and the instructor. Discussion boards have the potential to initiate meaningful interaction within the LMS and can be used to assess student knowledge and build community simultaneously.

Discussion Boards as a Tool for Building Community

A number of studies suggest that discussion boards, when optimally structured, are a useful tool in promoting meaningful interaction and the development of community in the online classroom (Clark-Ibanez and Scott, 2008; Misanchuk, Anderson, Craner, Eddy, and Smith, 2000; Brown, 2002, Palloff and Pratt, 2005; Hoey, 2017). However, what does *optimally structured* mean in the context of discussion boards? Drawing on the literature referenced, we broadly define structure to include the following:

(1) *The discussion prompt*. Is the prompt open-ended and thought-provoking, or straightforward and non-thought-provoking?
(2) *Discussion board expectations and guidelines*. These outline the what, when, and how of interactions within the discussion thread.

(3) *Incentives for participation*. Enhancing a student's grade for robust, meaningful participation, for example.
(4) *Instructor in facilitation and guidance*. This can be achieved through participation within the discussion thread, feedback outside of the thread, or both.
(5) *The tone of interactions*. Do discussions maintain a causal, social tone that encourages participation from all students in the online classroom?

These five elements guide our exploration of optimally structured discussions.

Structure and Community Building in Discussion Board Activities

The structural elements of a discussion board can be classified regarding their ability to promote or obstruct community building within these activities. In other words, we argue that given any discussion board activity, one can investigate the five elements of structure and determine which elements promote community building (i.e., are optimally structured) and (or) which elements obstruct community building (i.e. are sub-optimally structured). Table 1 describes this relationship.

Table 1 – Structure and Community Building in Discussion Board Activities

Element of Discussion Board Structure	Relation to Community Building	
	Sub-Optimal	***Optimal***
(1) Prompt	Non-thought provoking, closed-ended, and only one correct answer.	Thought-provoking, open-ended, and many correct answers.
(2) Expectations and Guidelines	No expectations and guidelines given. OR Expectations and guidelines are minimal or over-rigid with respect to interaction.	Expectations and guidelines are provided. AND Expectations and guidelines promote interaction and are purposefully ambiguous.
(3) Incentives for Participation	No incentive for actively participating and initiating interactions.	Active participation is encouraged through grade enhancement and/or encouragement.
(4) Instructor Facilitation and Guidance	Instructor guidance is completely absent from discussion. OR Instructor presence is overwhelming and hinders student-to-student interaction.	Instructor guides the discussion by instigating interactions between students, keeping the discussion on topic, and emphasizing main themes.
(5) Tone of Interactions	Discussions are too informal resulting in a less rigorous and stimulating discussion. OR Discussions are too formal resulting in the alienation of some students.	Discussions are casual yet stimulating, resulting in a discussion that is engaging and accessible to all students.

Different elements of structure are clearly interconnected. For example, the expectations and guidelines may enhance or diminish an instructor's ability to incentivize active participation, especially when expectations for interaction are rigid, or over defined. Additionally, if an instructor participates in a discussion using a conversational tone, students may mimic this behavior and, consequently, the discussion would encourage informal, meaningful interaction. These examples show how the different elements of structure can work together to build community within online discussion board activities.

Methods

In order to answer our research questions, we collected data and conducted analysis regarding the structure of discussion board activities, the nature and extent of community within discussion threads, and student perceptions of community (Table 2).

Table 2 – Research Questions and Strategies

Research Question	Research Strategy	
	Data Collected	***Methods of Analysis***
(1) How are discussion boards currently structured in these courses?	Discussion board threads	Coding of discussion board threads
(2) What is the nature and extent of community that is developed within these discussion interactions in these courses?	Discussion board threads	Coding of discussion board threads
(3) Do differences in discussion board structure and the associated characteristics of community correlate with student perceptions of community?	Discussion board threads Research Survey – Community Module (5, 6, 18. 19)	Coding of discussion board threads Descriptive Statistics OLS regression

Settings and Participants

Participants in this study were enrolled in six undergraduate online economics classes [Principles of Microeconomics (PM), Intermediate Microeconomics (IM), and History of Economic Thought (HET)] each taught consecutively for two semesters (Fall 17 and Spring 18) at CSU. PM is an introductory applied economics course, is part of the university core curriculum, and is typically the first economics course that students take at CSU. IM is an upper-division theoretical economics course, is required for undergraduate degree completion in economics, and is typically taken in a student's third year. HET is an upper-division elective course, it satisfies the "Political Economy" requirement for majors, and is typically taken in a student's third or fourth year.

Discussion boards are in all online economics courses to facilitate student-to-student interaction and to build community. All three courses are administered through the LMS Canvas which includes a discussion board tool. Information regarding enrollment sizes and the utilization of discussion boards in each course can be found in Table 3.

Table 3 – Course Enrollments and the Utilization Discussion Board Activities

Course	Semester	Enrollment Numbers (End of Semester Census)	Number of Consenting Students	Number of Discussion Board Activities
PM	Fall 2017	33	21	10
	Spring 2018	37	31	10
IM	Fall 2017	29	23	4 + Introductory Post
	Spring 2018	34	21	4 + Introductory Post
HET	Fall 2017	13	11	15 + Introductory Post
	Spring 2018	15	14	15 + Introductory Post

Data Collection

Discussion threads. For each course, one discussion thread from the first half and one discussion from the second half of the semester was analyzed (i.e., 6 per semester, 12 total). Due to differences in course schedules and to limit the influence of selection bias, a random number generator was used to select discussion threads from each course independently. To maintain the anonymity of the participants during the analysis, each semester every student was given a random identification number that differed between the two threads and names were removed from the content of each individual post, if necessary.

Survey. Students had the opportunity to complete a voluntary research survey, administered through Qualtrics, in two rounds—once early in the semester and once late in the semester.

This survey included a variety of questions and prompts related to demographics, self-regulated learning, and community, among others. For the purposes of this study, the four prompts that made up the community module were most salient (Table 4). Using a Likert scale, students responded to theses prompts by selecting a level of agreement ranging from strongly disagree (0) to strongly agree (10).

Table 4 – Community Module Prompts from Research Survey

P1	I learn best when I feel connected to other students.
P2	I learn best when I feel connected to the instructor.
P3	My learning is improved when I can connect with classmates through discussions or other ways.
P4	I do better in class when I know something personal about my instructor and fellow classmates (such as hobbies or pets).

Of the 161 students enrolled, 57 students completed one of the surveys (either early or late in the semester) and 59 students completed both surveys (early and late) for a total of 175 completed surveys.

Data Analysis

Coding of Discussion threads. Our coding analysis allowed us to measure the nature and extent of community that was developed in discussion board activities across the three courses of interest. The coding rubric that follows measures the presence of community within discussion board activities through its ability to measure both the quantity and quality of interactions taking place within discussion threads, a link that is clearly outlined in the work of Rovai (2002) and Swan (2002). The coding of discussion threads occurred in three stages; preliminary calibration, intermediate calibration, and final coding. The primary purpose of the first and second stages of coding were to calibrate both coders and the coding rubric to strengthen the reliability and validity of the exercise. All three stages of coding were performed by two coders to further ensure the legitimacy of the analysis. The final stage of the coding exercise produced the findings that will be discussed in our findings and discussion section.

The coding rubric. The rubric that was used to code discussion postings is given in Figure 1. Each row of the rubric represents a single post made to a discussion thread. The rubric columns represent important features of the thread that were used to characterize the development of community. To better understand these features, more detail is provided for each

Figure 1 – Coding Rubric

Administrative		Message Poster		Audience			Communication			•••
First Number	*Second Number*	*Student*	*Instructor*	*Instructor*	*Individual Student*	*Collective*	*Original*	*Response*	*Subsequent Response*	
PM DT1	120	x				x	x			
PM DT1	TR		x		x			x		
PM DT1	22R	x			x			x		

•••	Content						•••
	Resources	*Social/Personal*	*Question*	*Answer*	*Internal Reference (to something or someone else)*	*External Reference (to something or someone else)*	
				x			
	x		x	x		x	
			x				

•••	Tone			Other	
	Professional	*Personable /Casual*	*Inappropriate*	*Examples*	*Prompt*
	x				Example of shortage/surplus in a market
	x			Provides link to statistics	Example of shortage/surplus in a market
	x	x		Uses smiley face	Example of shortage/surplus in a market

Administrative and Message Poster. The administrative numbers identify the study participant and discussion thread that the particular post is a part of. Under the feature "Message Poster", each post is coded as being made by a student or the instructor.

Audience. This feature identifies the intended audience of each individual post. It is often the case that all discussion posts can be seen by everyone participating in the thread, and in that sense all posts have a collective audience. However, it could be determined that some posts are made generally to the group and others are made specifically in response to another student or the instructor.

Communication. This feature identifies the nature of a post with respect to its level of communication as either an original post, a response, ore a subsequent response (i.e., a response to a response). This analysis does not focus on identifying who interacts with who, as might be done in a social networking analysis. Instead, this analysis focuses on interaction and documenting the distribution of posts according to their place within the discussion.

Content. This feature was non-mutually exclusive and identifies the content characteristics of each discussion posting. When a post included a reference to an article, a link to a website, a graphic, etc. the post was coded as containing a "Resource". Discussion posts that contained "Social/Personal" content must have contained unsolicited personal information or social content. Instructors often ask for students to answer a discussion prompt using a personal example, however, unsolicited personal content describes a social aspect of community that is different from similar required content. If a post contained a question, either directed to another participant in the discussion or posed generally, the post was coded as containing a "Question". A post was coded as "Answer" if the nature of the post was an answer to a question or, in most cases, an answer to the discussion prompt. Responses and subsequent responses were coded as having "Answer" content if they made a content related contribution to the discussion. A "Resource" can be differentiated from a "Reference" in that a post which contained a resource provided access to the information within the post, whereas a reference provided information without also providing what was needed for another participant to access that information themselves. This distinction mostly applied to posts containing an "External Reference"—information external to the discussion thread itself. Lastly, a post was coded as containing an "Internal Reference" if there was a reference to an earlier post made by another student or the instructor.

Tone. This feature attempts to determine the affective nature of discussion postings. Determining the "Tone" of a discussion post can be complicated. To simplify the analysis, three non-mutually exclusive subcategories were included: professional, personable/casual, and inappropriate. The category "Professional" was used as the default tone. Discussion posts were coded as "Inappropriate" if they were explicitly hurtful or divisive and the existence of these posts would have a negative impact on the development of community in the online classroom. Postings were coded as having a "Personable/Casual" tone if the message poster was informal, friendly, and/or outgoing when posting. For instance, one student wrote "I don't really dig doing dishes…" in a

post and another student included directions for building a bee hive followed by a smiley face in their post. These are both examples of posts that were coded as having a "Personable/Casual" tone.

Other. Lastly, examples were retained for reference in the "Example" section of the rubric and the discussion prompt was also included.

Survey. We examined student responses to the community module prompts from the research survey by computing descriptive statistics to observe differences in student responses across courses. To test if these differences are significant, we employ simple Ordinary Least Squares (OLS) regression. Our regression analysis also measures the extent to which student survey responses changed over the two survey rounds.

Given differences in course content, demographics, and structure, we might expect mean responses to vary significantly across courses. Further, differences in course structure, including differences in the structuring of discussion board activities, may produce variation over time—between the first and second rounds of the survey—as students were able to interact and connect to each other and the instructor throughout the semester. We tested for significant differences in mean responses across courses and over time by estimating versions of the following equation,

$$A_{ir}^{j} = \alpha_1^j + \alpha_2^j IM_i + \alpha_3^j HET_i + \delta_1^j R_{ir} + \delta_2^j IM_i \times R_{ir} + \delta_3^j HET_i \times R_{ir} + e_{ir}^j$$

for each of the four prompts. Here, student i's agreement (A) with prompt j in round r is conditional on the course that the student is enrolled in and the round that the survey was completed. The variables IM and HET are course dummy variables that allow for differences in mean responses across courses, while the variable R is a survey round dummy variable that allows for differences in mean responses over the semester. The interaction between the course and survey round dummy variables ($IM \times R$ and $HET \times R$) allows for temporal differences in mean responses that are specific to each course. Also note that PM is the reference course and Round 1 is the reference survey round. Table 5 shows how to obtain the estimated mean responses to prompt j for different course-round combinations.

Table 5 – Calculating Differences in Means

		Survey Round	
		Round 1	*Round 2*
Course	*Principles of Microeconomics*	α_1^j	$\alpha_1^j + \delta_1^j$
	Intermediate Microeconomics	$\alpha_1^j + \alpha_2^j$	$\alpha_1^j + \alpha_2^j + \delta_1^j + \delta_2^j$
	History of Economic Thought	$\alpha_1^j + \alpha_3^j$	$\alpha_1^j + \alpha_3^j + \delta_1^j + \delta_3^j$

Findings and Discussion

We present our findings in two parts. First, we discuss the findings given by the coding of the discussion threads followed by a presentation of the survey findings. These findings are combined and general conclusions are drawn in the final section of the paper.

Discussion Threads

There were differences in the expectations and guidelines of discussion board activities in each course. PM and IM discussion board expectations and guidelines are very similar in that students were expected to make only one original post and no responses were explicitly required. In particular, in PM interaction with other students was "optional" and in IM students were "encouraged" to respond to other students' posts but were "not required to." In HET, students were expected to make three posts. First, they were asked to make an original post in response to the prompt. Then, after the instructor had responded to every student's original post, students were expected to make a subsequent response to the instructor's response and then also respond to another student.

Alternatively, the discussion prompts were similar in all three courses in that they were open-ended, thought-provoking questions for which there was more than one correct response. This element of discussion board structure (Element 1) was considered to be optimally structured in each of the three courses and contributed to the development of community within these activities.

Table 6 displays the results of the coding analysis by course and the timing of the discussion (i.e., early (1) versus late (2) in the semester). No posts were coded as "Inappropriate", so we exclude this portion of the coding rubric from the table.

Table 6 – The Distribution of Discussion Posts within the Coding Rubric

		Message Poster		**Audience**			**Communication**		
Course/ Discussion	***Number of Posts***	*Student*	*Instructor*	*Instructor*	*Individual Student*	*Collective*	*Original*	*Response*	*Subsequent Response*
PM DT1	57	100.0%	0.0%	0.0%	10.5%	89.5%	89.5%	10.5%	0.0%
PM DT2	48	100.0%	0.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%
IM DT1	52	100.0%	0.0%	0.0%	25.0%	76.9%	76.9%	17.3%	7.7%
IM DT2	47	100.0%	0.0%	0.0%	18.8%	81.3%	79.2%	20.8%	0.0%
HET DT1*	65	100.0%	0.0%	30.3%	34.8%	36.4%	34.8%	30.3%	34.8%
HET DT2*	55	100.0%	0.0%	34.5%	30.9%	38.2%	36.4%	23.6%	40.0%
HET DT1	88	72.5%	27.5%	22.0%	52.7%	26.4%	25.3%	48.4%	26.4%
HET DT2	75	71.4%	28.6%	24.7%	50.6%	27.3%	26.0%	44.2%	29.9%

		Content						**Tone**	
Course/ Discussion	***Number of Posts***	*Resources*	*Social/ Personal*	*Question*	*Answer*	*Internal Reference*	*External Reference*	*Personable/ Casual*	*Professional*
PM DT1	57	3.5%	26.3%	0.0%	98.2%	3.5%	1.8%	17.5%	98.2%
PM DT2	48	4.2%	12.5%	0.0%	100.0%	0.0%	0.0%	10.4%	100.0%
IM DT1	52	3.8%	25.0%	3.8%	96.2%	3.8%	0.0%	23.1%	100.0%
IM DT2	47	4.2%	8.3%	4.2%	97.9%	6.3%	4.2%	10.4%	100.0%
HET DT1*	65	3.0%	3.0%	6.1%	95.5%	0.0%	0.0%	4.5%	100.0%
HET DT2*	55	1.8%	1.8%	9.1%	94.5%	5.5%	3.6%	3.6%	100.0%
HET DT1	88	5.5%	2.2%	30.8%	81.3%	2.2%	1.1%	4.4%	100.0%
HET DT2	75	1.3%	1.3%	35.1%	72.7%	3.9%	2.6%	2.6%	100.0%

* Instructor participation not included.

The first take away from Table 6 is the absence of instructor presence within discussions in PM and IM as shown in the "Message Poster" columns. In these courses, instructor engagement did not occur within the discussion thread except for creating the initial discussion prompt. On the other hand, the instructor of HET heavily participated in discussion boards, responding to the initial post of every participating student. This finding led us to separate the HET data into two sets. The first set of HET rows, denoted with an asterisk, excludes any response made by the instructor and the second set of HET rows includes all posts and responses made in the thread. This separation allows us to compare the content of student posts in HET to the content of student posts in PM and IM. The role of the instructor in motivating and guiding discussion board interaction is a key component of discussion board structure (Element 4) that contributes to a high level of community. However, we conclude that PM and IM are sub-optimally structured in this respect due to a lack of instructor presence, while HET is also considered to be sub-optimally structured due substantial instructor presence that seemed to crowd out meaningful student-to-student interaction.

The second take away from Table 6 is that students in PM and IM engaged in meaningful interaction early in the course but this diminished as the semester progressed, suggesting a decrease in the level of community. This can be seen in the amount of posts that are coded as having an "Individual Student" audience, which falls from 10.5 to 0 percent in PM and 25 to 18.8 percent in IM over the course of a semester. Additionally, the percentage of posts having "Social/Personal" content fell by more than half and the percentage of posts that were coded as having a "Personable/Casual" tone also decreased by half. When students casually respond to another student who is sharing social and/or personal content, this corresponds to a higher level of community and it is troubling to find this diminished over the semester. We see this finding as having two structural sources. First, discussion board expectations and guidelines (Element 2) in these courses (PM and IM) were structured sub-optimally since they did not require student-to-student interaction. Second, this decrease suggests that students may not

have been rewarded for active participation early in the semester (Element 3). Therefore, this finding suggests that these discussion activities were structured sub-optimally. This contrasts to HET where meaningful interaction was maintained throughout the semester.

Third, discussion posts by students in HET were much more diverse than discussion posts in PM and IM. In particular, the "Audience" columns of Table 6 show that student discussion postings in HET are roughly evenly distributed between "Instructor" (30-35 percent), "Individual Student" (30-35 percent), and "Collective" (36-39 percent). When instructor posts are included, about half of the discussion posts are directed towards individual students, a quarter of posts are general responses to the prompt, and the remaining posts are directed at the instructor. However, once the discussion board expectations and guidelines are taken into consideration, the systematic distribution of audience makes student participation seem more perfunctory than diverse. This notion of perfunctory participation is further explored in Table 7.

Table 7 documents the extent to which students meet the expectations and guidelines of discussion board activities. The only course where participating students didn't fully meet the expectations was in HET, where students were expected to make at least three posts in each discussion thread. In PM and IM, all participating students met the baseline expectation by merely making a single post—this is why the number of participating students and the number of expected posts is equal. Additionally, just because the number of realized posts exceeded the number of expected posts, does not necessarily mean that students are making more posts in one course compared to another. In fact, the student who did the least in HET, making one out of the three expected posts, made just as many posts as the student who fully met expectations in PM and IM.

Table 7 – Meeting Expectations in Discussion Boards

Discussion Thread	*Students*	*Expected Posts*	*Realized Posts*	*Realized/ Expected Ratio*	*Non-Expected Posts*	*Students Contributing to Non-Expected Posts*	*Students Not Meeting Minimum Expectations*
PM – DT1 – FALL	21	21	24	1.14	3	2	0
PM – DT2 – FALL	19	19	19	1.00	0	0	0
PM – DT1 – SPRING	30	30	33	1.10	3	3	0
PM – DT2 – SPRING	29	29	29	1.00	0	0	0
IM – DT1 – FALL	20	20	27	1.35	7	6	0
IM – DT2 – FALL	21	21	24	1.14	3	2	0
IM – DT1 – SPRING	19	19	25	1.32	6	4	0
IM – DT2 – SPRING	17	17	23	1.35	6	4	0
HET – DT1 – FALL	9	27	25	0.93	0	0	2
HET – DT2 – FALL	9	27	22	0.81	0	0	4
HET – DT1 – SPRING	14	42	40	0.95	3	3	3
HET – DT2 – SPRING	11	33	33	1.00	1	1	1
All	**219**	**305**	**324**	**1.06**	**32**	**25**	**10**

The fourth column of Table 7 displays what we call the realized/expected ratio, which is the number of realized posts divided by the number of expected posts and a ratio close to one suggests students did exactly what was required by the expectations and guidelines. IM exhibits the highest realized/expected ratios out of the three courses with an average of 1.29 across the four discussion threads we analyzed. After looking at the data more closely, however, we found these results to be a bit misleading. For instance, of the 22 "non-expected" posts found in the IM discussion threads, 14 were unacknowledged student responses (i.e., students attempting to interact with other students without success). Put another way, only 8 of the 22 "non-expected" discussion posts in IM were contributing to ongoing student interaction. HET displays the lowest realized/expected ratios with an average of 0.92. These realized/expected ratios that are less than one can be attributed to students who failed to make one, or two, of the three expected posts. The second to last column of the table shows that there were only a handful of participating students (11 percent in total) that contributed to non-required discussion participation. Additionally, only 4.6 percent of participating students (all in HET) failed to meet the minimum expectations of the discussion board activities. The last row of Table 7 shows that, on average, students are extremely good at meeting expectations. The total number of expected posts was 305 and the total number of realized posts was 324 (including the 32 non-expected posts) for a realized expected ratio of 1.06. So, while discussion board

expectations and guidelines in HET were structured much differently than those in PM and IM, Table 7 suggests that each set of expectations and guidelines elicited perfunctory student participation in discussions. Therefore, we conclude that expectations and guidelines (Element 3) were sub-optimally structured in each course since they seemed to limit the extent of meaningful interaction and, therefore, community development.

Lastly, we characterize student-to-student interactions in HET discussion boards as significantly contributing to the cognitive presence of community, while the few student-to-student interactions that occurred in PM and IM can be characterized as contributing to the social presence of community. This is evidenced by the number of discussion postings in HET that contained "Social/Personal" content and had a "Personable/Casual" tone, relative to discussion postings in PM and IM (Table 6). We found this phenomenon to be linked to differences in instructor presence and guidance (Element 4), which then had an impact on the tone of interactions (Element 5). Instructor presence and guidance in HET was overwhelming and, consequently, this limited the amount of student-to-student interaction that occurred in discussions. Additionally, the overwhelming presence of the instructor caused interactions to be less social and more formal in content and tone. On the other hand, the absence of instructor presence in PM and IM led to a small number, or absence, of interaction—which at times were off topic. Therefore, instructor facilitation and guidance (Element 4) and the tone of interactions (Element 5) were sub-optimally structured in each course leading to lower levels of community development.

Survey

Table 8 displays the descriptive statistics of student responses to the prompts given as part of the community module of the research survey and Table 9 displays the OLS estimation results. There are five findings we will emphasize.

First, students don't realize the importance of connecting with other students when it comes to improving their learning outcomes because they fail to internalize the important relationship between community and learning. For instance, students are indifferent to the prompt "I learn best when I feel connected to other students" (P1)—the mean response across all courses was 5.24 (Table 8). Additionally, the estimation results in the first column of Table 9 suggest that students in History of Economic Thought (HET) respond more positively to this prompt—6.34 compared to 5.14—though this response is still closer to indifference than strong agreement. Similarly, students neither agree nor disagree with the prompt "My learning is improved when I can connect with classmates through discussions or other ways" (P3)—the mean response being roughly 5 (Table 8)—and column three of Table 9 shows that there are no significant differences in means across courses.

Table 8 – Community Survey Descriptive Statistics (Both semesters included)

Course	Round		P1	P2	P3	P4
All	All	Mean	5.24	7.57	4.98	4.37
		SD	(2.72)	(2.01)	(2.74)	(3.03)
		N	174	175	174	174

Table 9 – Testing for Significant Differences in Means, by Course and Round

	P1	P2	P3	P4
IM	-0.29	0.24	-0.46	-0.29
	(0.61)	(0.45)	(0.65)	(0.69)
HET	1.20*	0.68	0.79	2.06***
	(0.71)	(0.48)	(0.70)	(0.76)
Round	0.06	-0.27	0.05	-0.20
	(0.57)	(0.45)	(0.52)	(0.62)
IM x Round	-0.12	-0.50	-0.20	0.66
	(0.72)	(0.59)	(0.70)	(0.82)
HET x Round	-0.32	0.44	-0.69	-1.67
	(0.95)	(0.66)	(0.95)	(1.09)
Constant	5.14***	7.5***	5.07***	4.16***
	(0.39)	(0.31)	(0.42)	(0.45)
N	175	175	174	174
Individuals	116	116	115	115

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$. *N* is the number of survey responses answered and *Individuals* is the number of distinct students who generated these survey responses—the latter is important for the calculation of "clustered" standard errors in a panel data setting.

Second, students do realize the importance of creating a connection with their instructor. The average student in each of the three courses we observed agreed with the statement "I learn best when I feel connected to the instructor" (P2), which can be seen in column P2 of Tables 8 and 9. Third, the survey results indicate that students in HET agree to a greater extent with prompts concerning community in the online classroom which means that these students, ever so slightly, were more likely to recognize the overall importance of community. In all columns of Table 9, the estimated coefficient associated with the course variable HET is positive and this positive difference is statistically significant for two of the four prompts (P1 and P4). Although this finding may be a result of a number of factors including student demographics, it might also be a function of the structure of discussion board interactions in HET, where there were clear expectations of engagement with peers.

