T-learning- A Blend of C-learning and U-learning for Higher Education

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***Abstract*- M-learning is convenient in that it is accessible from virtually anywhere and collaborative. M-learning also brings strong portability by replacing print material and notes with small computer devices with contents as required. E-learning applications and processes include Web-based learning, computer-based learning, virtual classroom settings and digital collaboration. Content is delivered via electronic media in many forms like text, animations etc. U-learning is popularly quoted to be the blend of M-learning and E-learning. We talk about learning but what is learning? Learning can be defined as the relatively permanent change in an individual's behavior or behavior potential (or capability) as a result of experience or practice. Then, what is teaching? Teaching then, can be thought of as the purposeful direction and management of the learning process teaching is the process of providing opportunities for students to produce relatively permanent change through the engagement in experiences provided by the teacher. What needs to be observed here is that is E-learning, M-learning or U-learning facilitating behavior change or permanent change by engaging the students in experiential learning. A standalone system of learning will not complete the learning cycle. Conventional teaching and learning process emphasize the intervention of a facilitator who involves in face-to-face interaction. The human intervention is inevitable. This concept of T-learning applied to management institutes in India have shown positive results. The proportion of blend of each system of learning for various domain subjects differs. Language learning, technical learning and management learning require different blends of E-M-U-C learning to make it an effective T-learning for better knowledge transfer. The various demographic stages of learners too require a proportionate blend of each type of learning. A conscious and voluntary learning by an adult by U-learning can be effective but for students, forced learning is inevitable for their credit courses. In such a case, T-learning will be effective since the extent of learn-ability can also be identified and we can get a feedback. This paper discusses the concept of T- learning (Total Learning) which is a blend of C-learning (Conventional learning) and U-learning and its impact on knowledge transfer in higher education. An experimental set up and study reveals that each type of**

learning needs to be complimented by some other method.

***Keywords*- E-learning, Learning styles, Total Learning**

I. INRODUCTION

Every student has a like or dislike to a system of learning. Any system of learning should be designed to satisfy most