Fourth, the round of the survey seemed to have no impact on student responses to prompts concerning community in the online classroom. Table 9 shows that the differences in mean responses across rounds are statistically indistinguishable from chance. In other words, student perceptions of community didn't change over the course of the semester. Lastly, students were given the opportunity to write comments at the end of each survey. We have provided three comments as examples to further explore the student's perception of community and these comments support earlier findings that students do not recognize the importance of community to improve learning and how discussion board activities can promote community.

1. "Yeah I don't find any real point to having discussion posts…" (PM)

2. "[T]alking to classmates when it is necessary or having a way to if needed helps but being forced to through discussion posts does not. When forced no one really cares what responses are or what they are responding [to] they just do it for points." (PM)

3. "It would be nice to have small, randomized groups to get to know better so that we feel like we have friends in the class." (IM)

The first comment is unhelpfully telling. Our coding analysis, for PM and IM specifically, suggests that there is little, if any, student-to-student interaction taking place within discussion boards. Moreover, the survey results indicate that students, on average, view discussion board activities as merely another tool to test their knowledge, not a way to connect with other students. Given that students seem to hold this belief on average, it is easy to see why this student doesn't "find any real point in having discussion posts."

The second student eludes to the point we made earlier, which was the prevalence of unacknowledged response within the discussion threads we studied. This student seems frustrated by the fact that "no one really cares what responses are or what they are responding [to] they just do it for points." It seems that this student experienced what we found in our analysis—students trying to initiate interaction but failing (Table 7)—and the student suggests that this is due to students being "forced" to participate. We have already discussed the importance of requiring students to participate in discussions, however, forcing students to participate while making interaction with their peers "optional" could be classified as sub-optimal structuring.

The last student suggests that discussions should be organized in "small, randomized groups" and they make an explicit connection between how discussion boards are structured and making friends in the class. Our analysis of the survey responses suggested that, on average, students don't see discussions as a place where they can connect with other students and improve their learning. Interestingly, this student seems to think that discussion boards, when optimally structured, do have the ability to facilitate connections between students and build community. We think so too.

Conclusions and Implications

Our research contributes to a literature that outlines strategies of effective practice when using discussion board activities as a tool for community building in the online classroom. We combine the previously existing literature and broadly define the important elements of discussion board structure to include: (1) the prompt, (2) expectations and guidelines, (3) incentives for participation, (4) instructor facilitation and guidance, and (5) the tone of interactions. We then explored the relationship between discussion board structure and community development in three undergraduate, online economics courses through an analysis of discussion threads and an investigation of survey responses related to student perceptions of community. To reiterate, our research questions were; (1) How are discussion board activities currently structured in these courses? (2) What is the nature and extent of community that is developed within discussion board activities in these courses? And (3) do differences in discussion board structure and the associated characteristics of community correlate with student perceptions of community?

Our findings suggest that community development was lowest in two online courses (PM and IM) due to expectations and guidelines that failed to emphasize interaction, a lack of incentives for active participation, and the complete absence of instructor guidance within discussions. These discussion board elements were sub-optimally structured leading to low levels of community building. Community was more developed in the one online course (HET) due to the presence of more interaction generally. However, we conclude that expectations and guidelines were over-rigid in defining when and how interactions should take place. Additionally, instructor facilitation and guidance was overwhelming, limiting the amount of social student-to-student interactions and, as a result, the tone of interactions in this course were very formal. Again, these discussion board elements were sub-optimally structured leading to lower levels of community development. Overall, we found that the various elements of discussion board structure were important in determining the presence and development of community within discussion threads.

Our investigation of student perceptions of community in the online classroom showed that, on average, students don't realize the importance of connecting with other students when it comes to improving their learning outcomes. And not only do students fail to realize the benefits of community, but students also fail to realize that discussions are a place where the positive effects of community building—deep learning and learner satisfaction—can be realized. Student responses to the survey also indicate that students in HET, the course with highest amount of interaction within discussion threads, seemed more likely to agree with survey prompts about the importance of community, on average, though we are not inclined to make any causal inference.

We see our research as generating three practical implications. First, the structure of discussion board activities is important for the development of community both within discussion threads and in the online classroom generally. Students appreciate clearly defined expectations when it comes to assignments, however, discussion board expectations and guidelines that fail to emphasize interaction or are over-rigid seemed to limit the extent of meaningful interaction and community development in online discussion boards. Such expectations and guidelines can also limit the extent to which instructors can incentivize active participation, further limiting the development of community in online discussions. To improve community development within discussion board activities, expectations and guidelines should be less well-defined and greater emphasis should be placed on student-to-student interaction with instructor guidance. This implication does not rule out the use of discussion board rubrics—which can improve grading consistency and reduce student anxieties (McKinney, 2018)—but instead it suggests that such rubrics should contain a certain level of ambiguity and place extra emphasis on informal, meaningful interaction, to discourage the perfunctory participation that can limit community

development. Instructors should also consider their participation within discussion threads. Providing guidance, motivation, and example posts within discussion threads can encourage advanced community development at every level—i.e. instructor presence, cognitive presence, social presence. However, too much participation on the part of the instructor can limit meaningful student-to-student interactions which could discourage community building between students.

The second implication is the need for instructors to create an online community expectation throughout the course. We touched on this earlier when we suggested that student-to-student interaction should be emphasized in discussion board expectations and guidelines. However, the development of community should be emphasized throughout the course. Creating a community of practice should be identified as an objective of the course and how to establish this community should be articulated. Students often appreciate understanding pedagogical decisions made by the instructor. Having the foundational knowledge of why community development is important in the online classroom will also encourage students to capitalize on community building opportunities when presented with them.

This leads us to our last implication, which is that instructors should inform students of the objective of community building through discussion and collaborative efforts. In this study, students valued community when they experienced it, but they didn't realize how it was built or what it entailed. Given that an online community expectation has been created, instructors can inform students that discussion boards can be used as a tool to collaborate, build community, and improve learning. Primed with the goal of community development in addition to assessment, students may be more likely to interact and connect with each other in meaningful ways as opposed to the standard perfunctory participation that is often observed in discussion board activities. In fact, multiple studies of discussion board activities have found that "understanding the purpose of the discussion" promotes higher levels of interactions. (Zhou, 2015)

In the end, community building in the online classroom is about creating positive outcomes for students. Building community in the online classroom accommodates the formation of collective knowledge, encourages student learning and persistence, and prepares students for social, civic and economic life. Our findings and implications specifically stress the importance of discussion board structure as a way to support the development of community within discussion board activities. Ultimately, however, our study contributes to a larger literature that is broadly focused on providing online instructors with information and tools to improve student outcomes.

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INTELLIGENT AND DEEP LEARNING APPROCH OT MEASURE E-LEARNING CONTENT IN ONLINE DISTANCE EDUCATION

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ABSTRACT
The development of IT and ITeS today the world moves to access resource anywhere and anyplace with the power of Internet. The usage of online resource and self learning is to enable the learners' community to access intelligent based system. The support of internet and mobile learning platforms the technological teaching aids like digital learning, videos, playback lectures, animations, asynchronous discussion and social media are playing vital role in self learning. This paper provides the intelligent and deep learning processes are involved to analysis the usage of Open Source Learning, Mobile learning and Distance Learning. This research involves the use of face-to-face online lectures and online discussion boards problems. Accessing video or learning contents by using smart phones or any other agents, this analysis report provide clear idea about learning perceptive and usage perceptive. Each lecture task includes knowledge, skill, competency and expertise. This paper describes the model of intelligent and deep learns process is involved in Self learning systems.
Keywords: Self Learning, Mobile Learning, Online Resources, Deep Learning, Intelligent systems, Distance Learning

INTRODUCTION

The Open and Online Education system was introduced and developed University of Colorado in 1980. Now the involvement of technological growth and improvement of mobile computing more number of self learning and E-learning system are developed. Nowadays in India AICTE and UGC are designed new model curriculums with the importance of self learning systems. IITs are developed NPTEL, Spoken Tutorials and Online Certification courses for teachers and students. eDx and Solo learners are played important in distance based learning. The importance of online resource accessing and strength of interactive learning approaches are taking shift from formal, classroom teaching to informal and interactive distance based learning.

The growth and advancement of technology in wireless and mobile communication like 4G, Wi-Fi, ZigBee, Smart Phones and Android comes to the picture. Open cast recorded lectures are developed to the learners' community but the problem is external noise, conversion problem and platform dependent failures. Free and Open source software came to picture and we can access from any platforms, redistribution, without any restrictions access and free of cost. The Linux based OS are used in online resource access and learning systems. The intelligent systems are developed by the use of open source platforms.

The social media and web services are important for accessing database, perception, comments, attitude and expression. There is no separate platform or tool for monitoring perception and actuating systems. Because as per the survey of self learning and online learning portals most of users are ideally sitting and playing videos. So we have intelligent and deep learn mechanism to monitor the process. The open rank systems are developed for finding usages, top stories, trend analysis, etc. The main problem faced by learners they are interested to use open source software but the commercial software and UI based platforms are user friendly. So we are depending with that the basic level of understanding and usage also need to monitor. This form of interactive access is more benefits for users, learners and educators. They can easily use, access, comments and monitor the whole process. This paper describes following sections, Section-II enables various related works about distance

and e-learning systems and Section-III describes models and intelligent process, Section-IV gives analysis and conclusion results.

RELATED WORKS

Anadolu University began offers online education with distance based learning without using open source platforms and invested huge money for accessing and broadcasting. The power social media and access are important in collaborative enabling and emerged technological growth. Recording and broadcasting process are determined by each data acquiring systems and context based search involved to test positive and negative attitude.

The open source software usage can access easily and no need have specialized software for accessing or monitoring process. In International Conference on Mobile Learning at 2012, the recorded video lectures are telecasted and varieties of open access tools are delivered. The Opencast Matterhorn are developed with right learning, context aware, access from anywhere, mobile learning, universal access, interactive access and discoverable.

Distance based learning is increasingly major part in education fields with the help of computes, internet, graphics and multimedia components. E-learning is also form distance learning and it is promoted flexible deliver and support of assessment.

The development of technology and growing fast of generation's number of electronic resource accessing tools are developed and various portals are developed. In this context use of internet and online resources are increased tremendously. The reports said, the content is very important for accessing all interactive videos and each information are analyzed and recorded for further improvement.

Xjournal is the online portal combine with lesson plans, video and activities. Further development it is analyzed and developed online assessment portal and testing hypothesis also. Wang et al, the online games are designed and it is increase learners attitude and concentration power. Online games and mobile apps based interactive games designed, nowadays mobile apps developed are playing important role. Usage of mobile phones and internet is increased in day-to-day as well as the technology development we need to move onto self and distance based learning system.

LEARNING SYSTEM

The following are the lecture capturing and interactive recording procedures. It is used to integrate all the existing models and provide intelligent based monitor process.

Open access based Intelligent and Deep Learn Process

1. Distribution Process: All the information and video content to be collected. Each acquired information to be modulated or compressed as Unicode format for access specification. There is common platforms are designed and user can access any platforms like iOS, Cloud, Microsoft,etc
2. Integration and Recording systems is needed in each and every process
3. Scheduling, Editing, Uploading, Metadata, processing are to be automated and monitored
4. User Interface and Interactive access to be monitored because of screen resolution and size.
5. Content based search and slide preview also needed in each stage

The following (figure 1) shows that Intelligent based Open learning – we can access the information or content from anywhere and place with the usage of internet. Now the power cloud enables we can access sitting one place and Wi-Fi enabled service to provide resource sharing also.

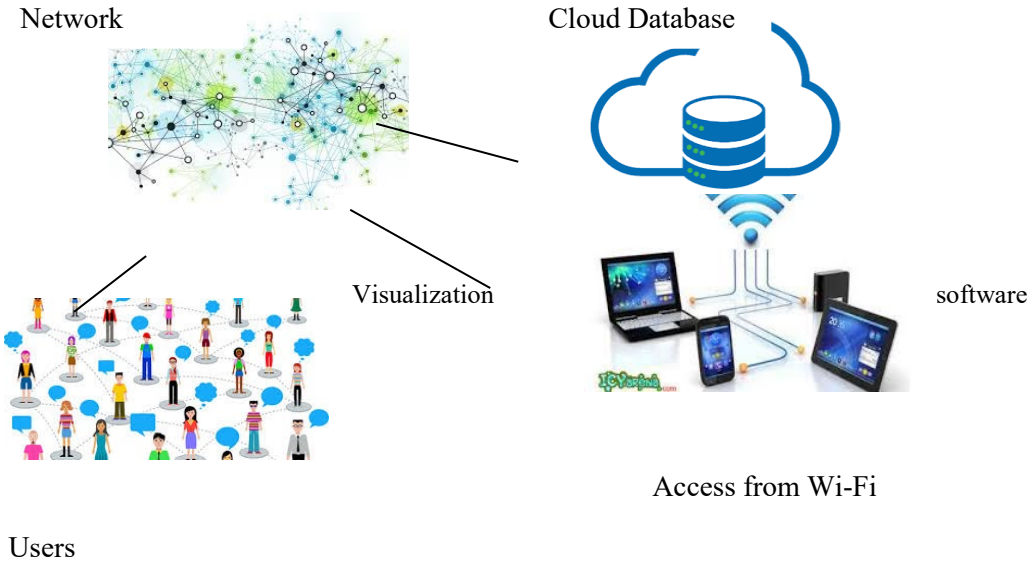


Figure 1: Overview accessing information

It helps and gives conceptual understanding of each topic. Geometrics diagrams, computer graphics layout, complex systems, logical reasoning is provided interactive and more logistics bases. Lot of open source mathematical tools are developed for learning and editing purpose like Graph, Sage, Geogebra, etc.

The learners are very much interested in face-to-face to lecture to avoid language problems, lack of communications and difficult to handle self learning assessments. The Open source learning have following points

1. Administrative or individual login access to access the site
2. Individual profile, administrators roles, data access policies are to be recorded
3. Each stage operations are clearly defined
4. Well defined schema and UI are more interactive
5. Include security precautions for avoiding confusions

The following (figure 2) describes architectural diagram for content and interactive learning process. Each stage has individual process and deep learning perceptive.

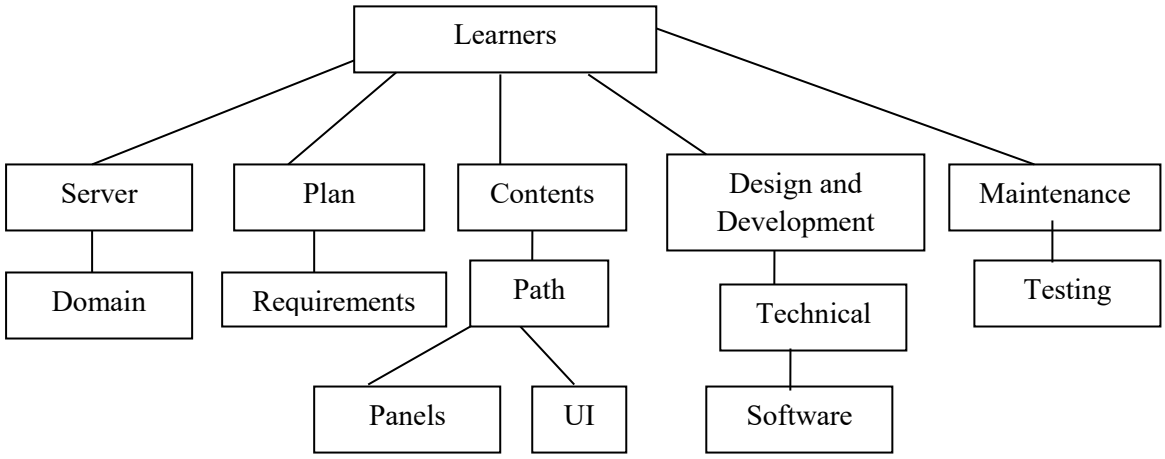


Figure 2: Architecture Model Open Access System

The following (figure 3) shows that interactive learning process, which is used to involve motion, animation, sound and multimedia operations. In this section it involves the interactive question answering system, capturing and recording.

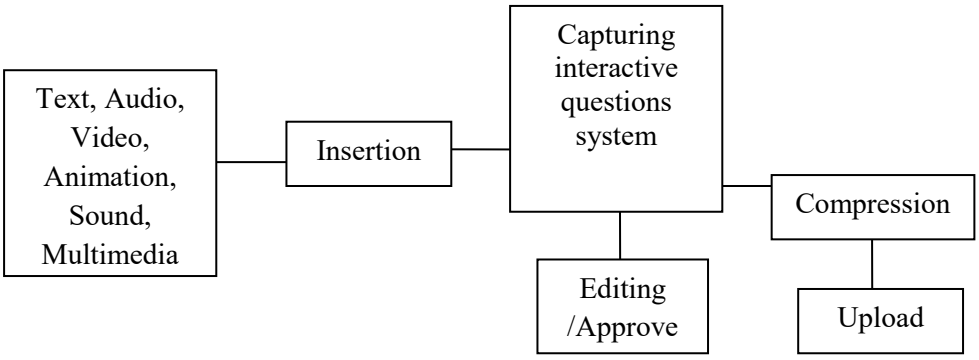
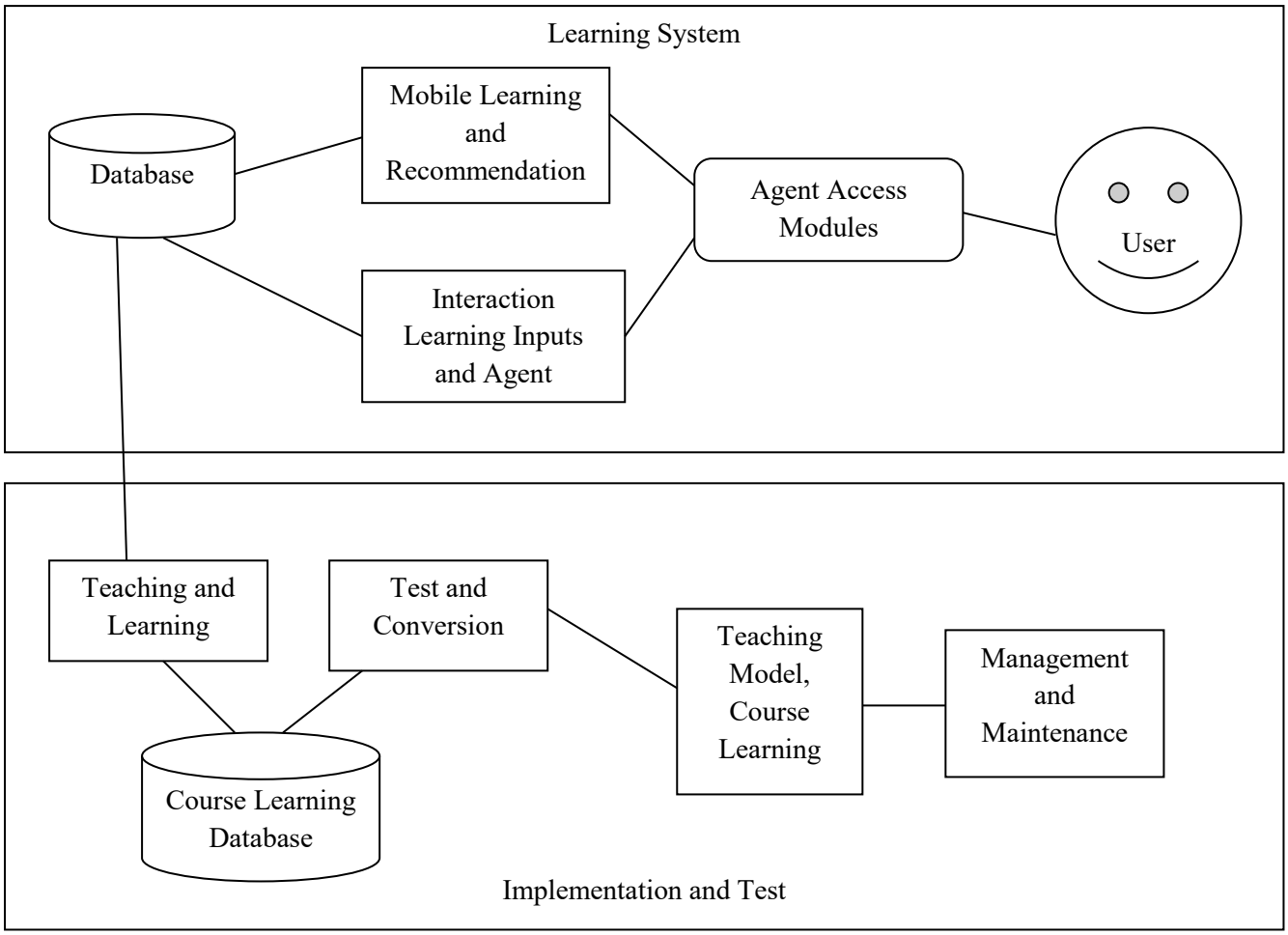


Figure 3: Block Diagram for Interactive Learning

COMPUTATIONAL INTELLIGENCE

Computation process is used to solve mathematical problem and produce analysis report. Here we describe three dimensional object models in value addition and computational capabilities. Example AICTE developed Swayam mobile app and portal for online learning process and it gives analysis report which includes all the metadata. But in this case the prediction and calculation of huge inputs tracks we couldn't record all the details. We developed following (figure 4) for learning architecture with intelligence and deep learning systems. Each stage we analysis report using deep learn process and produce multi agent model interactive learning systems. User can process the request and access the resource from any deployment stages. Database provides complete information about learning and recommendation process.



Step 1: Analysis the use of open learning and distance based online process
Step 2: Identifies users/learners details and perceptive
Step 1: Collect the database and apply conversion, Unicode and access specification
Step 2: Each components and metadata to organized and give assessment, exam organization, evaluation process
Step 3: Includes administration capabilities, rules and regulation of learning process
Step 4: Select the quality factors such as distance learning, prejudgments, open education process
Step 5: Apply copyrights, legal notification and ethics
Step 6: Mention open system education, perceiving and context level processing

Figure 4: Implementation of Learning Systems

This research aims to help interactive learning using various screen and conventional/traditional tools with intelligent and deep learning behaviors. Method of learning with various agents like mobile, webapps, desktop computers, tablet, etc are supported the learning process and competent with technical skills, personal ability and expertise. The following are the interactive learning apps and assessment method sample with learners' metadata.

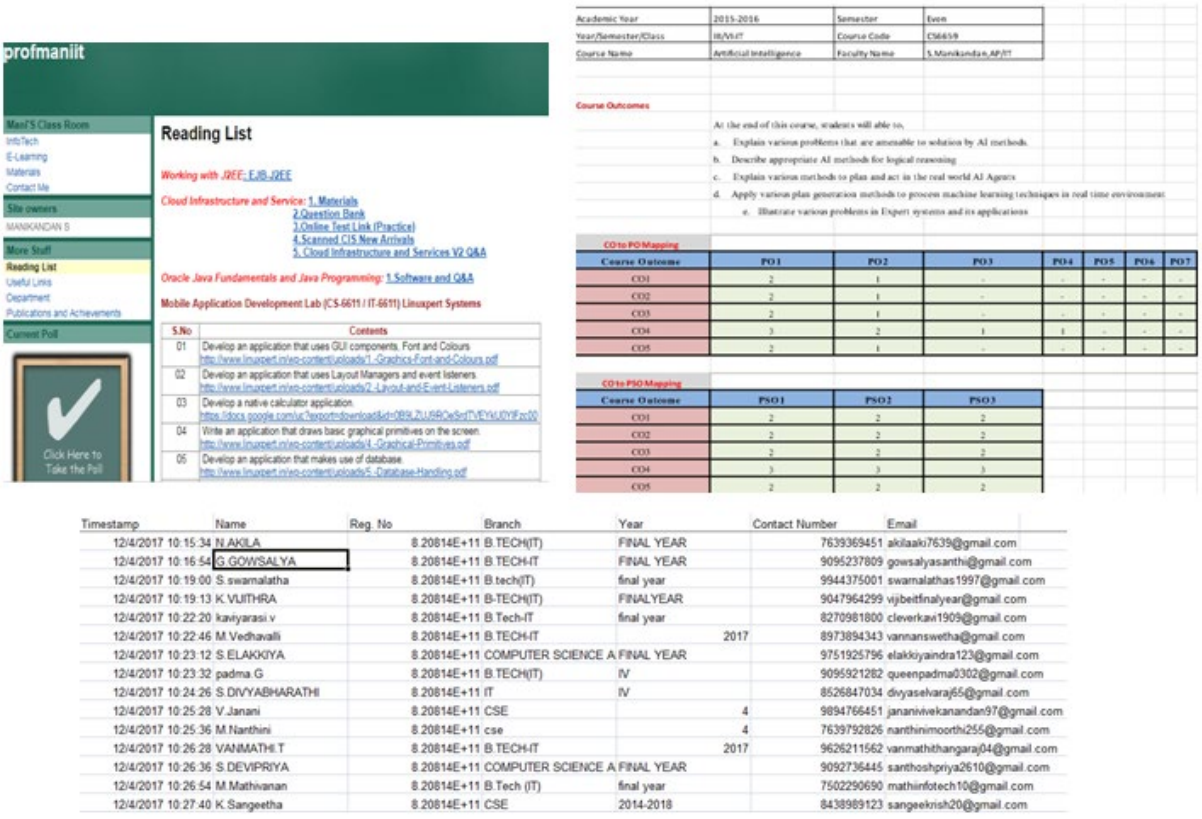


Figure 5: Learning Portal, Assessment and Metadata Details – Interactive Session with Intelligent and Deep Learning Results

This method is very important for following reasons; we applied intelligent data analysis system for learning and perception process. Each stage agent based learning models are used to verify question answering, impact of usage, advancement and technological shifts. The real time interactive learning provides improve the effectiveness and performance.

CONCLUSION

The interactive learning systems involve enhancing learning, intelligent process, deep learning activities in agent based learning process. This application runs from anywhere and anyplace and collects learners' details. We collect collaborative results and give exact survey of good and weak probable results. According to this research we developed statistical analysis and participation of social media contents, environments and internet users. Each approaches related to content based search and study of learning based process. This paper provides complete details of working, studying and analyzing each content. The various applications such as mobile apps, web apps and learning process are designed and interactive learning videos are designed with intelligent behavior and deep learn metadata results. Learners and Administrator monitor and get analyzed report for further decision. In future decision based and natural language processor will be used for development.

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ROLE OF INSTRUMENTAL AND INTEGRATED MOTIVATION IN LEARNING OF ENGLISH-THE SECOND LANGUAGE, AMONG THE ENGINEERING STUDENTS IN THE SOUTHERN TAMILNADU- A CASE STUDY

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ABSTRACT
Motivation plays an incredible role in learning and using a language with accuracy and proficiency. The English teachers strive hard to make the students get motivated and involved in the utilisation of the language beyond the teaching-learning scenario. Even after strenuous efforts put on by the teachers, the students many a time fail to interconnect in English leading to a little dejection on the part of the teachers as well as students. The failure to communicate in English lurks their next step towards progressive usage of the language. The language teachers are much worried about the second phase of motivating the students and rejuvenating their lost interest towards English. The teachers will miscarry their task if they fail to drag the students in the right track with some kind of incentives in the form of motivations like attainment of hidden goals and aspirations of the students. If these concealed motivations are linked with the objectives of learning English, the students are sure to get rid of their inhibition towards English and start learning English with inquisitiveness. The successful language teachers should know to connect the passion and the need. To make the students analyse or do introspection of their motivation pertaining to their learning English as well as to establish the true motivation factors for the teachers' understanding, the I year B.E/B.Tech students of Mepco Schlenk Engineering College, Sivakasi were asked to respond to a questionnaire consisting of 20 questions representing motivational factors propelling them to learn English. The "Statistical Package for Social Sciences" (SPSS) version 22 was used to analyse the feedback acquired. The analysis of the response given by 250 students have shown that the students learn English because it is a part of their education and their placement as well as career. The students high level of instrumental and integrated motivation.
Keywords: Motivation, instrumental motivation, and integrated motivation,

Introduction:
Motivation plays an incredible role in learning and using a language with accuracy and proficiency. The English teachers strive hard to make the students get motivated and involved in the utilisation of the language during and beyond the teaching-learning scenario. Even after strenuous efforts put on by the teachers, the students many a time fail to interconnect in English leading to a little dejection on the part of the teachers as well as students. The failure to communicate in English lurks their next step towards progressive usage of the language. The language teacher is much worried about the second phase of motivating the students and rejuvenating their lost interest towards English. The teachers always struggle to lay the students in the right track with some kind of motivation to love the language and recall incentives like attainment of hidden goals and aspirations of the students. Motivation to learn English has to be a combination of desire to acquire English with the desirable outcome towards learning the language. That is, motivation to absorb L2 refers to the degree to which the individual works or tries to learn the language and the contentment experienced in this task. Effort to learn alone does not indicate motivation. The motivated persons must be able to communicate in English to attain their goal through the practical application of English in life. Motivation is a driving force that propels English learners to utilize the language for their achievements. Only a proper motivation can lead students, specifically the budding Engineers, towards the involved English learning.

Gardner and Lambert are the pioneers in research on motivation. They affirm two major kinds of motivation that could be correlated to L2 learning: integrative and instrumental. Integrative motivation, reflects the learner's willingness or desire to be like a representative member of the other language community (Gardner & Lambert, 1972) with the desire to learn English. Instrumental motivation, on the other hand, is characterized by a desire to gain social recognition or economic advantages through knowing an L2 (Gardner & Lambert, 1972). It is also characterized by an interest in learning L2 for pragmatic and utilitarian benefits such as a high salary, power, or career (Johnson, 2001).

A) Statement of the Problem
Many features contribute to English language learning and delineating these factors is a complex task. One such factor is the right motivation. Globalization has now become a motivation for many individuals all over the

world to learn the English language. In India, the status of being able to communicate in English language has been acknowledged widely to the point that it is given a position as the second language. The world has become a global village (Barnett and Lee, 2003), thus there is a basic need for the people around the world to learn English to meet their cultural, political and economic needs. In other words, the English language currently enjoys the standing of an international language (Crystal, 2003). However, in the evolving situations, where English is predominant everywhere, the role of motivation in the English learning process deserves special attention. This is because learners' " motivation has been widely accepted as a key factor which influences the rate and success of second/foreign language learning (McDonough, 1983; Ellis, 1994). English has become an intercontinental language of Science and Technology and the medium of learning in Anna University. So, students admitted under Anna University and its affiliated colleges in Tamilnadu are bound to use English for their academic and non-academic purpose. It is very obvious that students of Mepco Schlenk Engineering College, Sivakasi have to pleat their strength to use English fluently.

The current paper focuses on the factors that motivates the conscious learning of English by the Mepco Schlenk Engineering College students who are from various parts of southern Tamilnadu. The present paper does not aim to analyse the academic performance or the progress of the students, but ponders on the specific types of motivations that drives a student to use English. The authors are studying the level of the integrative motivation and the instrumental motivation in learning of English and the type of motivation which is predominant among the students. The paper analysis the data related to various motivation factors that lead 250 First year engineering students at Mepco Schlenk Engineering College, Sivakasi to show inclination towards English. The students are from various disciplines of engineering like Civil Engineering, Computer Science Engineering, Bio Technology and Mechanical Engineering. The students responded to the questions enthusiastically and willingly.

B. ***Objectives****:*

- An analysis on the level of intrinsic motivation
- Study on the impact of the extrinsic motivation.
- Comparative study of the influence of the intrinsic and extrinsic motivation

C. ***Research Design:***

- Literature survey
- Data collection through questionnaires and feedbacks on the motivation factors leading to English.
- Data Analysis of the student' motivating factors towards English.
- Conclusion
- Suggestions for future.

II. Literature Survey:

Motivation determines the extent of active, personal involvement in L2 learning; research shows that motivation directly influences how often students use L2 learning strategies, how much students interact with native speakers and how long they persevere and maintain L2 skills after language study is over (Oxford & Shearin, 1994, as cited in Huang 2007). Dornyei argues that "So much is going on in a classroom at the same time that no single motivational principle can possibly capture this complexity ... Therefore, in order to understand why students behave as they do, we need a detailed and most likely eclectic construct that represents multiple perspectives." (Dornyei, 2001a).

The motivational energy that thrusts the learners towards L2 is well defined and established to a good extent and yet researches are still in progress. Gardner (1985; 50) informed the following (as cited by Majed**. M.H. Drbseh**): The type of motivation answers the question of why the individual is studying the language. It refers to the goal set by the learner in knowing English. Many reasons could be listed: to speak with members of that language community, to get a job, to progress in one's education, to be able to travel, to please parents and others, to satisfy a language requirement, to gain social power, etc. As individuals, there are as many reasons for studying a second language. However, the core of discourses on various approaches to motivation falls into the broader category of intrinsic and extrinsic motivation. The intrinsic motivation is defined as ―the extent to which the individual works or strives to learn the language because of a desire to do so and the satisfaction experienced in this activity‖ [R. C. Gardner, as cited by Chiew Fen Ng and Poh Kiat Ng]. They find intrinsically motivating tasks interesting and challenging; the reward is the enjoyment of the activity itself or a feeling of competence (self-efficacy) in doing the task [4 A. Bandura, as cited by Chiew Fen Ng and Poh Kiat Ng]. Extrinsic motivation is a trigger that flows from outside the individual. Learners are extrinsically motivated when learning is done for the sake of rewards such as grades or praise that are not inherently associated with the learning itself, that is, when learning or performing well becomes necessary to earning those rewards.(Chiew Fen Ng and Poh Kiat Ng,2015).

There are yet another representation of the concepts with more interesting terminologies like integrated motivation and instrumental motivation which are going to be the centre of discussion in this paper. Krashen (1988, p.22) has mentioned the following factors related to integrative motivation. *Integrative motivation* is defined as the desire to be a part of recognized or important members of the community or that society that speak the second language. It is based on interest in learning the second language because of their need to learn about, associate or socialize with the people who use it or because of purpose or intention to participate or integrate in the second language using the same language in that community; but sometimes it involves emotion or affective factors a great deal. (as cited by Saville-Troike, 2006, p. 86) It also reflects the learner's high level of effort to learn the language of a valued L2 community in order to communicate with the group. Moreover, integrative motivation reflects an interest in L2, a desire to learn the target language and an attitude toward the learning situation, and the target language community (Gardner, 1982). *Instrumental motivation* involves the concepts of purely practical value in learning the second language in order to increase learners' careers or business opportunities, giving them more prestige and power, accessing scientific and technical information, or just passing a course of their study in school. (as cited in Saville-Troike, 2006, p. 86) An instrumental orientation emphasizes 'the practical value and advantages of learning a new language".

The integrative orientation thus stresses an emotional involvement with other community, while the instrumental orientation does not necessarily. (Gardner & Lambert, 1972). Furthermore, Brown (1987: 115) and Ellis (1986: 300) have indicated out that "instrumental motivation", which is believed to occur when the learner's aim is function (e.g. to get a job or pass an examination) and integrative motivation happens when the learner hopes to identify with culture of the L2 group". Ellis (1985), and Young (1987: 87), (as cited in Majed**. M.H. Drbseh**)

III. METHODOLOGY

*A. **Data Analysis**:*

The "Statistical Package for Social Sciences" (SPSS) version 22 was used to analyse the feedback acquired. The data concerning subjects' general background as well as their comments were calculated and presented in percentage**.** A five-point Likert scale was used to measure the level and type of subjects' learning motivation. Such scale was used in the questionnaire to specify the level of the agreement or disagreement based on the following criteria:

Table.1.

Mean Range	Interpretation
3.68 – 5.00	High degree of Motivation
2.34 – 3.67	Moderate degree of Motivation
1.00 – 2.33	Low degree of Motivation

The following Table 2 contains 10 instrumentally motivated related items.

Instrumental Motivation	Mean	Median	Standard Deviation	Motivational Level
1. I need to know English to enter best university	4.416	4	0.629706	High
2. English will broaden my future options	4.176	4	0.826897	High
3. I learn English for practical purposes.	4.004	4	0.852579	High
4. I learn English to pass my Degree to get a good job in the future.	3.848	4	1.11619	High
5. I learn English language just because I am interested in furthering my higher education.	3.688	4	0.989227	High
6. I learn English because it is important for travelling overseas.	4.116	4	0.785501	High
7. I learn English to look more sophisticated and knowledgeable.	3.82	4	0.950375	High
8. I learn English to have a better career in the future.	4.368	4	0.744846	High
9. I learn English because it can lead to more success and achievements in life.	4.124	4	0.84495	High
10. I learn English because being proficient in English makes other people respect me.	3.844	4	0.946174	High
	3.99756	3.5	0.877568	High

(Table 2 instrumental motivation Data)
(Questions Courtesy: http://penerbit.uthm.edu.my/ojs/index.php/JTS/article/view/1421/963)

Interpretation for The table 2 on Instrumental Motivation Data:
The table 2 on instrumental motivation Data presents overall details of the students' instrumental motivational level. The Table 2 sketches all the 10 questioned items, their resulting itemized mean scores, using descriptive statistics of Mean scores and Standard Deviation (S.D.) and their parallel motivation levels, which pledges the interpretation of data and the related implications. It shows that the respondents possessed a high level of instrumental motivation on the whole. The statement 1(I need to know English to enter best university) has the highest mean of 4.416 and is followed by the statement 8 (I learn English because I am interested about the culture of people around the world.) has the highest mean of 4.36. The students prefer English as it partly ensures the best career for future. This category is followed by the statements 6 and 9. On the whole, the students have appreciable level of instrumental motivation.

The following Table 3 contains 10 Integrative motivation related items.

Integrative motivation:	Mean	Median	Standard Deviation	Motivational Level
1. I learn English because it can help me to understand English books, movies, pop music etc.	3.848	4	0.961558	High
2. I learn English because I want to know and learn about the native English speakers' ways of life.	3.42	4	0.94614	High
3. I learn English because it allows me to discuss interesting topics with people all around the world.	3.976	4	0.796216	High
4. I learn English because I am very interested to join activities organized by local and international institution.	3.952	4	0.853587	High
5. I learn English because it allows me to transfer my knowledge to other people. For example, giving directions to tourists.	*4.08*	4	0.706823	High
6. I learn English because it makes me more open-minded, and friendly like English native speakers.	3.908	4	0.875558	High
7. I learn English because it allows me to behave like native English speakers. For example, the accent and using English expressions.	*3.668*	4	0.951524	High
8. I learn English because I am interested about the culture of people around the world.	*3.716*	4	0.906992	High
9. I learn English because I am interested to get to know other people from other cultures.	*3.792*	4	0.916261	High
10. I want to learn English as best as I can so that I can have better proficiency and understanding of the language.	4.256	4	0.681411	High
	3.8616	4	0.859607	High

(Questions Courtesy: http://penerbit.uthm.edu.my/ojs/index.php/JTS/article/view/1421/963)
(The table 3 on Integrated Motivation Data)

Interpretation for The table 3 on Integrated Motivation:
The table 3 presents overall details of the students' integrated motivational level. The Table 3 sketches all the 10 questioned items, and their mean scores and Standard Deviation (S.D.). It shows that the respondents possessed a high level of integrated motivation also. The statement 10 (I want to learn English as best as I can so that I can have better proficiency and understanding of the language.) has the highest mean of 4.25 whereas the statement 2 (I learn English because I want to know and learn about the native English speakers' ways of life.) has the lowest mean of 3.4. On the whole, the students have appreciable level of instrumental motivation. On the whole, the mean score of integrated motivation also shows a higher level of motivation.

B. ***Findings:***

Table 4: The Comparison between Integrative and Instrumental Motivation and Integrative Motivation

Type of Motivation	Mean	S.D.	Meaning
Instrumental Motivation	3.997564	0.877568	High
Integrative Motivation	3.8616	0.859607	High
Total	3.929582	0.868588	High

0.868588

Table 4 represents the comparison between instrumental and integrative motivation. It discloses that the mean score of instrumental motivation (3.997) is a little higher than the mean score of integrative motivation (3.861). However, the inclusive mean scores of both categories of motivation of 3.9 is considered as a high degree of motivation. So, it is obvious from the above table 4 that students have high level of instrumental and integrative motivation and they have to be channelized with right choice of teaching methodology and the good content to learn English. The analysis of the response given by 250 students have shown that the students learn English because it is a part of their education and their passion as well as career.

V. Suggestion for Future:

An elaborate study on the motivation has validated that the students of Mepco Schlenk Engineering College has high level of instrumental and integrative motivation. Their readiness of I year Engineering students are to be appreciated and care must be taken to make them to learn English. The pedagogy has a tremendous impact on the learning of English. The teachers' words of inspiration and the well-planned models of teaching English will make the students shake off their inhibition and come forward to learn the language with enthusiasm. The students should be provided ample space for self-learning as well as peer group learning in the lecture schedule itself so that the students can gain confidence regarding their usage of English. The teachers in engineering college must motivate students to use English language make the students use without hesitation. They have to focus on each criteria related to intrinsic motivation and instrumental motivation and keep motivating the students. The students should be made to know the avenues on job opportunities that English could create for them.

In the field of research, further study can be made on comparing the test scores of the individual students before and after the implementation of pedagogy blended with definite motivational strategies to learn English. This is a baggy task and the dissertation can be prepared after a wide study on motivation and its impact on language learning.

IV. Conclusion:

Numbers of observations steered in the past have proved that student's "instrumental motivation was higher than their integrative motivation in learning second language (Qashoa, 2006; Vaezi 2009; Al-Tamimi & Shuib 2009; Wong 2011; Adila 2012). A number of researchers and theorists [6 A. Walqui. As cited by Chiew Fen Ng and Poh Kiat Ng] have contended that intrinsic motivation correlates more closely with language learning success than extrinsic motivation, but a learner's total motivation is most frequently a combination of instrumental and integrative motivation. External rewards can either increase or decrease intrinsic motivation, depending on how they affect self-efficacy [7 P. Pintrich and D. Schunk , as cited by Chiew Fen Ng and Poh Kiat Ng]. The "Learning Situation Level is associated with classroom specific motivational factors: Course-specific, Teacher-specific, and Group-specific motivational components." (Leila Anjomshoa & Firooz Sadighi, 2015). L2 motivation does not necessitate choosing either integrative or instrumental motivation. Both types are important. A learner might learn an L2 well with an integrative motivation or with an instrumental one, or indeed with both (Cook, 1991). If concealed motivations are linked with the objectives of learning English, the students are sure to get rid of their inhibition towards English and start learning English with inquisitiveness. The successful language teacher knows to connect the passion and the need.

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ROLE OF LEARNING MANAGEMENT SYSTEM IN RETENTION OF EMPLOYEES IN BPO INDUSTRIES IN CHENNAI CITY

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ABSTRACT
The purpose of this study is to examine the cause and effect relationship between the attributes of the Learning Management system in the organization on employees' retention in BPO companies in Chennai city. The questionnaire was used to collect the primary data from the samples 450 employees working in BPO companies from Chennai city using convenience sampling method. The data collected through the questionnaire was analyzed through structural equation modeling approach. The results of the study proved that the attributes of LMS is having significant effect on retention of employees in BPO companies in Chennai city.
Keywords: Learning Management system, Employees' retention, Technology experience, Service Quality, KSA development, Career advancement,

INTRODUCTION

Learning in organization becomes essential in this technological era, because everything around us changes in the rapid pace. Due to liberalization and globalization the competition among the industries become more vibrant, therefore in order to compete with the organizations in developed countries, the organizations in the developing countries like India, need to ensure organizational learning to keep their employees update in the relevant technologies. The term "learning organization" describes an organization with an ideal learning environment, perfectly in tune with the organization's goals. Learning is the way we create new knowledge and improve ourselves. Although there is ample debate regarding the mechanisms and scope of learning, in its simplest form this is no different for organizations. As one can see organizational learning is based on applying knowledge for a purpose and learning from the process and from the outcome. Brown and Duguid (1991) describe Organisational learning as "the bridge between working and innovating." This once again links learning to action, but it also implies useful improvement. The Learning Management System (LMS) has become an extremely influential tool for organizations looking to enhance the performance and retention of its talent pool. LMS is a software that enables business organizations and academic institutions to create and manage lessons, courses, quizzes and other training materials. A learning management system also helps the organization provide training materials and lessons to employees, students or partners (Saikumari et al., 2018; Radha et al., 2019). The purpose of the study is to examine the cause and effect relationship between the attributes of the Learning Management system in the organization on employees' retention in BPO companies in Chennai city.

LITERATURE REVIEW

Literatures related to Learning Management System (LMS)

Joel and Christina (2018) recognized the vital factors that have an impact on learners' satisfaction with regards to e-learning system in Tanzania at the University of Dar es Salaam was studied by using DeLone and McLean (D&M) (2003) model. The selected model was verified by using regression analysis with a sample size of 153 students who have registered for the e- learning course. The outcome of the research shows that system, instructor, and service quality having a noteworthy and positive effect towards satisfaction of the learners, where service quality being the strongest predictor. Meanwhile the research outcome discovers that course quality do not have any noteworthy effect on satisfaction of the learners with the e-learning system. The results of the research will help the educational Institutions to planning or implementing e-learning systems which in turn will improve satisfactions of the learners therefore, escalate the success systems.

Oliveira et al. (2016), evaluated the present existing literature about the adoption of LMS for the e-learning system. The researcher conducted an integrative literature review the articles indexed in EBSCO, Web of Science, Scopus and SCI databases in which seventy eight where 78 references were found, of which twenty five were full articles. By analyzing the articles the researcher came to a conclusion that quantitative research

was carried out often and survey methods of research design was adopted in all the research. Mover the study also revealed that the method of educational platforms belong to Instructional Resources and very less of interface.

Literatures related to Employee Retention

Jitesh Kumar and Jagmeet (2017) in their study article stated the association among HR practices and retention of employees in the selected firm. The research reviews appropriate literature to recognize elements of HR practices that impact retention of employee. Over the previous era, the manner in which human resources have been handled and managed at work place has been acknowledged as one of the key features in attaining improvement in performance of each and every organizational. This research study was conducted in steel industry of Ludhiana in order to analysis the HR policies adopted by them in employee retention. This research has pointed out the factors which are accountable for retention of employees, such as satisfaction of employee in the job carried out by them, welfare and safety measure provided by the firm and the working atmosphere that prevailed in the organization.

Sultana Nazia and Bushra Begum (2013), in their article recognized the HR practices that were adopted by a chosen Indian MNCs in order to retain their employees and also pinpoint the views of the employees with regards to such retention practices. In recent years retention of employee has gained significant in current years, mainly as part of talent management programs, and its significance can be seen so much that the HR practitioner who incorporates it into a talent program may raise bewildered by the huge volume of study about it. Retention of employee is more than just keeping employees on the work it is more about nourishing employees, primarily by improving their satisfaction in job.

Literatures related to relationship between learning management system with employee retention

Liz Lee et al. (2007), examined the relationship between learning organization theory and the capacity to retain knowledge workers in the organization. It highlights that HR managers must diagnose specific relationships between learning organization elements, job satisfaction attributes and turnover intent as they occur for their knowledge workers. A survey was undertaken sampling knowledge workers in the IT industry. Measured on a Likert scale, the instrument was designed to explore the impact of learning organization disciplines upon job satisfaction and the importance of job satisfaction in determining turnover intent. Analysis of the data established the relationship between learning organization and turnover intent. The results suggest that three initial strategies should be implemented by HR managers in order to reduce possible staff turnover. The strategies identified are first, linking shared vision, challenge and systems thinking together via personal mastery; second, being more critical of which mental models are developed and shared within the organization; and finally, developing team learning systems throughout the organization.

Piyali et al. (2013), discovered the factors which maximally discriminate between those employees who intend to leave the organization and those who intend to stay with the organization. The primary motive was to find those factors which are strong predictors of intention to stay, so that employees who intend quitting are identified in advance, and remedial measures are taken to retain them, especially if they are key performers. A questionnaire covering several aspects relating to employee retention was designed and distributed amongst a sample of 100 employees chosen through incidental sampling. Data thus collected was subjected to factor analysis, which yielded seven factors: Goal Clarity, Autonomy, Employee Engagement, Affective Commitment, Organizational Culture, Compensation and Benefits, and Normative Commitment. Discriminant analysis was done on these factors to identify the best predictors of employees' intention to leave or stay, by creating a discriminant function. Results showed that Affective Commitment, Normative Commitment and Goal Clarity were the best predictors of employees' intention to stay or leave the organization. Increasing employee turnover rates have necessitated the formulation and implementation of a robust retention strategy to effectively reduce employee turnover. By building a decision rule and a cut-off score to classify an employee into one of the two groups – “intend to leave” or “intend to stay” – an organization would be able to invest its resources in the right employees.

Natalie et al. (2011), investigated the factors which has the effect on employee retention. The primary data of the research were collected through the questionnaire, both hard and soft copy. The 972 sampled clerks from various profit and non-profit organizations. The results show that the learning of employees in the organization has its effect on retention of employees. Allowing people to learn what they are interested will inspire them to stay with the organization. Results concerning the demographic profile of employees indicate that only age group has a significant effect with retention.

CONCEPTUALIZATIONS OF RESEARCH CONSTRUCTS

Learning management system and its factors

Learning Management system construct in the present research is evaluated through four major dimensions such as technology experience, service quality, system quality, and information quality, whereas Employees' retention construct is assessed through training & development, KSA (Knowledge, Skill, and Attitude) development, utilization of skills & abilities, and career advancement.

Technological Experience

The term 'technological experience' refers to experience of the user about the technology used in Learning Management System. Latest technology facilitates latest features, and user friendliness.

Service Quality

Service Quality or quality of service is provided by the one to another and its evaluation is done by the receiver based on the differentiation of the perception and expectation of the quality of services provided by the service provider. The level of service provided by a person, organization, or a computer-based source. If the service is provided by a computer-based source (e.g., Web site), the service quality is referred to as an electronic service quality.

System Quality

System Quality focuses on the performance characteristics of the system under study by researching resource and investment utilization, reliability of devices or products, response times of employees, a device's ease of use, human factors, design controls and system accuracy.

Information Quality

Information quality contribute significantly to the success of e-learning system. This factor, quality of information refers to the measurement of IS output, mainly the quality of the information produced by the system, which is primarily in the form of reports. At the same time, it also includes the characteristics of the quality of information. They are accuracy, precision, reliability, completeness, conciseness, relevance, understandable, meaningfulness, timely, comparability, and format. Most of the earlier focused on IS success models as a whole studies and examined the relationship between information quality and use.

Employee' Retention and its factors

The capacity of an organization to retain its talented employees is known as Employees' retention. It is the goal of the organization to keep talented employees and reducing attrition rate to develop a positive work atmosphere to create engagement, demonstrating the appreciation to employees, and offering competitive pay and benefits and better work-life balance. Employers are particularly interested in retaining employees during periods of low unemployment and heightened competition for talent. To retain employees, organizations use human resources technology for recruiting, onboarding, engaging and recognizing workers and offer more work flexibility and modern benefits like physical and financial wellness programs.

Training & Development

Training and Development is one of the main functions of the human resource management department. Training refers to a systematic setup where employees are instructed and taught matters of technical knowledge related to their jobs. It focuses on teaching employees how to use particular machines or how to do specific tasks to increase efficiency. Whereas, Development refers to the overall holistic and educational growth and maturity of people in managerial positions. The process of development is in relation to insights, attitudes, adaptability, leadership and human relations.

KSA Development

A KSA (knowledge, skills, and abilities) is a detailed list of the qualifications that a person needs to perform a specific job. The KSA is created by the employer, and it helps them single out the candidate who's the best fit for a job based on their answers to job-related questions.

Utilization of Skills and Abilities

Effective skill utilization requires complex and challenging jobs. Organizations have a large amount of leeway in how to combine tasks to form jobs. Skills are found in people; organizations need to offer the right incentives to unlock workers' potential. Skills can be built on the job, and workplaces are great

learning environments. Job complexity has a motivational component that can be used to induce workers to apply and develop their skills.

Career Advancement

Career advancement is one of the key element for employee satisfaction and retention at a company. Career advancement refers to the upward progression of one's career. An individual can advance by moving from an entry-level job to a management position within the same field, for instance, or from one occupation to another.

METHOD

Measures of the constructs

The research survey was done using self-report questionnaire. The respondents were asked to provide demographic information such as gender, qualification, designation and experience followed by giving Reponses to statements related to Learning Management system (20 items) on four factors namely technology experience, service qualify, system quality, and information quality, whereas employees' retention (20) is assessed through training & development, KSA development, utilization skills & abilities, and career advancement. These factors of the study are taken from earlier researches related to the research environment. Respondents opinion were received in a five-point Likert scale ranging from strongly disagree, disagree, Neutral, Agree and strongly agree. All the items in the questionnaire were given in English language.

Subjects and procedure

The data used to evaluate the proposed research model were chosen through convenience sampling method. This survey was open to samples who are working in BPO companies located in Chennai city and have minimum of one year experience and at least having a working knowledge of LMS in the present company. An overall sample of 450 responded to the questionnaires in the survey from various BPO companies located in Chennai city. The questionnaires were circulated and gathered in one month time, exactly during the break hours. On an average, samples took around 15 -20 minutes to respond to the questionnaire. The reliability and validity analysis of the questionnaire based on the results of the pilot study conducted with 40 samples are summarized in table 1 and 2.

Table 1. Reliability Results

Sl. No	Scales	Reliability Cronbach	Results
1	Technology Experience (TE)	0.794	Acceptable
2	Service Quality (SEQ)	0.782	Acceptable
3	System Quality (SYQ)	0.904	Excellent
4	Information quality (INQ)	0.815	Good
5	Training & Development (TD)	0.820	Good
6	KSA Development (KSA)	0.788	Acceptable
7	Utilization of Skills & Abilities (USA)	0.915	Excellent
8	Career Advancement (CA)	0.823	Good

The results of the reliability analysis is shown in table 1, which indicates all the factors of data collection instrument are having acceptable level of reliability.

Table 2. Convergent Validity - Results

S. No	Indices	Value	Suggested value	Interpretation
1	Construct Reliability / Composite Reliability (CR)	0.82	CR > 0.7	Good
2	Average Variance Extracted (AVE)	0.73	AVE > 0.5	Good
3	Maximum Shared Variance (MSV)	0.77	MSV > AVE	Good
4	Average Shared Squared Variance (ASV)	0.75	ASV > AVE	Good

The results of convergent / composite validity are shown in table 2, which indicates that all the indices are within the suggested range.

Sampled Employees Profile

The table 3 presents the demographic profile of the sampled employees' profile using frequency analysis.

Table 3. Sampled Employees' Profile

S. No	Particulars	Frequency	Percent
1	Gender		
	Male	239	59.33%
	Female	211	40.67%
2	Qualification		
	Undergraduate	187	58.00%
	Post-graduate	146	30.67%
	Others	117	11.33%
3	Designation		
	Junior level	172	48.00%
	Middle level	155	36.67%
	Senior Level	123	15.33%
4	Total Experience in BPO industry		
	1 - 3 Years	162	41.33%
	3 - 6 Years	154	36.00%
	Above 6 Years	134	22.67%
	Total	**450**	**100**

From the table 3, it is identified that majority (59.33%) of the sampled employees from BPO are male, and around 41% of them are females. Now-a-days even female prefers to work in night shift jobs in BPO companies. 58% of the sampled employees are undergraduates, 30.67% of them are post-graduates, and 11.33% of them comes under 'others' category who has completed ITI/ Diploma, M.Phil, etc. Out of 450 employees surveyed in the research, 48% of them are working in entry/ junior level, one-third (36.67%) of them are working in middle level, and 15.33% of them are working as senior level executives in BPO companies. The 41.33% of the sampled employees are having the total work experience of 1 - 3 years, 36% of them are having 3 – 6 years, and 22.67% of them are having the total experience of more than 6 years in BPO industry.

RESEARCH MODEL AND DEVELOPMENT OF HYPOTHESIS

The research model which tests the cause and effect relationship between learning management system and employees' retention in BPO industries is portrayed in figure 1, because BPO is the knowledge based industry which needs technical knowledge and communication skill to answer customer queries, provide solution to the customer complaints/ problems, and adopt the appropriate procedure to process the various kinds of documents according to the clients requirements.

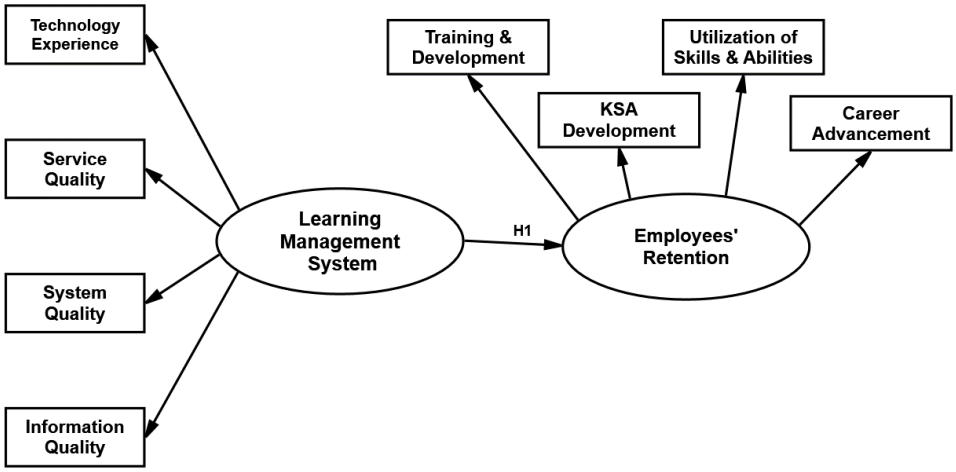

Figure 1: Research Model

Each path which connects the constructs and variables represents the relationship to be tested using the Hypothesis testing, therefore the following hypothesis can be outlined based on developed research model:
H1: Learning Management system (LMS) is having significant positive influence on retention of employees in BPO companies at Chennai city.

STRUCTURAL EQUATION MODEL (SEM)

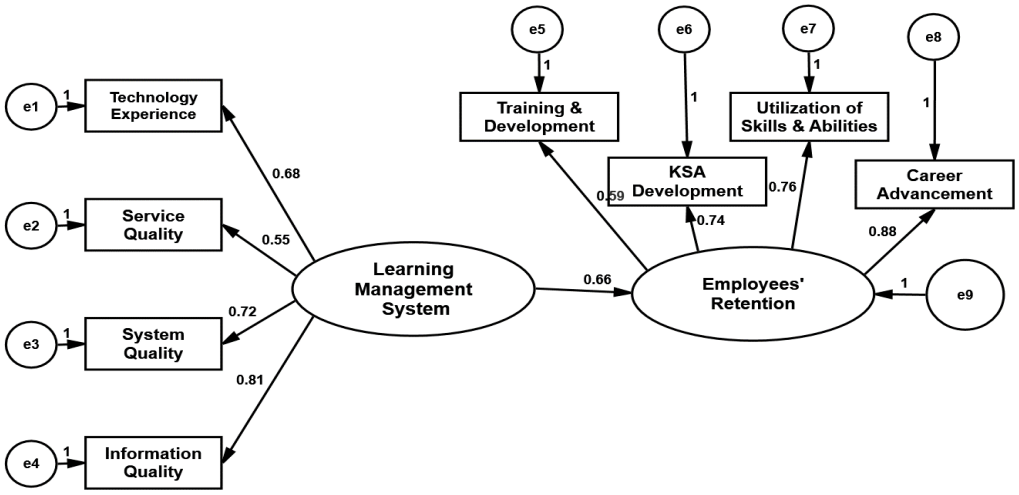

Figure 2. Standardized path estimates in SEM

The Research Model was established to examine the cause and effect relationship among the chosen constructs. Figure 2 represents the research model based on standardized path estimates.

Table 4. Path coefficient of the Research Model

Path			Path coefficient	P
Technology Experience (TE)	<---	Learning Management System	0.681	-
Service Quality (SEQ)	<---	Learning Management System	0.546	<0.001**
System Quality (SYQ)	<---	Learning Management System	0.720	<0.001**
Information quality (INQ)	<---	Learning Management System	0.813	<0.001**
Training & Development (TD)	<---	Employees' Retention	0.589	-
KSA Development (KSA)	<---	Employees' Retention	0.741	<0.001**
Utilization of Skills & Abilities (USA)	<---	Employees' Retention	0.763	<0.001**
Career Advancement (CA)	<---	Employees' Retention	0.879	<0.001**

All the observed variables of the research are having significant loadings on its construct and it is demonstrated in table 4. The factors namely technology experience, service quality, system quality, and

information quality substantially correlated on the main construct i.e. Learning Management System with standardized regression coefficient more than 0.5. Similarly, the factors training & development, KSA development, utilization of skills & abilities, and career advancement are also meaningfully related with its main construct i.e. Employees' retention with standardized path coefficient more than 0.5. All the above-mentioned factor loading are positive and significant at 0.01 level.

Hypothesis testing

Table 5. Hypothesis testing

Path			Path coefficient	P	Hypothesis Result
Employees' Retention	<---	Learning Management System	0.664	<0.001**	Significant at 0.01 Level

Table 5 represents the results of hypothesis testing of cause and effect relationship between independent (i.e. Learning Management System) and dependent (Employees' Retention) variable. The path coefficient between Learning Management System and Employees' Retention is 0.664, which is positive and significant at 0.01 level, therefore it is concluded that Learning Management System of the BPO companies is having significant positive effect on employees' retention through offering training & development programmes, KSA development, utilization of their skills 7 abilities, and offering advancement in their career.

Table 6 Research Model Fit

S. No	Model Fitness Index	Value	Suggested Range
1	P value (Significance value)	0.213	P > 0.05
2	RMSEA (Root Mean Square Error of Approximation)	0.019	< 0.08
3	GFI (Goodness of Fit Index))	0.913	> 0.90
4	AGFI (adjusted Goodness of Fit Index)	0.906	> 0.90
5	Chi-square / DF	2.479	2 to 5
6	RMR (Root Mean Square Residuals)	0.018	< 0.08

Table 6 encapsulates the summary of the research model fit with the primary data. As shown in the table 6, all the indices values are at satisfactory level, therefore it is concluded that the research model is found to be fit.

CONCLUSION

The results of the present research evident that the proper focusing on the design, and development of Learning Management System and its attributes namely Technology Experience, Service Quality, System Quality, and Information quality could help the employees in BPO industry to attend effective training & development programmes which would result in their KSA development, and proper utilization of skills & abilities and offering career advancement results in retention of the employees in BPO companies. The findings of the research proved that an effective LMS in the organization can retain employees of the firm and establish long-term relationship with them.

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SOCIAL NETWORKING AS AN E-LEARNING TOOL FOR GAINING TECHNOLOGY RESOURCES USING GENETIC ALGORITHM

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ABSTRACT
Social networking is used widely by all the users for sharing their knowledge. Face book, Twitter, LinkedIn are the very commonly used social networking applications. used social media. The students have various groups in these social networking applications for sharing the knowledge related to their domains. Since most of the time, the students spend their time on social media, it has become very vibrant to aggregate the resources related to the education. In this paper, we have highlighted the abundant use of social networking to improve the learning through e-platform. This paper explores the role of Social Networking Sites (SNS) in e-learning by investigating the attitudes, behaviors, knowledge and views of computing students towards the use of SNS in e-learning. Online social networks (OSNs) have gained popularity among users from all over the world during the past few years. And E-learning has made learning process quite convenient for users by using the networks. Data was collected from an online survey and interviews, and analyzed to discover the practices, tendencies and the current status of the use of SNS in e-learning as well as how these can be improved. By combinning OSNs with E-learning is a new idea. And the role of OSNs in students' E-learning experiences is focused on in this paper. And it is believed that online social networks can be effectively used in E-learning in the future. We believe that SNS can play a major supporting role in e-learning and that the potential for using SNS in e-learning is not fully reached. The situation may be improved by providing increased guidance and training to students. Learning activities using SNS should be planned and organized. Brief guidelines on using SNS in e-learning are also included in this paper.
Keyword: Social networking sites (SNS),Online social networks (OSNs)

INTRODUCTION

The internet has huge volume of users around the world. Everyone is using the social media applications as a common platform for sharing the information. It is very potent that when the user immediately shares the information, it is getting disseminated instantly to all the users who are using the social media applications. Though the shared information is accessible to every user, only the users who are closely related to that information domain have the maximum utility. In connection with this, the education related information shared by the students play a very crucial role in the social media applications. Students share their course related materials with their peer group users and they interact with experts for enhancing their knowledge and clarifying their doubts. In the last decade, e-learning facilities have increased in academic applications.

Their uses have risen in higher education and have almost changed the learning modes of the student communities. The engineering domain is clearly aware of this ever-growing scenario, and using it for implementing effective learning strategies to the modern young minds. And also the applications of electronic learning have started dominating various platforms that involve online, distance and traditional university education systems. E-learning is a web application, which is used to share the content, and to manage, disseminate, and monitor the educational activities of an organization through online activities. A few of its highlighted functions are to manage learners, learning resources, learning object materials and activities, to control access, monitor the learning process and to make evaluations. It can also be stated that the use of information and web technologies in learning is being encouraged through the use of e-learning systems.In this paper, section 2 describes the related works of the social networking applications in e-learning. Section 3 explains in detail about the proposed social media based
e-learning systems.

RELATED WORKS:

The USDLA was formed in 1987. At that time when "Power users" were boasting of their Intel 386 processors. In that context, DL was a concept well outside the education mainstream. It Granted few people who know something of the process but hands-on DL experience was rare. USDLA, then, provided a means for these pioneers to find one another[3].MOOC provides low-cost courses and the potential to expand and include a broad diversity of educational levels, MOOC is acquiring power and popularity. Like MOOC, STEM grabbed a large share of available online courses provided by MOOC platforms MOOC have the potential to allow children who are homeschooled to pursue their education from their homes [4].

E learning is Web based learning where we can learn essential content at anytime, anywhere. Ontology was familiarized in this model to support the conceptualization of certain domain because it was based on reusability[5]. Here the Resource Description Language (RDF) and the Web Ontology Language (OWL) is providing a language and structure for describing all ideas and concepts in the universe and then relating these to each particular subject area[6].The mobile learner is increasing the learner"s capability physically anywhere. This is the intention to increase research and changes and maximize the potential of mobile learning[7].

In this paper the benefits of information structure, oriented to services are discussed. There are still a series of problems, and a way for a wide solution is to make interoperable services. It proposes that using ontology and with semantic focus will solve the difficulties[8]. In this paper, they make a case for why ontologies can contribute to block chain design. For this, they analyze a traceability ontology and translate some of its representations to smart contracts that execute a provenance trace and enforce traceability constraints on the Ethereum blockchain platform.[9] This SARA voluntary, regional solution was developed through a lengthy, collaborative process that brought together major stakeholders in higher education[10]. In this paper they discuss the explicit representation of the semantics of data, accompanied with domain theories (ontologies), which will enable a Web that provides a qualitatively new level
of service[11].

Several works of artificial intelligence are used in adaptive e-learning to give the learner a content adequate to his profile in the literature we find: Hawkes and Derry [15] have used the informal fuzzy reasoning in the TAPS system to determine with uncertainty the solution that the student has built among those of the system (models). Ruiz et al. [11] have modeled an adaptive hypermedia system, called Feijjo.net, based on the learning style. The system uses fuzzy logic to determine the learner's style from the CHAEA questionnaire.

Chrysafiadi and Virvou [17] have proposed a learner model that represents the learner's knowledge through the overlay model (presented concepts that the learner master with "1" or with the word "known" and those that do not master by "0" or unknown), the fuzzy logic allowed to define and update the level of knowledge of each concept, with each interaction with the e-learning system.

Martin and VanLehn [18] have presented OLAE as an assessment tool that collects data from students solving physics problems in college. For each problem, OLAE automatically creates a Bayesian network that calculates the probabilities indicating the rules that the student uses.

Viccari et al. [12] have introduced AMPLIA, an intelligent learning environment used as a training tool in the medical field, the system combines bayesian networks with cognitive.There are also works that use genetic algorithms for adaptive e-learning, namely:

In [11] the Researchers describe an adaptive system con-ceived in order to generate pedagogical paths which are adapted to the learner profile and to the current formation pedagogical objective. They have studied the problem as an "Optimization Problem" using Genetic Algorithms, the system seeks an optimal path starting from the learner profile to the pedagogic objective passing by intermediate courses to prepare the courses for adaptation.

In [17] a genetic algorithm based adaptive learning scheme for context aware e-learning has been described, the Re-searchers defined a new three level structure for learner's context comprising of the content level, presentation level and media level is defined. The learning path generation algorithm now evolves into a learning scheme generation as it generates a learning path accommodating the entire learner's context.

SOCIAL NETWORK ORIENTED E-LEARNING SYSTEM:

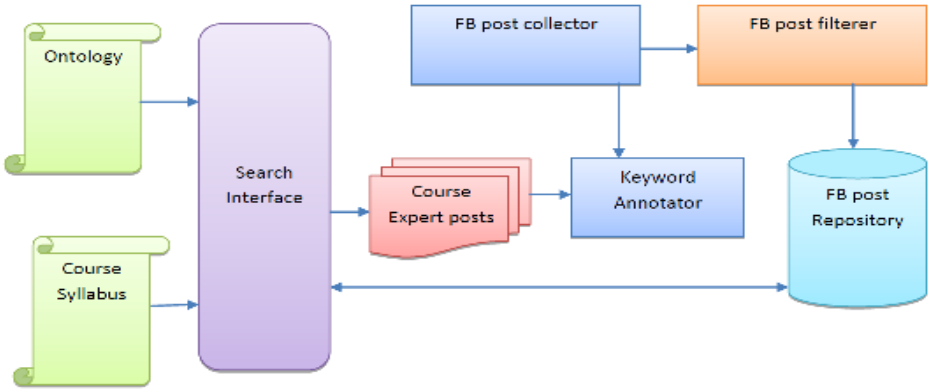


Figure 1

In particular, the system initializes a unit for collecting learning materials by setting target concepts in the input domain ontology and associate different course experts to share educational posts on a specific topic. The e-learning based supportive learning system mainly encompasses the ontology, expert shared post, Keyword annotator, FB post collector, FB post filtering system and the FB post repository.

FB Post Pre-Processing Or Filtering:

It allows transforming the original FB posts from the facebook into a common format to be used by mining tasks. Thus, before applying various mining techniques, general data preprocessing tasks have to be completed. The ontology is the hierarchical representation of course details that belong to the corresponding subject . In addition to the collected

FB posts using input ontology, the posts relevant to the subjects are created and posted Ontology,Course,Syllabus,Search,Interface course,Expert posts,FB post collector, Keyword Annotator,FB post filterer,FB post,Re pository by the experts. The expert posted posts are annotated, using keyword terms. The annotated posts are stored in the FB post repository.

Integration With The E-Learning System

The FB post collection and filtering related tasks are integrated into the e-learning environment. All data pre-processing and post-processing are carried out into a single application.

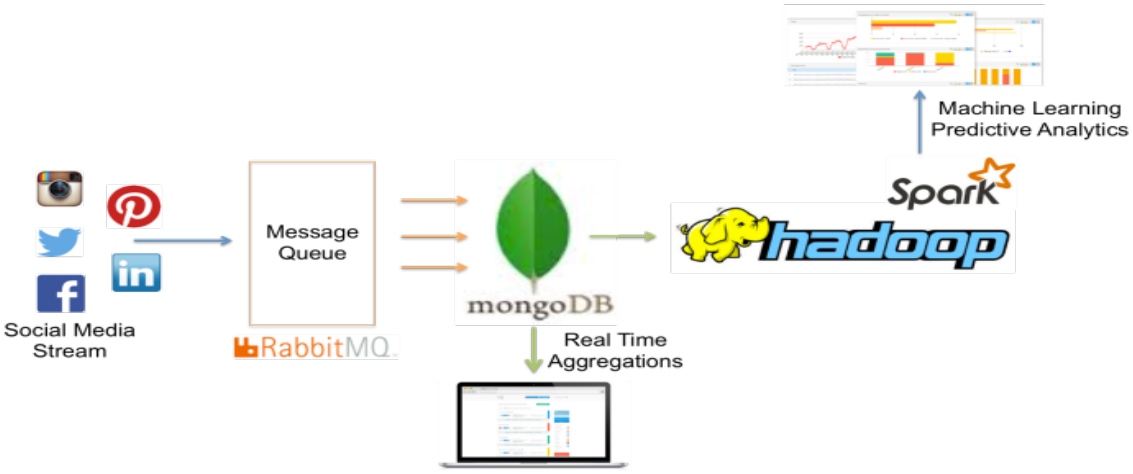
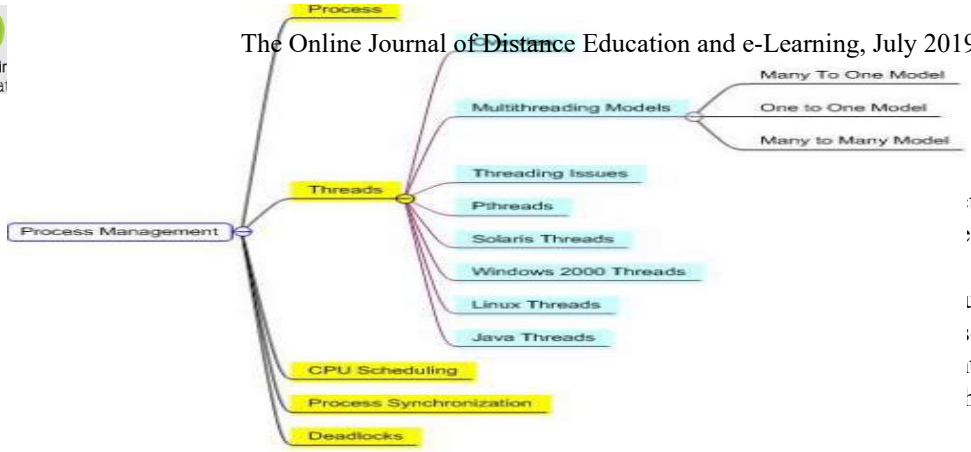


Figure 2

Facebook was identified as the most popular SNS. Also YouTube and Instagram are identified as the most used SNS. To improve and enhance the method of learning the following algorithm is suggested in this paper.



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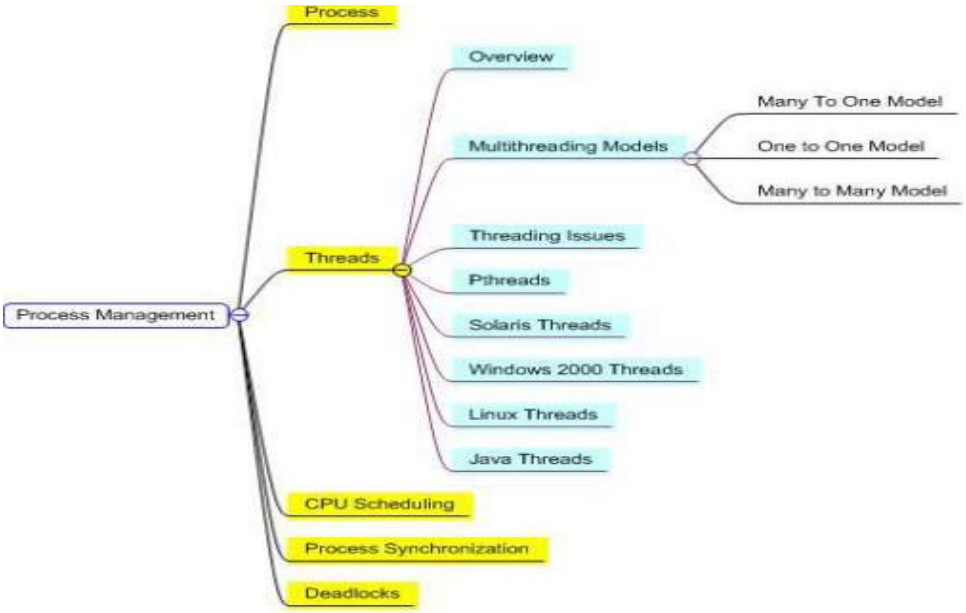


Figure 3

Our corpus in our case contains the documents that represent the learner's objectives, the first thing to do is to extract all the terms or concepts in the corpus, and for each document construct a vector That represents it, if a term exists in the document we calculate its weight and if not we put 0, at the end of this operation we construct a vector for each document to calculate the similarity between the profile of the learner and each pedagogical objective.

ALGORITHM: (Blog-Ranking)

Genetic algorithms (GAs) are stochastic optimization algorithms based on the mechanisms of Natural selection and genetics, their operation is extremely simple, we leave with a population of potential solutions (chromosomes) initial selected arbitrarily, we evaluate their relative performance (fitness). On the basis of these performances, a new population of potential solutions is created using simple evolutionary operators such as selection, crossing and mutation. This cycle is repeated until a satisfactory solution is found [3].In our work we use a simple GA, which consists of iterating the following three operations: reproduction, crossing and mutation, the population created during each iteration is called a generation and it's noted P_t.

There has been an increasing interest in the application of GA tools to IR in the last few years. Concretely, the machine learning paradigm, whose aim is the design of a system able to automatically acquire knowledge by themselves, seems to be interesting on this topic. The first thing in a genetic algorithm is the definition of the initial population (selection operator or evaluation) on which we will apply the treatment as in our case it is to show the documents (educational objectives) relevant to the profile of the learner using the cosine similarity that will play the role of fitness function which is a very important parameter in GA because with it we can decide whether an individual is going to be selected or not. There is a lot of methods to make the selection like the biased lottery, the elitist method or the selection by tournaments.

The calculation of the weights of terms or concepts in each document is calculated by the following formulas:

$$P\ oid(t_i; r_j) = IDF \qquad \text{Equation 1}$$

$$T\ F = \frac{f(t_i; r_j)}{N} \qquad \text{Equation 2}$$

$f(t_i; r_j)$ is the number of occurrences of the term t_i in the document d_j and N is the total number of terms in the document

$$IDF = \frac{\log(f(t_i; r_j))}{M} \qquad \text{Equation 3}$$

$f(t_i;r_j)$ Is the number of occurrences of the term t_i in the document r_j and M is the total number of documents in the corpus.

The similarity used in our work is the Cosine similarity. This measure uses the complete vector representation, i.e. the frequency of the objects (words).Two objects (documents) are similar if their vectors are confused, the formula is defined by the ratio of the scalar product of the vectors X and Y and the product of the norm of X and Y.

1) Randomly choose the initial population Z(0)= (z1,z2,…..zn)
2) Each Chromosomes Fitness F(zj) is computed.
3) Apply Blogs ranking by mating current chromosomes, then by applying mutation and recombination as a parent chromosomes mate.
4) Delete the left out population to make room for new population.
5) Compute IDF and TF to compute new fitness
6) T:t+1, if not move to step 3 else stop and return the optimized result.

EXPERIMENTS AND RESULTS:

The content based importance is used to measure and retrieve the FB post contents related to the query content. Ranking is the process of sorting out the blogs based on the order of their content relevance with respect to the user query. The user enters a search term, and in response the blogs relevant to their content are displayed. The blogs are ranked based on the relevance of the blog content using the blog ranking algorithm. The query term helps to retrieve the bins that match with the given input keyword. The retrieved bins include super classes, sub-classes and the peer bins that have been requested by the query term. Once the bins have been retrieved, the resultant blogs are converted as blog objects that help to maintain the blogs in a general data format. The fuzzy probability is computed for the resultant blogs using the Equation. The computed probability value is taken as the CBI value for every blog. After computing the CBI values for all the blogs, the blogs are sorted on the basis of the calculated CBI values.

In the very first stage of ranking the blogs, the individual blog's rank value is computed for the given keyword. The rank value refers to the CBI value, that is, how much content,
relevant to the user query the blog contains. The blogs have been ranked based on the computed CBI value. The Table displays the details of the blogs retrieved for the keyword "Apple"; 16 blogs have been retrieved in 41 seconds. The blog URL is used for locating the particular blog where the query relevant blog contents exist. The content richness of the blogs is estimated by the calculation of the CBI value, often referred to as the rank value which is taken as the key ingredient for ranking all the blogs.

When the results are compared with the existing keyword based method, the proposed CBI-based blog ranking method retrieves the most relevant, personalized blogs in a sorted order of relevance for the user. The ontology diagram shows the precision and recall values for all the existing blog search engines. The tabulated values show that the precision value is high for the blog ranking system, and the recall value is also preserved. The statistics of the collected blogs from various search engines shows, that the number of blogs retrieved for each keyword is high. It is very clear that except for a few, most of the retrieved blogs are irrelevant. Blog search engines like Blogpulse and Blogscope start with zero precision and recall. It shows that the very first blog listed for the keyword "apple" is not relevant to the query.

Blog search engines like Technorati and Icerocket start with very high precision and recall, which is not preserved because the number of blogs retrieved is high. Regator is not a popular search engine; it can retrieve only less number of blogs, and it also fails to preserve its recall value.The experimental results show that the blog ranking system ranks the blogs according to the relevance of the blog content and user profile. It also yields very high precision and recall. The blog ranking system and its corresponding graph have been plotted. Though the blogs have been ranked based on their content, most of the times the retrieved number of blogs for a specific topic is extremely high. Sometimes the blogs may be similar in their content, or even may have the same content. In such cases, summarization takes an important role. Generally summarization is the process of giving the contents in brief by collecting the information on a common topic. In case of blog summarization, initially the collected blog contents are split into various sentences (S1, S2, S3…Sn). The term frequencies of all keywords are computed for each sentence. It is also necessary to compute the similarity of the sentence Si to the query word „q". In some cases the sentence may not have the same word as the query term, but the semantics may appear in the sentence.

The sentence is checked for word matching in terms of semantics, equivalence and relevance .Sentences with more than 75 percentage of stop-words don't yield any useful information. So, those sentences would be removed from the sentence collection. The mean value of TFIDF, cosine similarity and word matching are calculated to find out the highest mean valued
sentence. After calculating the mean value for sentences, the top five meaningful sentences
are selected for giving the summarized content. The subject in the ontology and the frequency
of the corresponding subject blogs are summarized.

The experimental results show that the proposed work performs well when compared with the existing blog search engines like Technorati, blogpulse, blogscope, icerocket, and regator. The blog summarizer retrieves only the blog relevant to the query, with a meaningful summarization and minimal number of blogs. The number of blogs retrieved using various search engines for the selected keywords. The blogs retrieved using search engines, contain a huge amount of irrelevant blogs. The experimental results show that the TPBRS yields better results. It is inferred that the number of blogs retrieved for each keyword is very high and the relevance is very low. The semantic blog mining framework uses the ontology to collect the relevant blogs from the blogosphere,then remove the irrelevant blogs and create the relationship between blogs before storing them in the repository. In this framework, the blogs stored are relevant to the subject, which makes the search process easier, and reduces the search time as well as the user ambiguity.Since the collected blogs are preprocessed and semantically related, only the relevant blogs are retrieved for the user. Hence the relevance of the blogs is completely (100%) achieved.

Alongside other SNS like Facebook and TwitterInstagram , YouTubeis also becoming popular as it's increase of use in the field of learninghad improvedas shown In graph(figure4&5).

Figure 4

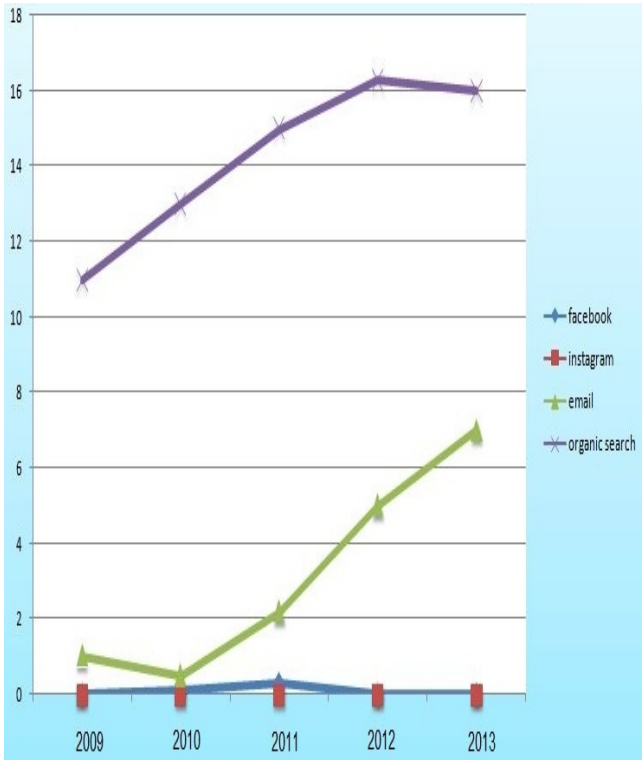
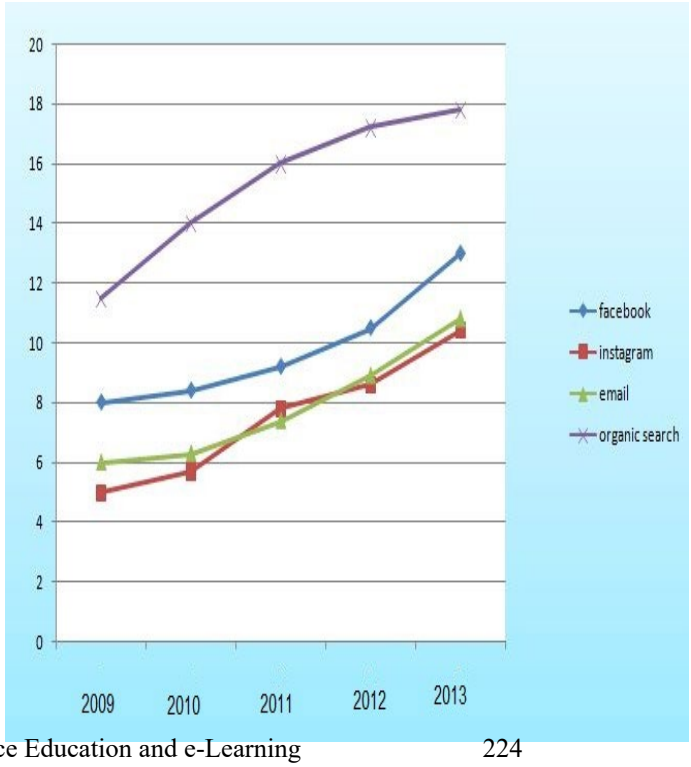


Figure5



CONCLUSION AND FUTURE ENHANCEMENT

Blogs are the authoritative sources of both technical as well as personal information. As the blogs are spread over the blogosphere, ranking contributes its role towards analysing the bestrelevant results to the user queries. Indexing has an important place in the process of blog ranking. Especially, user given keyword based indexing provides intuitive and efficient blog ranking results. In addition to indexing, the similarity analyser performs the process of checking the blog relevance by computing the cosine similarity of blogs to improve the ranking results. The blog ranking algorithm (BRA) involves the computation of the content based importance (CBI) values of the blogs, to provide better results in response to the user query. The optimized results is obtained with the genetic algorithm strategies. Summarization takes into consideration the various blogs on a similar topic, computes the mean value of TF-IDF, then summarizes the blogs, and provides the brief content by combining the highest mean valued TF-IDF sentences.

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STUDENTS' PERCEPTION OF MOBILE LEARNING AT UNIVERSITY OF CAPE COAST, GHANA

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ABSTRACT
Many students use mobile devices both in their free time and personal use. However, Mobile devices have the potential to be used for learning purposes as well. A quantitative research methodology influenced this study. A total of six hundred (600) undergraduate students of the University of Cape Coast (UCC) in Ghana participated in the study. Stratified method of sampling was used to group students into faculty/school and simple random sampling was employed. The results showed that majority of the students perceived that mobile technology will enable them to access learning resources quickly and are willingly to adopt mobile learning (m-learning) as a platform for learning. In addition, the study opens up key activities such as ability to view lecture slides; download and view recordings both audio or video for learning which developers must consider when developing a mobile learning platform for students. This study recommends that Smartphone's and mobile devices should be permissible to students, lecturer to start virtual classroom, discussion forums and using pre-recorded lecturers with PowerPoint so that the students can also benefit from these functionalities since they were ranked among the last three (3) services not used.
Keywords: mobile learning; students' perceptions; Ghana.

INTRODUCTION

Historically, the realm of education had changed drastically with the years, which ICT had played a major role in several cases. E-learning emerged in the late 80s and had adverted most important concepts in education. In the mid-90s many computerized companies emerged and led to a massive built of power desktop and handheld devices (Tatnall, 2012). Computers then grew significantly and became more affordable and ubiquitous, e-learning became even more widespread (Hashemi, Azizinezhad, Najafi, & Nesari, 2011). According to Vrana (2018) mobile learning (m-learning) is the latest developed form of e-learning. Mobile Learning is an educational system conducted by means of portable computing devices such as mobile or wireless handheld devices for learning (Seipold, 2014). Primarily, mobile learning enables learners to have control of how to learn; a learner can choose when to learn and from which location to learn. Mobile technologies especially mobile phones have become prevalent in recent times (Vrana, 2018). Globally, mobile telephone penetration between 2005 and 2014 was increased by 68% (ITU, 2016). The number of mobile phone subscriptions globally as at 2017 reached five (5) billion and was expected to increase to 5.9 billion by 2025 equivalent to 71% of the World's population. (GSMA, 2018).

As at the end of 2016, mobile penetration in Ghana was estimated at 136.34% (NCA, Voice Statistics, 2016). Interestingly, in a span of 3 years (2014-2016), the rate of mobile phone usage in Ghana has increased at a rate of over 22.97% and was expected to increase at an expedient rate within a short period (NCA, Voice Statistics, 2016) (NCA, Voice Statistics, 2015) (NCA, Voice Statistics, 2014). Obviously, one cannot downplay the importance and attachment people have to the use of mobile phone. Clearly these figures indicate a high and fast-growing use of mobile phone in the Ghanaian economy. Majority of Ghanaians are increasingly subscribing to mobile voice telephone; this may be due to the fact that mobile devices have become networked and activated with Bluetooth, Wireless Internet via Wi-Fi, and Global System for Mobile (GSM). This has led to the addition of enhanced web 2.0/social media applications such as Skype, Facebook, Twitter and WhatsApp. These enhanced features enable the user to receive and make calls, receive and send short messages, surf the internet, stream video, chat and use other data services. One cannot lose sight of the use of mobile phones and these enhanced features in mobile devices however, have the capacity to support mobile learning.

Generally, ownership of mobile device among Ghanaians especially students has been observed to be on the increase. As a means of communication and to get connected to family and friends at home, almost every

tertiary student in Ghana owns at least a mobile device, which may not be used for learning purposes. It is therefore imperative that this study sought to find out how students perceive the use of mobile technology in learning. This paper seeks to answer the following research questions:

- To what extent do students have access to mobile resources?
- To what extent are UCC students aware of m-learning?
- How do students perceive the use of mobile technology in learning?
- To what extent will student be willing to adopt m-learning?
- What m-learning facilities would UCC students like to be implemented?

For the university to keep pace with the increasing number of students' population, and to meet the students' needs in teaching and learning, as well as the demands of the development of Ghana's human resource base, there is the need for the university to embrace new forms of instructional delivery. M-learning will be one of the approaches for the university to adopt in order to maximize learning and to meet the different learning speed of students. The attitudes and perception of students are very crucial for the successful implementation of the m learning platform. This is because, they will be the primary users of it when it is implemented. Therefore, this study will help the authorities of UCC to know the perception of students before implementing this technology.

LITERATURE REVIEW

Mobile phone ownership has growing visibility among students in higher education. A study conducted by (Wilhelm, Yankov, & Magee, 2011) established that all respondents who happen to be students of Northwest University owned at least one mobile phone. A similar research by (Wilhem, 2012) on the analysis on phone consumption further reiterates the fact that college students have owned an average of 4.4 mobile phones in their lifetime as students. Asuamah (2013) also established that students of Sunyani Polytechnic had used mobile phones and have between 3 and 5 phones. The study further revealed that 95.6% of the respondents agreed that ownership of mobile phone was very significant (Asuamah, 2013). Clearly the 3 studies conducted in different settings go to enunciate that, the ownership and use of mobile phones in tertiary institutions cannot be over emphasised.

Mobile learning is gradually gaining grounds with regards to its visibility, significance and usage among students in higher education**.** An m-learning survey in UK's schools and higher education points to the fact that young adults (16-24 years) are switching onto learning by mobile phones and Personal Digital Assistants (PDAs) (Mitchell & Savill-Smith, 2004). In a study conducted (Suki & Suki, 2010) in University Industri Selangor (Unisel), Malaysia, majority of the students who participated in the study agreed that the mobility of the mobile phone was a key factor for the use of mobile technology as the medium for learning. The study further highlights interactivity nature of mobile technology whereby students and lecturers are able to share their learning tasks and other related activities which was found to be one of the reasons that informed their usage of mobile devices in learning (Suki & Suki, 2010).

Tan and Lui (2004) conducted a research based on a developed Mobile Learning System (MLS) to assist learning of English language in an elementary school in Taiwan. The focus of the research was to explore the applicability and benefits of mobile technology to elementary school English learning activities in Taiwan. Experimental results obtained indicated that the effect of learning English using MLS is better than that of the traditional manner. Most students according to the study prefer using MLS since it is easy to use and can increase learning interest (Tan & Liu, 2004). Another research conducted by (Al-Said, 2015) revealed that undergraduate students at Taibah University in Saudi Arabia have positive perceptions towards mobile learning. The students were of the view that the use of mobile learning will facilitate and increase effective communication of learning and allow them to learn at the right time (Al-Said, 2015).

The discussions above indicate several advantages with regards to the use of mobile phones for learning. Attewell (2005) summarizes some of the advantages as follows:

- allows truly anywhere, anytime, personalised learning;
- can be used to enliven, or add variety to, conventional lessons or courses;
- can be used to remove some of the formality which non-traditional learners may find unattractive or frightening and can make learning fun;
- facilitates both individual and collaborative learning experiences;
- enables discrete learning in the sensitive area of literacy;
- has been observed to help young disconnected learners to remain more focused for longer periods;

- can help to raise self-confidence and self-esteem by recognising uncelebrated skills, enabling non-threatening, personalised learning experiences and enabling peer-to-peer learning and support.

Undoubtedly, mobile phone usage among tertiary students has the potential of aiding mobile learning. In view of this the paper posits that students' perception of mobile learning is critical in determining the future usage of mobile learning in tertiary institutions especially in Ghana.

THEORETICAL PERSPECTIVES OF MOBILE LEARNING

Social constructivism is one of the several pedagogical principles that underpin the concept of mobile learning. It is an educational theory that proposes that knowledge is constructed by individuals based on their own prior experiences in a particular context (Honebein, Duffy, & Fishman, 1993). According to (Mifsud, 2003), whose work is similar to a prior work by (Soloway, Norris, Blumenfeld, Fishman, & Marx, 2001), flexible access to handheld technology such as mobile device will provide the tools to help learners construct knowledge throughout their daily activities, thereby making this technology an integral part of daily learning. A simulation game which enables learning to take place in a simulation environment was developed by (Colella, 2000). Students participating in the game become agents in the simulation. They gathered evidence, define the problem at hand and set and test hypotheses about the rules of the simulation environment. They learned from experience and develop solutions to the problems they encountered (Colella, 2000).

Situated learning focuses on activities that promote learning within an authentic context and culture (Herrington & Herrington, 2007). A research work conducted by (Rogers, et al., 2002) based on situated learning theory created an authentic ambient wood environment which enabled children using Personal Digital Assistant (PDA) and probing device to learn, discover, reflect and experiment in the environment. Collaborative learning is a learning situation, which involves two or more people that learn something together (Dillenbourg, 1999). A Mobile Computer Supported Collaborative Learning (MCSCL) system based on collaborative learning theory to support student collaboration was developed by (Cortez, et al., 2004). The MCSCL provided an enabling collaborative class environment that help students to participate in a task (Cortez, et al., 2004).

An activity involves the relationship between a subject or an actor and the object mediated by a tool. A tool is used in the transformation process to transform the object into an outcome (Kuutti, 1996). Furthermore, rules, community and division of labour are included in activity theory. Mobile technologies are perceived as mediating tools that support mobile learning activities (Uden, 2007). An m-learning system for learners' knowledge management was developed by (Liaw, Hatala, & Huang, 2010). The developed system that was based on activity theory enables learners to search, retrieve, share, manage and create their own knowledge (Liaw, Hatala, & Huang, 2010).

RESEARCH METHODOLOGY

The study was limited to only campus-based undergraduate students of the University of Cape Coast (UCC) totaling 20,410 as at 2017. Stratified sampling was used to group students into faculty/school then simple random sampling was employed. The strata compose of the various faculties and schools in the University of Cape Coast. 700 paper-based questionnaires with 66 question items each were distributed. 600 filled-questionnaires were returned indicating response rate of 85.7%.

The Descriptive Research design was used in this study involving the collection of data to answer questions concerning the possibility of using m-learning in UCC in immediate future. The data was analyzed using the Statistical Package for Social Science (SPSS) Version 25 based on percentage and frequency distributions. The background data of the respondents are show in Table 1.

Table 1: Bio-Data

Items		Frequency	Percentage
Gender			
	Male	372	62.0
	Female	228	38.0
Programme Level			
	100	118	19.7
	200	88	14.7
	300	194	32.3
	400	200	33.3
Total		600	100.00

Source: Field Survey, 2017

The study was limited to only undergraduate students in UCC. As clearly indicated in Table 1, 62% and 38% represent males and females respectively with most (33.3%) of the respondents in their final year of study (i.e. level 400).

FINDINGS AND DISCUSSIONS

Table 2: Mobile Technology use and users' type

Items	Category	Frequency	Percentage
Type of Mobile Device			
	Smartphone	393	65.5
	Tablet PC	190	31.7
	iPad	17	2.8
Types of Mobile users			
	Pioneer	348	58.0
	Wannabe	92	15.3
	Traditionalist	160	26.7
Total		600	100.0

Source: Field Survey, 2017

According to Asuamah (2013) most students at the higher education use mobile device. Wilhem (2012) also emphasized that students are the highest consumer of smart devices. The studies of Asuamah and Welhem affirms what this study also revealed. Based on the total respondents used in the studies. All the respondents were using some type of smart devices. Yankov & Magee (2011) stated that students spent most of their time with smart devices because of its portability, flexibility and easy adaptability to new applications. Table 2 displayed the typed of mobile devices used by students. Students who used smartphones were more than those who were using other types of mobile devices, that is 65.5% of the total population were using Smartphone. Tablet PC users were 31.7% whiles iPad had the least 2.8%. Cavanagh (2015) studies proved otherwise where most students (high school, middle school and elementary school) were using laptops and Tablet PC to learn and few were using Smartphones. Again, most students 58.0% were Pioneer users of mobile devices and Wannabe users were 15.3% whilst Traditionalist users were 26.7% constituting the second mobile device users.

Table 3: Mobile Technology use and users' type

Items	Category	Frequency	Percentage
M-learning Awareness			
	Yes	423	70.5
	No	177	29.5
Use of mobile devices at lectures			
	Yes	54	9.0
	No	546	91.0
Adaptation of M-learning by UCC			
	Yes	400	66.7
	No	200	33.3
Total		600	100.0

Source: Field Survey, 2017

Table 3 further indicated that 70% of the students had some knowledge on m-learning. Yet 91.0% were not using mobile devices at lectures. Above all, students were adaptive to Mobile learning. According to Owusu-Acheaw and Larson (2015) majority of the respondents had mobile phones which also had Internet facility on them and had knowledge of the existence of many media sites but were not accepted to be used by most high schools in Ghana. Kolog, Tweneboah,, Devine and Adusei (2018) also attested that students were disallowed to use mobile devices while in school.

Table 4: Skills in the use of Mobile technology among students (Easiness of Use)

Statement	Skilled	Cannot Measure	Never Used	Means	StDev.
Sending text / SMS	584(97.3%)	16(2.7%)	0	3.0	0.16
Participating in social media	526(97.3%)	10(1.7%)	6(1.0%)	3.0	0.24
Downloading games, music or applications	536(89.3%)	10(1.7%)	54(9.0%)	2.8	0.58
Playing games	558(93.0%)	16(2.7%)	26(4.3%)	2.9	0.43
Sending pictures or movies to other people	490(81.7%)	20(3.3%)	90(15.0%)	2.7	0.72
Using Bluetooth/Infra-Red to transfer files	556(92.6%)	10(1.7%)	34(5.7%)	2.9	0.48
Playing music on the Internet	442(73.8%)	12(2.0%)	146(24.3%)	2.5	0.86
Listening to the radio	566(94.3%)	12(2.0%)	22(3.7%)	2.9	0.40
Searching for information on the web	566(94.3%)	6(1.0%)	28(4.7%)	2.9	0.43
Taking digital photos/videos	548(91.3%)	16(2.7%)	36(6.0%)	2.9	0.5
Sending or receiving email	496(82.6%)	16(2.7%)	88(14.7%)	2.7	0.71
Composite Mean				2.8	

Source: Field Survey, 2017 (Never Used = 1, Cannot Measure = 2, Skilled = 3)

In the study of Ishak, Ismail & Yazam (2013) revealed that most students use social media for the purposes such as searching for information, communicating with friends/families, keeping in touch with friends/families, entertainment, and completing the assignment task. The current study revealed that 526 (97.3%) (m=3.0: SD= 0.24) have skills in social media, in order words spent more time on social media and show their technological usage of mobile devices. Student were also seen to use the mobile devices to send files, pictures, movies through Bluetooth and WiFi, constituting 556(92.6%) ((m=2.9: SD= 0.48) of the entire population. Ezeah, Asogwa, & Obiorah (2013) & Ishak et al. (2013) in both studies showed that students use their mobile devices in searching for information on the web. Notably, the study also attests that most students 566(94.3%) (m=2.9: SD= 0.43) use mobile devices to search for information on the web. However, Ezeah et al. (2013) findings confute that

students were using social media most often for the purpose of getting entertainment and engaging in cyber-crimes and expose themselves to pornography and apparently reduces the time they devote to their studies.

Lastly, most students used their mobile devices to send and receive emails, making up 496(82.6%) (m=2.7: SD= 0.71) of the respondents. Owusu-Acheaw and Larson (2015) confirmed that most of the students visit their social media sites using their phones and spend between thirty minutes to three hours per day. In sum, regarding respondents' skills in the use of Mobile technology produced an overall mean of 2.8. This implies that almost all the respondents had the requisite skills in the use of mobile technology. This finding made by the researchers corroborates the findings of (Suki & Suki, 2010) whereby the interactivity nature of mobile technology influences adoption of m-learning.

Table 5: Students' Perception on the Potentials of Mobile Learning (M-learning)

Statements	Agree	Uncertain	Disagree	Mean	StDev.
I enjoy learning with the mobile device	556(92.7%)	32(5.3%)	12(2.0%)	2.9	0.35
I could do self-tutorial with mobile device	446(74.3%)	80(13.3%)	74(12.3%)	2.6	0.69
I feel insecure about inability to use ICT	240(40.0%)	76(12.7%)	284(47.3%)	2.1	0.93
I can quickly adopt to new technology	514(85.6%)	54(9.0%)	32(5.3%)	2.8	0.51
I can use mobile device to perform any task	474(79.0%)	90(15.0%)	36(6.0%)	2.7	0.56
I can solve problem using mobile device	372(62.0%)	104(17.3%)	124(20.7%)	2.4	0.81
I am in complete control when using mobile device	400(66.7%)	98(16.3%)	102(17.0%)	2.5	0.77
I find mobile device difficult to use for learning	112(18.6%)	54(9.0%)	434(72.4%)	2.5	0.79
I do not enjoy learning with mobile device	82(13.7%)	36(6.0%)	482(80.3%)	2.7	0.70
ICT frustrates me	66(11.0%)	62(10.3%)	472(78.7%)	2.7	0.66
Composite mean				2.6	

Source: Field Survey, 2017 (Agree = 3, Uncertain = 2, Disagree = 1)

Table 5 shows the perceptions students have towards the use of Mobile learning. It was revealed that most students 556(92.7%) (m=2.9: SD= 0.35) enjoyed learning with their mobile devices. Guma, Businge, Nkamwesiga and Andogah (2017) findings showed that students use mobile devices to access course materials, doing class work, send and receive e-mails and taking and sharing of notes but virtual classroom, discussion forums and using pre-recorded lecturers with PowerPoint. 446(74.3%) (m=2.6: SD=0.69) of the respondent could use mobile device for self-tutorials. A study of students in Guangzhou by Wong (2014) showed that searching and learning were the most activities used by students when they are with their mobile devices. 474(79.0%) (m=2.7: SD=0.59) of the respondents stated that they can use their mobile device to perform any task whiles 372(62.0%) (m=2.4: SD=0.81) can solve problems with it. Above all, most student 434(72.4%) (m=2.5: SD=0.79) did not find it difficult learning with mobile devices and 482(80.3%) (m=2.7: SD=0.70) enjoyed learning with it. No wonder Ali (2017) results showed that some students are already using mobile devices to support their learning process. Ali (2017) one of the keen reasons why student enjoyed using mobile devices is that, the can-do variety of activities with it and are not limited, motivating them all type of learning style behaviour.

Table 6: Students Learning Characteristics (Adaptation to M-Learning)

Student's Learning Characteristics	Agree	Undecided	Disagree	Mean	StDev.
I enjoy trying hands on difficult problems	376(62.7%)	68(11.3%)	156(26.0%)	2.4	0.87
I prefer to discover things	554(92.3%)	42(7.0%)	46(0.7%)	2.9	0.30
I enjoy tackling problems that are completely new	436(72.9%)	82(13.7%)	80(13.3%)	2.6	0.72
I am eager to learn new information	548(91.3%)	22(3.7%)	30(5.0%)	2.9	0.47
I am disciplined	550(92.0%)	34(5.7%)	14(2.7%)	2.9	0.39
I enjoy learning new information	554(92.3%)	24(4.0%)	22(3.7%)	2.9	0.42
I have a need to learn	538(90.0%)	36(6.0%)	24(4.3%)	2.9	0.46
I enjoy studying	560(93.6%)	30(5.0%)	8(1.7%)	2.9	0.33
Composite mean				2.8	

Source: Field Survey, 2017 (Agree = 3, Undecided = 2, Disagree = 1)

The researcher intended to know the students learning characteristics. In table 6 majority 548(91.3%) (m=2.9: SD=0.47of the students were eager to learn new information, 550(92.0%) (m=2.9: SD=0.39) were disciplined, have the need to learn and 554(92.3%) (m=2.9: SD=0.42) enjoyed learning and studying with mobile device. The statistics in table for affirms Mockus, Dawson, Edel-Malizia, Shaffer, Sung An & Swaggerty (2011) finding where mobile device made learning more flexible and convenient for the student.

Table 7: Perception of Mobile Learning (ML)

Statements	Agree	Undecided	Disagree	Mean	StDev.
MT enables access to learning content more quickly	542(90.3%)	0	58(9.7%)	2.8	0.59
MT enables access to learning content more often	544(90.7%)	0	56(9.3%)	2.8	0.58
Using mobile device prolong tasks	248(41.4%)	72(12.0%)	280(46.6%)	1.9	0.94
Using mobile device will support learning	480(80.0%)	56(9.3%)	64(10.7%)	2.7	0.65
Using MT for learning is a good idea	534(89.0%)	46(7.7%)	20(3.3%)	2.9	0.44
It is okay if MT was a required component of studies	422(70.4%)	84(14.0%)	94(15.6%)	2.5	0.75
Adopting mobile learning in future will be perfect	538(89.7%)	36(6.0%)	26(4.3%)	2.9	0.46
Students need knowledge to use mobile device for learning	470(78.4%)	72(12.0%)	58(9.6%)	2.7	0.64
M-learning would not be compatible with students' learning	218(36.4%)	122(20.3%)	260(43.3%)	1.9	0.89
Students would be willing to use MT if supported	502(83.6%)	52(8.7%)	46(7.7%)	2.8	0.58
Composite mean				2.6	

Source: Field Survey, 2017 (Agree = 3, Undecided = 2, Disagree = 1)

Table 7 shows respondent's perception of mobile learning. The study revealed that most student 542(90.3%) (m=2.8: SD=0.59) perceived to have quick access to learning content once using mobile technology, 480(80.0%) (m=2.7: SD=0.65) also said that the use of mobile technology would support their learning. Most student 534(89.0%) (m=2.9: SD=0.44) find it a good idea to use mobile technology in learning. Despite the above warming need for mobile technology, 470(78.4%) (m=2.7: SD=0.64) of the students required knowledge in using mobile device when learning. With this, 218(36.4%) (m=1.9: SD=0.89) perceived that mobile learning would not be compatible with students' learning, yet 502(83.6%) (m=2.8: SD=0.58) are willing to use M learning if mobile learning will be compatible. This reason of incompatibility and difficulty learning with was raised by Chang, Lee, Lin, Cheng (2013) that mobile device users frequently would be distracted by social

media updates and messages, which pops up on your screen instantly. In totality, the composite mean of 2.6 showed that students agreed with most of the assertions stated in Table 7.

Table 8: Perceived Usefulness in using Mobile Technology (MT) in learning

Statements	Agree	Undecided	Disagree	Mean	StDev.
Mobile technology (MT) is useful in learning	550(91.6%)	0	50(8.4%)	2.8	0.55
Taking a mobile-supported course ensures time consciousness	486(81.0%)	72(12.0%)	42(7.0%)	2.7	0.58
It is convenient to access learning content via a mobile device than over using a computer	400(66.7%)	88(14.7%)	112(18.6%)	2.5	0.79
It will take a while to get comfortable with using a mobile device for learning	304(50.7%)	72(12.0%)	224(37.3%)	2.1	0.93
MT will make learning more interesting	548(91.3%)	0	52(8.7%)	2.8	0.56
Learning with the mobile technology will be fun	508(84.7%)	68(11.3%)	24(4.0%)	2.8	0.49
Currently MT and the associated services are too expensive	446(74.7%)	58(9.3%)	96(16.0%)	2.6	0.75
Overall benefits of mobile learning are good.	542(90.4%)	38(6.3%)	20(3.3%)	2.9	0.42
M-learning means learning anywhere at anytime	464(77.4%)	48(8.0%)	88(14.6%)	2.6	0.73
Composite mean				2.6	

Source: Field Survey, 2017 (Agree = 3, Undecided = 2, Disagree = 1)

It is obvious from table 8 looking at the composite mean of 2.6, students agreed to the statement above. This also shows that using mobile Technology is perceived to be useful for learning. Evaluating the composite mean 550(91.6%) (m=2.8: SD=0.55) of the students perceive Mobile Technology as useful in learning, 400(66.7%) (m=2.5: SD=0.79) would had convenience when accessing learning content via a mobile device than over using a computer, 224(37.3%) (m=2.1: SD=0.93) disagreed with the assertion that "It will take a while to get comfortable with using a mobile device for learning" leaving 304(50.7%) students who perceived that it would take a while before becoming comfortable using mobile device in learning. Despite the discomfort, 548(91.3%) (m=2.8: SD=0.56) and 508(84.7%) (m=2.8: SD=0.49) student see it interesting and fun learning with Mobile Technology respectively. Currently, majority of the student 446(74.7%) (m=2.6: SD=0.75) perceive MT and the associated services too expensive. However, greater number of students 464(77.4%) (m=2.6: SD=0.73) can learn anywhere due to the avenue of Mobile Technology. This avenue to Mwapwele and Roodt, (2016) assist students to a better extent in understanding concepts, in communicating to one another, in searching for information on the internet, and equipping them with skills they can employ for lifelong learning.

Table 9: Interest of Students on Mobile Device Usage to Perform some Activities

Activities	Interested	Fairly Interested	Not Interested	Mean	StDev.
SMS notifications for results, change of venue/time for class	526(87.7%)	52(8.7%)	22(3.7%)	2.8	0.46
To write mobile quizzes	334(55.6%)	120(20.0%)	146(24.3%)	2.3	0.84
Mobile blogging	384(64.0%)	138(23.0%)	78(13.0%)	2.5	0.71
To view lecture slides or readings	402(67.0%)	142(23.7%)	56(9.3%)	2.6	0.66
To download and view lecture recordings as audio or video (podcasting)	458(76.3%)	132(22.0%)	10(1.7%)	2.7	0.47
Checking results	522(87.0%)	52(8.7%)	26(4.3%)	2.8	0.48
To download and play mobile educational game	484(80.7%)	110(18.3%)	6(1.0%)	2.8	0.43
To take lecture notes during lectures	418(69.7%)	102(17.0%)	80(13.3%)	2.6	0.72
SMS notifications for assignment submission deadlines	532(88.7%)	38(6.3%)	30(5.0%)	2.8	0.49
Composite mean				2.7	

Source: Field Survey, 2017 (Interested = 3, Fairly Interested = 2, Not Interested = 3)

Table 9 shows what students would be interested to them in their usage of mobile device. It was seen that 334(55.6%) were interested in using mobile device to write quizzes, 120(20.0%) would be fairly interested whiles 146(24.3%) were not interested in using mobile device to write quizzes, emerging with total mean 2.3 and SD of 0.84. Again, 384(64.0%) (m=2.5: SD=0.71) were interested in mobile blogging, 402(67.0%) (m=2.6: SD=0.66) were interested in viewing lecture slides or readings with mobile device, 458(76.3%) (m=2.7: SD=0.47) were also interested in downloading and viewing lecture recordings as audio or video (podcasting) with mobile device. Most students 522(87.0%) (m=2.8: SD=0.48) would be interested in checking their results with mobile device. To download and play mobile educational game, 484(80.7%) (m=2.8: SD=0.43) students would be interested in using mobile device for it. Taking lecture notes a priority to all students. It was seen that 418(69.7%) (m=2.6: SD=0.72) students would use mobile device to take lecture notes during lectures and lastly majority of the population 532(88.7%) (m=2.8: SD=0.49) were interested in using mobile device to send SMS notifications for assignment submission deadlines. According to Ker, Lim, Low, Patanmacia, and Ting (2011) mobile devices have internet access, which allow the user to have access to many things including emails, instant messages and social media. In all the composite mean of 2.7 showed that students would be interested in the above listed purpose when using mobile device in school.

CONCLUSION

The results show that majority of students have good knowledge of the use of mobile devices as significant number of them use advanced features of their mobile devices frequently and are keen and optimistic about the use of m-learning. Majority of the students from the study are strongly and willing to adopt m-learning because they believe it would enhance their learning. Findings from the study have practical implications in developing and deploying an m-learning system for students. The university could deploy SMS notifications for activities among which are reminding students when the due date of assignments or borrowed books are at hand or to announce important live events such as writing of quizzes or exams. In developing an m-learning system, key activities such as SMS notifications for results, change of venue/time for class and downloading and viewing lecture recordings as audio or video (podcasting) should be considered by the developers.

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THE COMPLEXITIES OF DISTANCE EDUCATION, ONLINE LEARNING AND USE OF TECHNOLOGY IN LEARNER SUPPORT SERVICES

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ABSTRACT
This article examines the complexities of Distance Education, online learning and Use of Technology in Learner Support Service in higher education in Kenya**.** Learning at higher education has gone though several changes since the invention of new technologies which can be used to enhance teaching and learning. In the field of education in both developed and developing countries, the impact of technology is being felt from the learners, teachers and community perspective. Distance education which has been used for ages in various higher institutions of learning changed a lot in its mode of delivery because of the use of various technologies. Since then, institutions have embarked on online learning which uses technology more. The paper tries to identify varies type of support services which are offered by distance learning and how technology has created an impact on the services and how the education provides view technology in education. Tutorials and pedagogy are some of the key support services in the distance learning programmes. The findings of the study also indicated that lecturers were ready to adopt and use technology in course delivery as it is capable of improving the quality of teaching by distance and in online platform and also is capable of improving their interaction with the learners. The major conclusions of the study was that technology if fully integrated in the teaching and learning process, will have benefits in access to education, cost reduction, improved syllabus coverage and good leaner and tutor interaction amongst others.
Key words: distance education, information and communication technologies, teaching, pedagogy, student support services

1.0 Introduction

Education institutions are changing to new method of teaching and leaner support services. Many institutions which are using distance education are now forced to conform and use technology in their delivery. Kember (1990) noted that many students who are new in tertiary study are faced with the need to learn new conventions and recognize quite different conceptions of knowledge. This type of knowledge will be useful as they embark further in their studies. The role of universities in assisting new students is to take the leaners through a good orientation process to enable them understand how the university courses can be offered in different modes and the services available to all leaners.

Many changes have taken place in education but some concepts still remain the same. One of this is distance education which online learning borrows a lot from. According to Stella and Gnanam (2004):

Traditional campus based education is no longer the only mainstream delivery mode. Due to technological developments the last two decades has seen a significant increase in different forms of education and new education providers that have a global impact. They include a wide range of provisions that overlap, notably Distance Education programs that are delivered through satellites, computers, correspondence or other technological means across national boundaries twinning arrangements… pp 143.
According to Larreamendy-Joerns and Leinhardt (2006) they make a connection between the history of distance education and contemporary online education because the visionary promises and concerns that many current educators claim as novel actually have a past, one whose themes signal both continuities and ruptures. In essence, the genealogy of distance education can be traced form various perspectives one of them being the fact that:

The history of distance education constitutes not only a repository of experience with heuristic value but also the frame within which community of educators and the public at large may make sense of online initiatives (Larreamendy-Joerns and Leinhardt (2006)pp. 568

Keegan (1996) denotes that, despite the changes in distance education, its core features separation of instructor and learners, and the use of technology to enable communication between instructor and learner remain the same. Although many alternative terms like online learning, E-learning, mobile learning, and others are being used, definition of distance education still and others like online learning still varies in scope and critical

features(Holmberg,1986).He further noted that, distance education includes the various forms of study at all levels which are not under the continuous, immediate supervision of tutors present with their students in lecture rooms or on the same premises, but which nevertheless, benefit from the planning, guidance and tuition of a tutorial organization.

Online education forms the backbone of modern learning but it is still not equally practiced in most countries especially in developing countries where access to education for all citizens is still a challenge. However, it is advisable that in all circumstances, there is need for universities to closely examine their capabilities and capacity of their institution before overhauling the mode of delivery which has been in existing for some times. These arguments are predicated on a general assumption that students coming into universities have had a comparatively universal and uniform digital upbringing (Gregor et al.2008). It is assumed that the technological experiences of students are more or less homogeneous and that most, if not all, incoming university students are Digital Natives (ibid). It cannot be assumed that all students joining university at the same time have the same experiences in use of technology because of their various social and economic backgrounds, previous schooling locations and exposure to technology hence the need to treat each student differently in respect to use of technology in education.

In Kenya, the first government report which recommended other ways of acquiring higher education was the Ominde Report of 1964/65.It recommended the introduction of degree courses to be undertaken at the University College, Nairobi as part–time studies supplemented by short residential sessions. The Kenya National Development plans of 1966 and 1970) proposed the establishment of the external degree program. While according to Republic of Kenya Report (1999), the massive expansion of technology and the need to keep a breast of it was recognized .Since then various institutions have started distance learning programmes in a way to meet the needs of various cadre of their clientele.

2.0 Changing Trends in distance education

Distance learning (DL) is not a new mode of delivery as it has been there for several years. In England, correspondence courses have existed as early as the 1840s. In the United States of America(USA)the University of Chicago is noted to have established a correspondence course unit by 1890s (Bates, 2004). At the University of British Columbia, where distance education has been since 1949, more than 105 courses are offered through this mode (University of British Columbia, 1998b). The revamped transformation in delivery and administrative structure in offering distance education has taken a major toll in most higher education institutions as they strive to use more Information, communication and technology (ICT) in supporting the learning process. Another successful distance program was realized in the Northern Virginia Community College which has matured as an American community college. Composed of five campuses, plus the extended learning institute, it serves the Virginia suburbs of Washington, DC. Its students come from Urban, suburban, and rural communities, covering every possible socio-economic and cultural group. The college enrolls over 59,000 different students a year (almost 21,000 fulltime equivalent students), with distance education being approximately 5% of the total college enrolment. A number of factors led to NVCC's ability to develop its distance education program into the large and diversified one that exists today. Some were the result of carefully planned strategies. Others were fortuitous accidents, unexpected outcomes, or pure luck that became part of the institutions' overall distance education strategy. The early years of distance education at NVCC had a strong instructional development focus *(*Haney, Lange, & Barson, 1968).

The way education is being offered to learners especially in universities have had a trajectory path with various universities developing various strategies of attracting students into their programmes. This has also been the case in distance education programmes whereby more universities are now using technological devices than before. Some of the old providers of distance education like The Open University of United Kingdom (OUUK) provide programmes to several undergraduate and postgraduate students wherever they are hence meeting the needs of global education. In India, the same scenario is replicated at Indira Gandhi National Open University (IGNOU) which also has millions of students underrating various courses in different parts of the world.

Distance education is also available in African Universities .In Kenya for instance, the university of Nairobi has been offering distance education especially the bachelor of education Arts programme has been in existence for over 30 years but prior to that, the university was offering short correspondence courses to deserving individuals who needed to develop various competency based skills. Kenyatta University in Kenya and other universities have also been meeting the needs of various students by offering distance learning programmes using various modes of delivery. One common characteristics of this distance learning programmes is that the various institutions have integrated technology in the services offered to students hence it is not the old distance education of pen and paper under brick walls.

Schwab (1962) examined the history of distance education in three major themes: democratization, liberal education and instructional quality. Democratization here means the increasing either access to higher education of the population that would be otherwise excluded, or increasing the range of people who might be served by the elite intuitions, liberal education in this case refers to education which is broad, deep, and philosophically anchored to sense of purpose and general utility as it attempts to shape a person's critical and analytic competencies with respect to disciplinary knowledge. And instructional quality refers to concerns and considerations about the effectiveness of teaching or instructional environments in the light of particular learning goals and educational standards. This history supports the progress of distance education as it moves to integrate more technology in its delivery.

The changes in distance education have had impact on the students, the distance education providers and other education stakeholders. 'Tried and true' print; audiotape and videotape materials, telephone communication and 'snail mail' are now enhanced by interactive technologies such as electronic mail and computer-mediated conferencing, making web-based instruction feasible for large numbers of people *(*Keegan, 1996; Khan, 1997). With the integration of emerging technologies, leaner support services have also improved as noted by Bates (2004) and Keegan (1996) who stated that new technology connects learners and instructors wherever they may be for example, home or work, provides opportunities for cross-cultural discussion and collaborative project work, and enables learners to control when and where learning occurs.

Distance education enhances access to learning which is realized even at the University of Nairobi. This was confirmed by the records at the School of Continuing and Distance Education (SCDE, 2014) where student's population especially in the department of educational Studies has been at a round figure of about six hundred students per intake which is among one of the highest intakes at the University of Nairobi. SCDE has consistently offered the bachelor of education programme for a period of over 30 years through the distance mode using the Print media, cassettes, face to face tuition during the school holidays and other support services received by the students during their home study at the Extra Mural centres located in every County in Kenya. This trend has changed and the programme has since enhanced the learner support services through use of more ICT services in learner support services like library, tutorials, administrative services, examination management and other aspects of the course.

3.0 Effects of Technology on distance education instructional design

Various schools of thought believe that offering distance education in a more modern way with use of emerging devices can have an impact in the oldest mode of education delivery.

s old mode of delivery. Navarro et al. (2000) noted that the multimedia design of distance courses can enhance student learning and comprehension. While Sosin(1997) indicated that from an administrative position, online courses offer the opportunity to reach a large number of nontraditional or under-served audiences and afford greater flexibility in scheduling classes. These sentiments support the current status of distance education which has since then proved to be flexible as it takes leaner's from different backgrounds who then take the various courses wherever they are through use of technology and other enhanced leaner support services. Navarro (2000) noted the current trend in distance education and stated that'

'Today, most distance courses use digitized lectures, audio supplementation, discussion boards, and interactive software to incorporate the active use of writing, problem analysis, and collaborative learning'.

In its offer, distance education is as good as face teaching since it takes into account all the processes of effective learning and quality control measures. The opportunities that computer-mediated conferencing affords for collaborative, case-based and problem-based learning, as well as self-directed learning (*Grow, 1991; Bridges, 1992; Dede, 1996*). Szabo (1998) noted that, distance education enhances access to learning and can increase learning efficiency and achievement. While Threlkeld and Brzoska, *1994)* stated that *distance* education can be at least as effective as face-to-face education .

Students support services are changing everyday as new ideas and concepts come into play. Because of the separation, the learning experiences are conveyed mainly through a learning package coupled with various forms of human support mechanism. A learning package or course or training material may consist of the printed text and other media and materials which are supported by trainers, tutors, facilitators and counsellors (Rowntree, 1991).

As institutions change their distance education delivery strategies, it is believed that the potential of electronic device to change the way education is being offered in higher education is still a priority area. Several

methodologies are available for developing and delivering distance programs in various higher institutions and each has different attributes and characteristics. Various technological devices like CD-ROMs though updated, pen drives are capable are storing large volumes of information but the trend has since then changed and they are new ways of storage online storage like online storage apps, online storage google, auctions and many more are currently in use more than the old ones.

4.0 Different modes of distance education and benefits

Obonyo-Diglolo (2009) in his study indicated that pedagogy in Kenya initially was conducted using two modes of delivery, namely the conventional and the distance teaching modes. This has since then changed and more innovative approaches are developed for use in education. Conventional teaching refers to the delivery of lesson to leaners assembled in front of a teacher. Appelberg (1997) noted that, distance learning as a choice for non traditional older students as well as for practicing professionals is on the increase. Concurrently, demands for instruction to meet needs in the rapidly changing workplace (Adi, 2002) and advances in technology and offer both virtual and real-time two way interactive teaching and learning (Alvarez et al, 1998) have combined to make distributed learning environments both necessary and possible. Additionally, increasing demands on available on-site resources for education make distance learning (DL) appealing for major institutions of higher education. A further challenge for institutions is to select and support technology to deliver distributed learning instruction.

According to Bates(1995) and Keegan(1996),the various technologies in education connects learners and instructors wherever they may be for example, home or work, provides for control when and where learning occurs. Depending on the degree of standardizations of course and delivery methods, online learning may ensure consistency in content and process. Distance education at basic level is considered to takes place when a teacher and student's physical distance is bridged by technology for example voice, video data and print to close the instructional gap (Johnson, 2002). These types of programs are believed can give a second chance to college education, as it can enable those disadvantaged by limited time, finances or disability to update their knowledge base (Juma, 2004). Distance education continues to grow with more colleges offering courses and programs while experiencing increased student enrollment

Distance education since its inception has served the needs of leaners with differ requirements and in different geographical locations but though face to face or through technology. Africa is one continent which has all the reasons to enhance distance education and online learning because of the various challenges realized in the education sector. Barrow(2004) notes that the continent is characterized by underdevelopment, poverty, increasing student population, financing of higher education and even unavailability of technology.

With the proliferation of many devices for learning and teaching purposes, many institutions need to take advantage of their presence .For instance, multi-media, CD-ROM, mobile phones, laptops, ipads te represent a significant wave in educational technology which if well exploited for academic purposes, can create an impact in the education system offered in developing countries especially where the education challenges are pronounced. Chute et al. (1999) asserted that, distance education offers an increased clientele base, improved services for students and more efficient use of existing facilities.

Papcharis et al. (2000) were able to report the results of a meta-analysis of 122 separate studies that compared individual with group learning with technology for various age groups. These authors found that learning in pairs was slightly more effective than learning individually despite the fact that there were differences according to: How the groups were composed that is Mixed-ability pairs did better than similar ability ones; secondly. The difficulty of the task showed that groups did better than individuals on more difficult tasks; thirdly, the nature of task that learners performed on closed than on open-ended tasks; and finally , on the gender, same-sex pairs did better than mixed-sex ones.

5.0 Research Methodology

The study was conducted at the University of Nairobi Kenya starting the period 2015 and ending 2017. Survey design was used and the study targeted students who were enrolled in distance education programme, their tutors, ICT and administrative staff. Stratified sampling was used in selecting students and administrators targeted for the study while random sampling was used for selecting lecturers and ICT staff. Questionnaires and interview schedules were used to generate information from the target respondents. Tutorials were one of the major variables of the study in this research. It covered the aspect of teaching and the learning process. The leaner support centres outside Nairobi were also targeted in the study since they give an overview of the support services available outside Nairobi for the learners and especially on how technology is being used to serve the leaners better and ensure quality in the programme.

6.0 Findings on technology use in distance education

The study realized that, readiness to adoption ICT for teaching and administrative services is quite high as 77.7% of the lecturers out of the 45 who answered the questionnaires indicating their willingness to adopt to technology. While among the student respondents, the students' responses, the most highly rated elements of quality of teaching was the components where technology has been integrated and indicated good results were like administration of term papers, continuous assessment tests and release of examination results, processing of transcripts using ICT and access to information by students wherever they are. This study supports a study carried out by Gakuu (2007) which noted that, as instructors get more familiar with DE, and as their level of experience increases, the rate of adoption is bound to increase.

The respondents especially lecturer's preference of face to face teaching was still 50% as some lecturers still prefer face to face teaching against use of modern technology.

There was an urgent need to have more ICT enhanced services at the extra mural centres which are the key learner support services points at the University of Nairobi for the DE program. This will ensure relevance of information to the students by their tutors and even access to relevant study materials.

Mobile phone services by lecturers was one of the technologies which was mostly used because it is affordable, available amongst the students, faster and easier to use and the cost of using it to send short message services (SMS) is quite affordable even to the students.

Quality of teaching realized a mean grade rating of 4.1679 with a standard deviation of only 0.3840 by the students. This was an indication that the students rated technology mediated teaching process highly and same with the ICT staff.

The lecturers also agreed that some technologies like computers, internet browsing, use of LCD and other portable electronic devices should be integrated in the teaching and use by the lecturers. The study also found out that support services which are technology enhanced are very critical to distance program as it makes their course more affordable and appealing to those who are working or engaged with other activities.

Portable technologies like mobile phone were found to be popular among the students, lecturers and ICT staff. This could be because they are easily available, affordability and the quality services they offer to the user.

Distance education and online learning offers universities administrators the ability to democratize and decentralize education and offer courses in various geographical settings in a region. The respondents in this study indicated that learning using technologies is good but various measures have to be put in place to ensure that all learners are having available devices so that they are not disadvantaged in one way or the other.

For four persons with disabilities (PWDs) students who were respondents in this study, they indicated that online learning and distance education using various technologies could be suitable for them as it will give them a chance to have individualized learning without much movement and interference, they can assess materials online, interactive with other learners freely and be motivated to learn hence the concept of flexibility was also realized among the PWDs.

The respondents indicated that, distance education and online courses can take care of limited space which is realized at the university, Students using more technology in their learning will not require much physical space hence the university can utilize the available space for other activities like for use by conventional studies or for hire. The other aspect of flexibility of distance education and online learner was the fact that it permits students to study wherever they are despite any disruptions which can occur during the semester sessions. This is because he students are not physically present on campus to be affected by the disruptions.

Electronic mobile devices like ipads, laptops, and mobile phones among others were the ones the respondents indicated should be sourced more for the distance programme. Both students and lecturers prefer handling academic issues using their mobile devices.

In terms of quality of teaching, the university may benefit greatly or lose out if the level of ICT integration is not given adequate consideration. Students respondents who dot reside in Nairobi indicated that they do not have ICT infrastructure in the centres where the university has satellite Campuses. The students use internet services to get their reading materials and also do their independent study.

7.0 Discussions

In the students' responses, the most highly rated elements of quality of teaching was the components where technology has been integrated and indicated good results were like administration of term papers, continuous assessment tests and release of examination results, processing of transcripts using ICT and access to information by students wherever they are. This study supports a study carried out by Gakuu (2007) which noted that, as instructors get more familiar with DE, and as their level of experience increases, the rate of adoption is bound to increase.

Quality of teaching received a good mean grade rating. This was an indication that the students rated technology mediated teaching process highly. This concurs with findings by Keller (2005) that technology usage fosters collaborative learning and flexible learning opportunities independent from time and place and that it offers opportunities arising from cross-cultural use.

Various technologies can enhance learning as noted by the lecturers in this study. Mboroki (2007) was in support of this statement when he noted that, the distance education students cited internet as one of the sources they get information from for their academic work. This finding is further supported by other studies like Looi et al.(2009)who noted that seamless learning environment bridges private and public learning spaces where learning happens as both individual and collective efforts and across different contexts such as in-school versus after school, formal versus informal.

Portable technologies like mobile phone were found to be popular among the students, lecturers and academic staff. This could be because they are easily available, affordability and the services they offer to the user. This was supported by findings by Papcharis et al. (2000) were able to report on effectiveness of group learning in a technological environment.

The study also noted the enormous use of Electronic mobile devices like ipads, l aptops, and mobile phones for academic purposes. This is in line to what Gakuu (2007) found that, irrespective of the leaners age or tenure, they are willing to be trained in E-learning. These results also seem to agree with Nor Hapiza et al. (2003) study which concluded that there is a relationship between the level of ICT knowledge and readiness to adopt E-learning.

7.0 Conclusions

In spite of a number of constraints identified, the results showed that the level of preparedness to use technology in higher education at the university level was still low as the infrastructural system was still not well laid for all the students to benefit. This was seen as a major hindrance to the process of having technology mediated distance education and online system. On the overall rating of quality of teaching, and other related services using technology, it was quite good and encouraging to the university. Both the students and lecturers agreed that more technological devices should be used in the teaching and learning process in higher education. This will make education more personalized for the learners and lecturers will also have more chance of interacting with the students and other university staff most of the time when there is need without looking for them in their offices.

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USERS' SATISFACTION TOWARDS ONLINE LEARNING RESOURCES FOR SYSTEMATIC INVESTMENT PLAN (SIP) AWARENESS AND EDUCATION

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ABSTRACT
The e-learning system plays critical role in creating awareness and education towards emerging technology and subject domains. The Systematic Investment Plan (SIP) is an emerging concept in India among the people who are looking for avenues for their investment with good returns. The SIP e-learning systems creates awareness and provides education among the potential users to better understand the concept of SIP and act as a user guide to the investors. The main aim of the research is to examine the users' satisfaction towards online learning resources for systematic investment plan (SIP) awareness and education. The conceptual model examines the users' satisfaction towards SIP e-learning system using four major components such as Learner interface quality, content quality, personalization quality, and learner support quality. The present research followed descriptive research design. The systematic random sampling method was used to choice one hundred twenty one samples out the population. The primary data of the research was analysed through exploratory factor analysis, item-total correlation, confirmatory factor analysis and structural model. The results of the analysis proved the construct validity of the construct, and it indicates that the hypothetical relationships mentioned in the conceptual model are positive and significant at 1% level. Further, the results of the structural model explores that the main component which has major effect in user satisfaction towards the system is content quality (0.829), which is followed by learner interface quality (0.668), Personalization Quality (0.513), and Learner Support Quality (0.504).
Keywords: learner interface quality, Personalization Quality, Learner Support Quality, content quality, Systematic Investment Plan, User Satisfaction, e-learning.

INTRODUCTION

The online resources play a significant role in creating the awareness and education towards emerging technology and subject areas. The Systematic Investment Plan (SIP) is one of the useful topics, which may economically empower the citizens of India in long run. Over the last three years since there was a turnaround in Mutual Fund (MF) inflows, the number of SIPs have doubled from 52 lakhs to 1.28 Crore. The average monthly SIP collection which was around Rs. 1200 crore in 2014 has shot up to Rs. 4200 Crore in 2017. The average of the SIP has increased from Rs. 2300 in 2014 to Rs. 3200 in 2017 and the overall number of folios has grown by nearly 40% during these 3 years. Awareness and education towards the SIP through online sources may enhance the quantity of investment in near future rapidly particularly in rural areas. The main aim of this study is to describe the users' satisfaction towards online learning resources for systematic investment plan (SIP) awareness and education.

REVIEW OF LITERATURE

Flavell et al. (2019), in their research investigated the capacity of a multidisciplinary approach to academic development, to empower adaptive responses to ongoing technological change impacting on teaching practice. A quasi-experimental design with an intervention group (n = 22) and a comparative control group (n = 7) was adopted. Pre and post online questionnaires were administered to participants in both groups to evaluate attitudes and experiences relating to technology use in teaching and learning. The questionnaires were adapted from the Technology Acceptance Model. Qualitative measurement of the intervention group's experiences following the professional development was captured using semi-structured interviews, followed by two focus groups to confirm the interview findings. Results indicate that the professional development impacted positively on participants through significantly increased levels of confidence and perceived ease of use. Qualitative data

indicated participants experienced cognitive, emotional, and/or practical changes during and/or following the professional development.

Mei Lick and Su Luan (2015), developed a theoretical frame work to determine factors of e-learning satisfaction in teaching and learning for the teacher of secondary school level. The researcher has framed the researcher model based on the past reviews from various studies related to the present study user's satisfaction while using information technology systems for learning. The researcher has recognized three prospective determinants for measuring the level of satisfaction between the teachers of secondary school level; the factors are such as user-related, organisational-related and e-learning-system characteristics. For determining the users satisfaction level with regards to e-learning usage is recognized as a mediating variable among the three potential characteristics. Future study can deliver an additional conclusive theoretical statement of e-learning satisfaction and advance an additional proposal which could be resulting from a extra developed theory. The current study has identified a theoretical framework that sketches the analytical potential of the three groups of vital factors in explaining e-learning satisfaction between the school teachers of secondary level. Henceforth this factor can be used in future for designing continuous professional development courses and intervention programmes when recommending needs innovation in the syllabus.

Sanja (2015), analysed the examination of the sample of thirty students of master and doctoral studies from five different universities regarding their level of satisfaction with the available e-learning resources in blended environment at their high educational institutions. They were also asked about the kind of system they would like to have in the future. For the purpose of quantitative assessment of their perception, two well-known and structured approaches were used: one based on the Saaty's AHP method, and the other set up on the four-dimension Kano's model graphical scheme on the students' expectations of the system as it should be. Upon the obtained numerical and graphical results, the corresponding qualitative conclusions have been derived.

Josua (2011), in their study evaluated user satisfaction and scrutinize the relationship among user satisfaction and the qualities used in the e-learning systems by the MNCs. The researcher has incorporated the global satisfaction theory and e-learning satisfaction (ELS) theory for developing a theoretical model. The sample was collected from 190 respondents who were the end users of the e-learning systems. The research outcome authorizes that there is some degree of a positive relationship among qualities used in e-learning system and the satisfaction of the user.

Qamar et al. (2011), in their research revealed that whatsoever be the view and theory of a user about the ICTs and e-Learning, the similar is replicated through his/her attitude with regards to using educational technologies for learning and teaching needs. This research is about evaluating the associations among the predictors and the criteria variables for the e-Learning users in (HEIs) of Pakistan. The outcome of the study indicates that 51% of the users are satisfied, 81% of problems and 23% of prospects is described by the predictors. While the four predictors described about the problem, prospects are predicted only by two constructs and the Satisfaction level is denoted by three variables. The outcome of the research perceptions is that ICTs and e-Learning tools intensely estimate the prospects.

Nicole (2008), in their paper presented the findings of a comprehensive study that examined the e-learning perceptions and preferences of students enrolled at a historically black university. During this study a series of courses were specially designed to be intensive hybrid learning experiences. The Blackboard CE 6 Course Management System was adopted and paper-less learning experiences created. The results of the analysis indicate that students find course Websites to be helpful resources that enhance the understanding of course content, and that these Websites will continue to have an impact on higher education in the future. The examination of individual e-learning components indicated that students responded favourably to most available features. The strongest preference noted in this study was towards the online submission of assignments, with students overwhelmingly noting that they like having the ability to check their assignment grades online.

Choy (2007) in their article discussed about merits of e-Learning standards by Australian Case Studies. In 2004 the Australian Flexible Learning Framework developed a suite of quantitative and qualitative indicators on the uptake, use and impact of e-learning in the Vocational Education and Training (VET) sector. These indicators were used to design items for a survey to gather quantitative data for benchmarking. A series of four surveys gathered data from VET providers, teachers, students and their employers. The data formed baseline indicators that were used to establish organisational goals and benchmarks for e-learning. These indicators were the first known set for benchmarking e-learning in Australia. The case studies in this paper illustrate ways in which VET providers have approached e-learning benchmarking, the benefits achieved and the lessons that they learned. The cases exemplify how VET providers have adapted the baseline indicators, how the indicators informed

organisational plans and e-learning outcomes. The benefits of benchmarking are categorised under three purposes: reporting, performance management, and service improvement. A set of practical strategies is derived from the cases for consideration by other organisations interested in benchmarking e-learning services.

Judith Strother (2002), this research is carried out for evaluating the efficiency corporate training programs which are learnt through of e-learning in. Corporate managers are constantly looking for more cost-effective ways to deliver training to their employees. E-learning is less expensive than traditional classroom instruction. In addition, many expenses - booking training facilities, travel costs for employees or trainers, plus employee time away from the job - are greatly reduced. However, some firms that have spent large amounts of money on new e-learning efforts have not received the desired economic advantages.

THEORITICAL FRAMEWORK

SIP e-learning system

Systematic Investment Plan is an investment strategy wherein an investor needs to invest the same amount of money in a particular mutual fund at every stipulated time period. The SIP e-learning system would create and awareness towards the features, advantages and risk associated with the SIPs, so that the targeted investors can take well-planned decision-making with proper understanding. It also act as a user guide or manual and explain the steps to be followed in Systematic Investment Plan. The SIP e-learning system can act as a communication vehicle which acts as a media between share broking companies and targeted investors.

Success of e-learning system

The success of e-learning system depends on so many factors, the different authors have described various set of factors to examine the success of e-learning system and it is tabulated in table 1.

Table 1. Models for success of e-learning system

S. No	Authors	No. of Factors	Components
1	Selim (2007)	4	Instructor, Learner, Course, ICT.
2	Delone and McLean (2003)	5	System Quality, Information Quality, Service Quality, Use, User Satisfaction, Net Benefits
3	Ismail (2017)	8	Individual, Institutional, Environmental, Instructor, Tasks, Learner, ICT, and Learner Performance
4	Sun et al. (2008)	6	learner, instructor, course, technology, design, and environmental
5	MacDonald et al. (2001)	5	structure, content, delivery, service, and outcome.
6	Ahmed younis et al. (2012)	5	Quality, IT infrastructure service, service delivery quality service, usefulness and satisfaction, and net benefits.
7	Wang (2003)	4	learner interface quality, learning community quality, content quality, and personalization quality.
8	Josua (2011)	4	Learner quality, content quality, personalization quality, and learner support quality

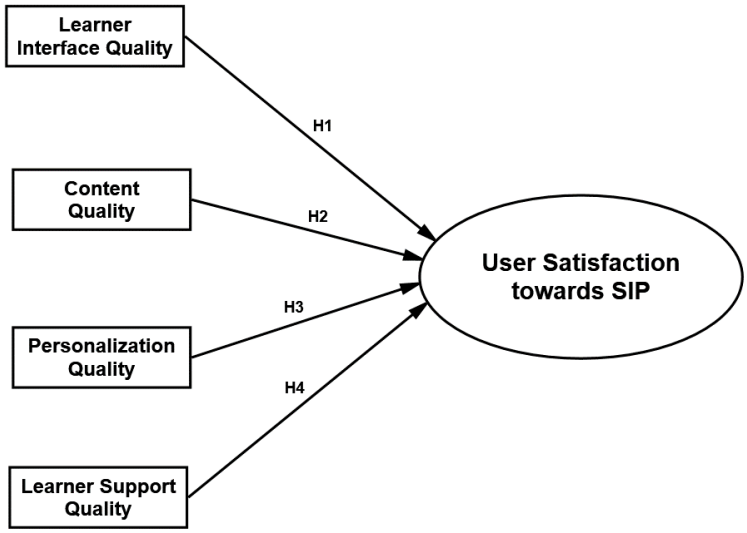

Figure 1. Conceptual Model of the Research

The present research followed above-mentioned conceptual model developed by Josua (2011) in order to examine the users' satisfaction towards SIP e-learning system.
The conceptual model examines the users' satisfaction towards SIP e-learning system using four major components such as learner interface, learner support, personalization and content quality.

Learner Interface quality
Learner interface quality is the major quality required by any kind of e-learning or information system, because the learner should be able to easily communicate with the system to learn the content. It deals with user friendliness of the system. According to Lohr (2000), instructional interface is efficient when the user is able to pay his attention on learning content rather than concentrating on how to practice the learning content. Learner interface quality is allied with ease to use, system firmness, comfort to discover the content and attractiveness, comprising the usage of colors, text layout and fonts.

H1: Learner Interface quality is having positive influence on user satisfaction towards SIP e-learning system.

Content Quality
The prime goal of any e-learning system is to deliver appropriate content or information to the intended users to develop their knowledge on the specific domain, so the quality of content is another major component of e-learning system. It includes courses, modules, and learning objects. Schramm mentioned that e-learning fulfilment is considerably influenced by the content quality of the learning resources than by the kind of equipment used to provide the guidelines. The content quality of e-learning system includes the words used, explanation and examples given for better understanding, latest information, sequence of information, presentation of the content, and meeting users' expectation towards the content (Radha et al., 2019).

H2: Content quality is having positive influence on user satisfaction towards SIP e-learning system.

Personalization Quality
Personalization quality signifies how to deliver the most suitable content for users according to their benefits and wants. It is used as one of the policies in perfect e-learning execution.
Hence there are various methods to personalize e-learning, which starts from the simplest to the utmost difficult, which is from naming acknowledgment till the entire content personalization. Each degree of difficulty has a definite influence on user satisfaction (Martinez, 2002). The personalization quality provides user-centric learning in the e-learning system. Personalization quality deals with having the facility to select the content what they need, the degree of system that encourages users' capacity to study the sub-content that they need to study; and delivers adequate information about learner performance (Saikumari et al., 2018).

H3: Personalization Quality is having positive influence on user satisfaction towards SIP e-learning system.

Learner support quality
Learner support quality denotes the additional features provided by the e-learning system which enables enhanced learning for the learner. It contains automatic email for registration course procedure and finished course authorization. Here the employee can directly register through e-learning portal by means of their own user names and passwords.

H4: Learner support Quality is having positive influence on user satisfaction towards SIP e-learning system.

Research Methodology
The present research followed descriptive research design, which describes the users' satisfaction towards SIP e-learning system. The structured questionnaire (16 items) is formulated as a feedback form in the SIP learning system with four major components such as Learner quality (4 items), content quality (4 items), personalization quality (4 items), and learner support quality (4 items). The questionnaire is formulated based on Josua (2011) E-learning system success model. The SIP e-learning system was used by totally 484 users in the Chennai city, the primary data was collected from the 121 samples using systematic random sampling technique. Every fourth sample from the sampling frame of 484 samples was chosen which leads to the sample size of the survey as 121 users.

Table 2. Profile of the sampled SIP learning system users

S. No	Particulars	Frequency	Percent
1	**Gender**		
	Male	73	60.33
	Female	48	39.67
2	**Educational Qualification**		
	School Level	12	9.92
	ITI/ Diploma	16	13.22
	Undergraduate	54	44.63
	Post-graduate	32	26.45
	Others	7	5.79
3	**Monthly Income**		
	Up to Rs. 25000	27	22.31
	Rs. 25001 – Rs. 50000	56	46.28
	Above Rs. 50000	38	31.40
4	**Preferred amount for SIP**		
	Up to Rs. 1000	42	34.71
	Rs. 1001 – Rs. 3000	54	44.63
	Above Rs. 3000	25	20.66
	Total	**121**	**100.00**

- Out of 121 sampled users, 60.33% are found to be males while 39.67% are females.
- Nearly (44.63%) of the users are qualified with the under-graduation, 26.45% of them are post-graduates, 13.22% of them are ITI/Diploma holders, and only 5.79% of them are others category.
- The monthly income of the 22.31% of the users earns up to Rs. 25000, 46.28% of them earns Rs. 25001 to Rs. 50000, and earns Rs. 50000 per month.
- 34.71% of them preferred to invest up to Rs. 1000 through SIP, 44.63% of them invest Rs. 1001 to Rs. 3000, and 20.66% of them prefer to invest more than Rs, 3000 per month.

Research Results and Discussion

The researcher collected 121 samples and analysed through IBM SPSS 22.0 software. The researcher adopted factor analysis and item-total correlation to verify the construct validity of the items.

Exploratory Factor Analysis

Factor analysis for the 16 items in the questionnaire confirms the factor loading to its main construct. The Principle Component Analysis (PCA) with VARIMAX rotation was used in the research.

Table 3. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.836
Bartlett's Test of Sphericity	Approx. Chi-Square	2194.177
	Df	120
	Sig.	<0.001**

The results of KMO test shown in the above table 3 confirms the sampling adequacy of the research in structure detection and Bartlett's test confirms that item correlation matrix is an identity matrix, which would indicate that research variables are unrelated and therefore unsuitable for structure detection.

Table 4. Rotated Component Matrix

Variables	Component			
	1	2	3	4
LIQ1	0.640			
LIQ2	0.696			
LIQ3	0.912			
LIQ4	0.702			
CQ1		0.506		
CQ2		0.507		
CQ3		0.556		
CQ4		0.783		
PQ1			0.607	
PQ2			0.535	
PQ3			0.901	
PQ4			0.830	
LSQ1				0.783
LSQ2				0.645
LSQ3				0.549
LSQ4				0.596
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 10 iterations.				

Table 4 depicts the rotated component matrix which summarizes the research variables in to four components based on its factor loading more than 0.5, it confirms that all the 16 items are useful in determining User satisfaction towards SIP e-learning system construct.

Table 5. Item-Total Correlation

Items	Item-Total Correlation	Alpha
LIQ1	0.605	<0.001**
LIQ2	0.607	<0.001**
LIQ3	0.600	<0.001**
LIQ4	0.750	<0.001**
CQ1	0.786	<0.001**
CQ2	0.717	<0.001**
CQ3	0.875	<0.001**
CQ4	0.463	<0.001**
PQ1	0.865	<0.001**
PQ2	0.904	<0.001**
PQ3	0.630	<0.001**
PQ4	0.522	<0.001**
LSQ1	0.522	<0.001**
LSQ2	0.799	<0.001**
LSQ3	0.596	<0.001**
LSQ4	0.792	<0.001**

Table 5 encapsulates the results of item-total correlation which identify the relationship (i.e. correlation) between each and every item score with the total score. The results proved that all the items are having strong relationship (i.e. more than 0.5) with total score of all the items.

The results of Exploratory Factor Analysis (EFA) and Item-Total correlation confirm the construct validity of the questionnaire used in the present research.

Confirmatory Factor Analysis (CFA)

The figure 2 depicts the confirmatory factor analysis of the current research. The researcher used Confirmatory factor analysis (CFA) in the present research in order to verify how well the measured variables represent the

User Satisfaction construct. Confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) are similar techniques, but in exploratory factor analysis (EFA), data is simply explored and provides information about the numbers of factors required to represent the data. In exploratory factor analysis, all measured variables are related to every latent variable. But in confirmatory factor analysis (CFA), researchers can specify the number of factors required in the data and which measured variable is related to which latent variable. Confirmatory factor analysis (CFA) is a tool that is used to confirm or reject the measurement theory.

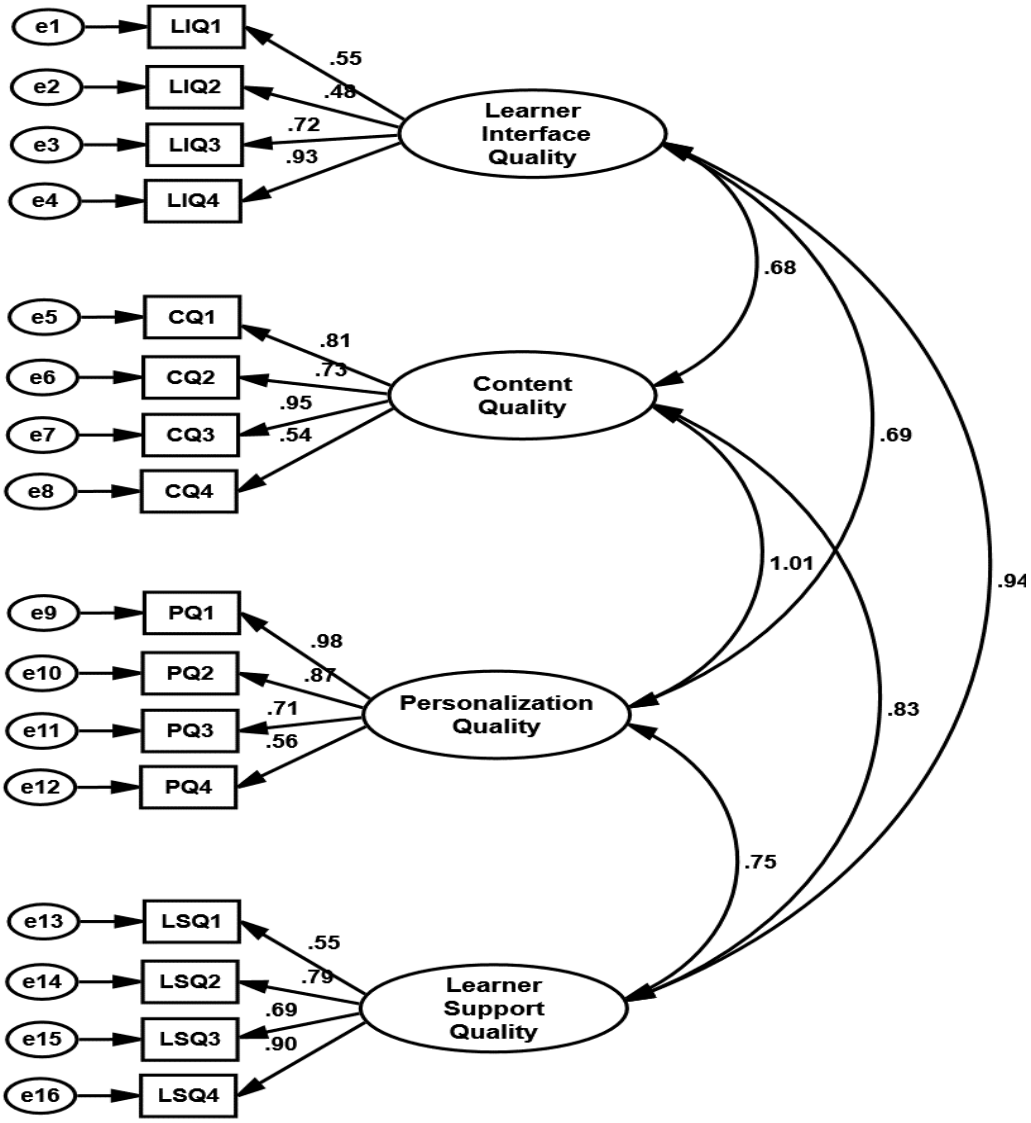

Figure 2. Confirmatory Factor Analysis

The results of confirmatory factor analysis also confirm that all the items are having significant factor loading (more than 0.5) with its factors. The model fitness indices values such as Chi-square, p value, GFI, AGFI, RMSEA, RMR, CFI, NFI values are in the threshold range, therefore the model is found to be fit.

Measurement Model

The measurement model is the part of the model that examines relationship between the latent variables and their measures. The structural model of the research is shown in figure 3.

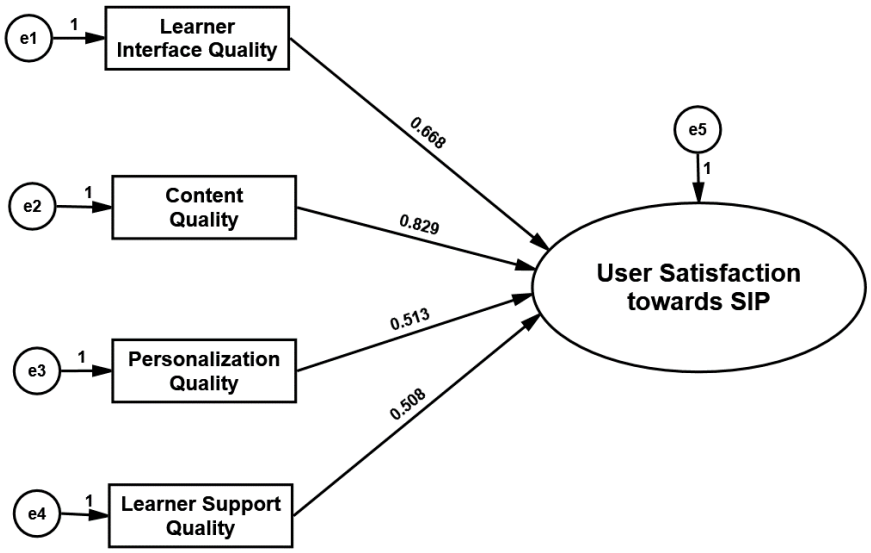

Figure 3. Measurement Model

From the above given model, it is found that all the four main factors such as Learner Interface Quality- 0.668, Content Quality- 0.829, Personalization Quality- 0.513, and Learner Support Quality- 0.504 is having significant positive loading on User Satisfaction towards SIP e-learning system with the standardized coefficient value more than 0.5 and all these relationships are significant at 1% level. Therefore, it is proved that all the four hypothetical relationships mentioned in the conceptual model are significant and positive at 1% level. Further, the model fitness indices values are within threshold limits, so model perfectly fit with the primary data collected for study.

Conclusion

The outcome of current research study specifies that the users of SIP e-learning system are more satisfied with the all the four major factors of the system. The main component which has major effect in user satisfaction towards the system is content quality (0.829), which is followed by learner interface quality (0.668), Personalization Quality (0.513), and Learner Support Quality (0.504). Therefore, the developers of e-learning system should give more focus on content quality and learner interface quality in order to maximize the user satisfaction towards the e-learning system.

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USING NOVEL AS THE MAIN MATERIAL FOR LANGUAGE TEACHING IN E-LEARNING

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ABSTRACT
E- Learning has become the most recent and most familiar form of distance education. E-learning or online learning is a kind of distance education that takes place over the cyberspace and it is of great use to the students who learn English language. It has gained much importance in the recent years as the minimum requirement for the learners is to access a computer, the online network and the zeal to learn the language. Language acquisition is a process by which the learners become competent to perceive and understand the language, and to use it as well. However, this paper aims to explore how the novels, the most adaptable genre of all literary forms, can be used at their best to speed up language learning in distance education. It attempts to present the idea of using a novel as an effective tool for teaching English language. In India, English is taught as a second language where literature can definitely play a major role. This paper takes up the fiction of Manju Kapur with a view to helping the learners develop their reading skills.
Keywords: Language teaching, literature, novels, learning, distance education, reading, literary text, material, course, learners.
This paper sets out to diffuse an idea that language learning can be accomplished with the help of novels.

Introduction

Using Literature for Language Learning:

It is a widely-accepted fact that teaching English has always been a platform for experimentation as various theories and methods have been propagated until the present, in this domain. The issue of using a literary text for teaching English has been one of the most controversial and debatable subject matters among the language experts for ages. Fitch O'Connell, a longtime teacher of English as a foreign language, ironically mentions: "Literature. Quite a divisive word, that. Throw it through an open window into a room full of language teachers and most will dive behind furniture, fingers in their ears and looks of horror on their faces." (https://www.teachingenglish.org.uk/article/get-lit-literature-a-teachers-best-friend)

Carter and McRae emphasize using literature to aid the students to go beyond “acquiring basic knowledge of the language and to learn how the language works”(10), because using literature augments the language skills. Chenfeld illustrates the significance of literature: "Through literature, we discover what is possible in human experience and imagination, and our own lives grow in richness and depth." (211)

Literature Review

(i) Arguments that Resist the Use of Literature in Language Teaching:

Several theories have been proposed to argue that literature is not relevant to those who are in interested in learning language. As per the perspectives of many theoreticians and language practitioners, a literary piece cannot support the learning of the low-level learners. Moreover, the use of literature improves only the reading and writing skills. Sandra McKay, in her seminal text *Literature in the ESL Classroom* published in TESOL Quarterly (1982) argues as it follows:

> First, since one of our main goals as ESL teachers is to teach the grammar of the language, literature, due to its structural complexity and its unique use of language, does little to contribute to this goal. Second, the study of literature will contribute nothing to helping our students meet their academic and/or occupational goals. Finally, literature often reflects a particular cultural perspective; thus, on a conceptual level, it may be quite difficult for students. (529-36)

(ii) Arguments that Support the Use of Literature in Language Teaching:

Much attention has been drawn to the usage of literature in language learning. For this reason, literature has an important place in the mainstream of language teaching. Literature is regarded as a potential source for language development, because teachers have started to realize that there was something wrong in ignoring literature (Lima, 2005, cited in Lima 2010:p.110). Nowadays, the language instructors utilize literary texts as a pioneering idea to teach English. Dicker (1989: 6) states that "one of the newest trends in teaching English as a foreign language is the literature-based syllabus design". Many teachers consider the use of literature in language teaching as an interesting and worthy concern.

In this modern era, the mastery over the language has become the key determinant for all successful careers. However, the learners face tremendous challenges in terms of pronunciation, grammar and vocabulary. At this point, literature can be taken as one of the best tools for the teaching of English. In the words of Fowler, literature can be used for language teaching, because it reflects the imaginative basic human situations, man's suffering of injustice and his conflict with his followers (Fowler, 1965: 218-19). Obediat (1997: 32) asserts the significant role of novels in classroom as they facilitate the acquisition of linguistic competence. As Obediat defines, the students in fact benefit from literature as they acquire a native-like proficiency in English language. They put across their ideas in English efficiently, learn the characteristics of English, study how the linguistic structure is used for verbal communication and understand how the idiomatic expressions and phrases are used to speak precisely. Custodio and Sutton (1998:20) also illustrate that literature can open horizons of opportunities, making students to interrogate, read between the lines, bond, and explore.

In the words of Widdowson, “The study of literature as an important factor in creating an intimate relationship between the reader and the literary work, and between the reader and the language on the other side.” (Widdowson, 1975: 73-4) Several studies agree that it is highly advantageous to use literature for language teaching. As Chih-hsin Tsai appraises: “The novel course involved in this (his) study, with no focus on literary qualities of the novel nor focus on explicit language learning work, falls in the quadrant exemplifying extensive reading” (105). Joanne Collie and Stephen Slater in their book *Literature in the Language Classroom* cite the four important reasons for the addition of literature in language teaching curriculum - valuable authentic material, cultural enrichment, language enrichment and personal involvement (1987). Similarly, Alan Maley in his critique *Down from the Pedestal: Literature as Resource* assets the following reasons for the use of literature in teaching English: universality, non-triviality, personal relevance, variety, interest, economy and suggestive power and ambiguity (1989). Thus, the prior researches in this regard substantiate the argument of this paper.

Criteria for the Selection of Literary Material

Despite the disagreements in approaches, all these language practitioners have emphasized that the language instructors should be heedful of the literary pieces they select and a lot of focus should be made while choosing the materials for teaching. This is because, the material should be sound. Besides, an irrelevant material will spoil the time and passion of the learners who tend to learn the language through e-learning. At this point, this paper aims to acknowledge that the novels of Manju Kapur can be used for the learners of distance education, because they are very lucid and readable for any language learner.

Diverse Ways by Which Manju Kapur’s Fiction can be used by Online Learners:

Language acquisition is an art which involves self-study. Our world today is obsessed with doing everything quickly which includes learning too. E-learning is done through electronic means which incorporates web-based learning, virtual classrooms, digital collaboration and delivery of content through internet. Moreover, the online learners utilize a plenty of audio-video materials and slides (e.g. You Tube lessons), teleconferencing sessions, and videoconferencing sessions. The modern technologies are accessed by everyone at the present time as they are less expensive and online learning environments are becoming widely used for teaching and learning purposes. In addition, they provide full classroom setting for employees and everyone is able to access the facilities at their own space.

The uses of E-learning in Language Learning:

According to the report of The Web-Based Education Commission, “Preparing students today for tomorrow’s workforce has a lot to do with teaching about how to use and evaluate knowledge. The Internet is rapidly

becoming the biggest repository of information we have ever known". Paul Levinson, the author of *The Soft Edge,* states: "Online learning can be a lifeline to those who have obstacles, such as geographical distances or physical disabilities." Of course, the uses of e-learning are tremendous in this modern era. Like the classroom teaching, various activities are used in the online teaching and they are very beneficial to the language learners. The uses of the teaching and learning activities are:

- They are best-suited for employees when they encounter difficulties in their workplace and try to improve their language.
- The activities can be practised at any time from any place even in the absence of computers. Many a time, the smart phones are used to serve the purpose.
- People from all age groups are benefitted.
- The students get rid of their shyness, fear and a sense of inhibition to learn and speak the language which normally takes place in the conventional classroom atmosphere.
- Unlike the classroom teaching, e-learning is a good platform for the learners to ask questions without reluctance and get their doubts cleared.

As Sarah Cordell talks about the distance education and e-learning, "They're right there. They're listening. And they like talking to each other, typing to each other. That, I think, is a big attraction, because they get to engage real time with the other students as much as with me (the teacher)." Though E-learning is a modern method of distance education, the students are provided with ample opportunities to study and it is of much use to the students who struggle to read and speak English.

Importance of the Sub-skills of Reading

The primary objective of this study is to develop the reading skills of learners in on-line education. Listening and reading are the receptive skills because learners feel comfortable to receive the language and understand, but in terms of speaking and writing, the learners need to apply these skills to produce language. 'This paper lays emphasis on teaching reading through literature', it is important to know about the sub-skills of reading.

Even though there is no agreement among the theoreticians about the sub-skills of reading, this paper sketches the findings of the theoreticians like Renandya and Richard Day. The latter claims that the goal of teaching reading is to make the students enjoy at first. In his words, "The ER (extensive reading) approach allows the students to read, read and read" (10). The reading skills are divided into two primary sub skills – the intensive reading skills and the extensive reading skills.

According to Renandya, extensive reading is a simple one as the learners pick up the language by understanding messages. He demonstrates the most essential characteristics of an extensive reading course (144-145). Firstly, students start reading the materials. Secondly, they understand the reading materials by themselves. Thirdly, they categorize the varied materials in terms of topic and genre. Fourthly, they find reading so easy and start to concentrate on the post-reading activities like designing a book or poster, reading aloud the highlighted parts, listening to role-plays, discussions and speeches and learning the meanings of new words and phrases.

Course Material and Methodology

As per this research, progress in the reading skills of the students was focused. Manju Kapur' *Difficult Daughters* (1998) was selected to be the main course material. Chapter XVIII with 15 pages is taken for study. Its content is not lengthy compared to the other chapters of this novel and it is positively motivating. Many times, even the advanced learners would become discouraged when they come across too many new words while reading with zeal, but this excerpt is readable and sufficiently challenging. In this course, the online instructor prepares a set of exercises based on vocabulary, phrases and sentences with a view to improving the extensive reading skills of learners. In addition, the names of people, location, events and things cited in the fiction are in the list of exercises.

This research based on reading skills was done at three levels. During the first level of reading, the online learners understood the text. Then they began making inferences of the text. Thirdly, they got ready to evaluate the text. The learners were asked to read the given excerpt and adequate time was also given to them. At the end, simple exercises were given to the learners that consisted of both objective and descriptive type questions. The post-test results paved way to the better understanding of the learners' reading experiences and the findings were also useful to learn about the differences in learner's perceptions. In order to facilitate the comprehension of the text, worksheets were prepared which helped the learners enormously. The online learners took about 20 to 25 minutes to fill in the worksheet. The students indeed paid tremendous interest to do the exercises.

Worksheet 1

A. The following words are the meanings of certain words in the given text. Find the exact words that accurately match their meanings:

1. Uncertainly (11)
2. a little (8)
3. open space (9)
4. anxiously (14)
5. emerge (6)
6. radically (12)
7. pretentious (9)
8. hurling (8)
9. grope (6)
10. allegation (10)

B. Write any 20 words in the excerpt that end with '–ing'. The first two words are given below.

Examples:

1. fumbling
2. concluding
3. ----------
4. ----------

C. Write any ten short sentences with adjectives that compliment the character of Virmati (from the given excerpt). The first two are done for you:

1. **Virmati was fully <u>wrapped</u> due to cold climate.**
2. **Her voice in the gathering was <u>husky</u> and <u>carrying</u>**

D. Virmati, Leela Mehta, Saubhagya Sehgal, Begum Saba Malik, Swarna Latha, Professor Harish and Mohini Datta are the characters shown in this literary piece. Based on their role and activities, find out who the character is:

1. Whose fingers and toes were freezing and wrapped with a shawl in the first scene?
2. Who says the words, "Beggars can't be choosers"?
3. Who is the woman sitting beside Swarna on the stage?
4. Who is the cousin of Virmati in this story?
5. Who is sick in this novel, looking ill and yet had to attend the conference?
6. Who is mentioned as the chairman of the reception committee?
7. Who feels in the novel that the traditional role of women is changing due to their participation in freedom struggle?
8. Name the character that is cited in the list above but an absentee to the conference?

E. **Try to elucidate the meaning of the following words taken from the excerpt**:
Creak, clenching, obscure, enthuse, upliftment, groan, reluctantly, irresolution, delightedly, provocation, prominent.

<u>Worksheet 2</u>

What kind of inferences can be made by reading the literary text? Answer the following questions in detail.

1. Explain the struggles and conflicts that women faced those days to get educated.
2. Was it easy for Indian women to take part in the national freedom fight? What are the inferences that you can make from the given text?
3. The attitude of Swarna Lata was entirely different from that of Virmati. Interpret.
4. How did you feel when you happened to read a story that took place in 1940s? Do you think the women mentioned in the novel were really happy and more independent than the women of the current period? Explain your views.

This sort of questions lead to the extensive reading and the students would really intend to go beyond the text in order to know its inferences. These inferences would surely make them discuss in groups keeping in mind the social, cultural and political contexts prevalent in the nation**.**

Findings and Analysis

In this online education experiment, the novel of Manju Kapur was used to teach a small set of 15 learners. The effort was not a part of the mainstream e-learning and therefore it had to be carried out separately. The learners were not pressurized to study because in the e-learning setting they felt free and there were no tests or exams for them to take. As far as the learners were concerned, they found the pleasure of reading which indeed enhanced their reading ability. The ensuing learning of the language was not quantified. The given literary piece

familiarized the learners with vocabulary improvement, new syntax, innovative ideas, grammatical knowledge and linguistic input. The excerpt organized the interrelated skills- reading and writing which are most often separated in the traditional classroom teaching.

The materiel taken from the novel *Difficult Daughters* created interest in the minds of the readers and led them to read it enthusiastically. The learners unconsciously learnt various vocabulary items along with grammatical structures. Moreover, they improved their pronunciation by reading aloud extracts from the novels in the group. Teaching reading skills through the spectacle of Manju Kapur's novels obtained the desired result in language learning. It helped learners organize their ideas, discuss online and share their experiences.

The Future Scope and Limitations of the Study

Without sowing the seeds, no one can harvest. Likewise, only when a teaching method is implemented, its success will be known. There are few things under the sun that do not have two sides. Similarly, this study also has both pros and cons. This course helped the students to think beyond the text and even stimulated their creative writing. For instance, the students learnt a lot about the difficulties that women confronted while pursuing education and participating in freedom struggle. Even though this reading course has been designed with a view to helping the target learners in mind, it is yet to be examined for its fruitfulness. This study is a division of the ongoing courses on the use of literature in language learning. Hence it is believed that this research will pave way to the growth of new reading skills enhancement courses in the days to come.

Language and Style in the Novels of Manju Kapur - an Overview

Manju Kapur's use of language is highly remarkable and her vocabulary is neither too complex nor too simplistic. Her choice of diction makes her novels absolutely readable. Her style of writing expresses her dramatic story-telling method. Her novels can be taken for language learning in distance education as McKay argues,"literary texts are representational rather than referential" (McKay, 1994). Her novels are thought-provoking and make the learners more creative which invite the learners to respond. The multiple layers of meanings in her novels provide opportunities for developing the interpretative and inferential skills of the learners. Her novels provide rich materials for the students in the experimental group to discuss their own attitudes towards English. Such discussions served dual purposes; while the learners were able to clarify their own subconscious attitudes towards English, they were also able to put their speaking skills into practice by discussing their ideas.

Apart from the story-line, readability and lucidity are the two major distinguishing features that led to the success of the novel. Manju Kapur employs a dramatic technique of story-telling for which she uses distinctly lucid style. Her vocabulary is understandable to all sections of readers in which she voices her joys and hopes by using colorful words and creates a wonderful cultural context for her novels. During an interview with Jai Arjun Singh, she explains the circumstances that led her to choose a lucid style in her novels. As she mentions, she has to remove 30,000 words with a pain in her heart in order to fulfill the demands of the publisher who insisted on cutting the words.

By profession, Manju Kapur was a teacher at Miranda college, Delhi where she had been teaching English for more than thirty years. Manju Kapur says the following in an interview, published recently by the Hindustan Times: "I wish I could teach and write at the same time. I left it (teaching) with a great sorrow, because I like teaching". She longs to be assigned as a part-time teacher somewhere where she can enjoy teaching and pursue her writing career. Manju Kapur has written and published six novels - *Difficult Daughters* (1998), *A Married Woman* (2002), *Home* (2006), *Immigrant (2009)*, *Custody* (2011) and *Brothers* (2018). Manju Kapur maintains the practice of narrating her fiction in an absolutely comprehensible manner.

.Conclusion

This study tries to explore that novels can be effectively used for learning English in e-learning. Though there are a few limitations, novels are certainly considered as the rich source for language learning. For numerous learners, novels can definitely open gates to motivate them to read in English language. Literature is an ideal vehicle for interpreting language as they mirror reality. Novels facilitate learning by creating the better understanding of the human lives by creating an unseen world in front of their eyes which obviously leads them to get interested in the story line and learn the language unknowingly. The success of learning the language greatly lies in the selection of an uncomplicated text. For this reason, Manju Kapur's novels have been chosen as the recommended material.

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APPENDIX

Excerpt from *Difficult Daughters* by Manju Kapur

1. Winter in Lahore, and conferences take place fast and furious in the city Important people arrive, inaugurate them, make speeches, have their photographs printed in the newspapers, along with an account of what they said, and then move on. In one month alone there is the Anti-Pakistan Conference, the Arya Bhasha Sammelan Conference,the Urdu Conference, the India History Conference, the Punjab Azad Christian Conference, the All India Sikh League. The atmosphere is charged, and voices reverberate with self-awareness.On a very cold Saturday in January, 1941, the weatherman forecast rain and fog during the day, accompanied by strong surface winds. By afternoon, the girls in RBSL College Hostel were able to admire the accuracy of his predictions. It's raining, Swarna,' stated Virmati tentatively.
2. Virmati wriggled further into her quilt till it was over her shoulders. Her shawl was wrapped around her head. Her fingers and toes were freezing.
3. Nobody is like you, Swarna, thought Virmati. I am not though I wish I were.
4. Virmati made her own way more slowly. Despite the cold and rain the hall was packed with girls seated on the floor almost up to the stage. More were standing against the walls. She edged her way towards a space at the back, hoping she would be able to hear Swarna from where she was.
5. 'That we are. My poor parents rue the day, they sent me to Lahore to study', said the second girl, laughing.
6. The Inquilab Zindabad was sung, and Virmati looked up tears in her eyes. The song was so moving. The students' flag representing freedom, peace and progress, was unfurled. There was a hush in the hall and it was clear most of the girls identified with it. Now Mohini Datta was explaining the meaning of the flag, how freedom was necessary for the development of the human spirit, how war especially affected women, how progres was their object so that freedom could be enjoyed by all classesof people, even the lowest of the low.
7. Leela Mehta's short speech was concluding. Virmati tried to concentrate. 'And lastly, she thundered, 'we want not only degrees but constructive work. We demand the right, the privilege of doing something for our country. Friends, comrades and here her voice dropped dramatically. That is the real Inquilab. Not slogan shouting. Not posturing, and empty speechmaking. If you, the hope of the future generation, can achieve some difference in the lives of your fellow men, thenindeed you are the true wealth of your nation. The hall broke out into thunderous applause as she sat down.
8. Virmati's hands clapped too, as loud and as long as the others.Then Miss Saubhagya Sehgal, chairman of the reception commitee, gave the welcome address. I didn't know we were still at the elcome stage, thought Virmati. Miss Sehgal regretted that the leaders of India were keeping back progressive forces and doing their utmost, though in vain, to come to a compromise with British imperialism. She praised the students' involvement in the satyagraha movement, as a result of which 360 students in Bengal were already in jail.
9. Virmati shifted her feet away from Swarna's. She was feeling too ill to respond.
10. 'Soon your course will be finishing here my love', the professor's words dropped with an unpleasant sound into Virmati's deep contenment. She didn't know why, unless the very slight uncertainty in his voice was the cause.
11. 'There's more than one way to commit a crime.
12. 'I break my engagement because of you. Blackened my family's name, am locked up inside my house, sent to Lahore because no one knows what to do with me. Here I am in the position of your secret wife, full of shame, wondering what people will say if they find out, not being able to live in peace….. Why? Because I am an idiot.
13. One after another, voices spoke into the microphone, voices from Foreman Christian College, Kinnaird College, Lahore College for Women, Rawalpindi College, Fateh Chand College for Women. All the women had such strong opinions. Virmati was amazed at how large an area of life these women wanted to appropriate for themselves. Strikes, academic freedom, the war, peace, rural upliftment, mass consciousness, high prices due to the war, the medium of instruction, the Congress Committee, the Muslim League, anti-imperialism, Independence Day movement, rally, speeches. Virmati's head was swimming. They were talking a language she had yet to learn. She began to feel stifled.Her legs had gone to sleep. She shifted uncomfortably on her haunches, the cold from her feet seeping into her despite the heat of the bodies around her. She felt out of place, an outcaste amongst all.
14. 'Why don't we get married? You say your family makes no difference.'
15. Heavy applause broke out as Swarna finished speaking. As the final resolutions were being formulated, Virmati wondered about her friend. She had known she was well known, but had not realized the extent of her reputation. Her heart felt dull and heavy within her. The whole afternoon had been interminable. She wondered

whether she would ever get out, ever see the sky again. At last the final resolution was moved, seconded, and adopted.The crowd around her began to heave and rise. Some of the girls left, but many moved towards the stage. They haven't had enough, thought Virmati resentfully. She could see a group of people clustered around Swarna, could then see Swarna and her cluster join the bigger one around Leela Mehta and Mohini Datta. Should she wait or go? She hung about irresolutely for a few minutes and then made her way slowly out of the hall. Once outside gulped in the cold, fresh, rain dampness, her lungs getting rid of the moistness produced by the myriad breathers inside. She decided to carefully made her way down the slippery steps.

16. Virmati had only to mention Swarna Latha for the professor to explode, and he shouted,shaking with anger, 'What doesthis Swarna Lata know of my situation, pray? How do you know of them, Viru? How does she know of the difficulties I face at hone?
17. What's wrong? All of a sudden... you jump up and behave as though I have committed a crime.
18. I came here to be free, but I am not like these women. They are using their minds,

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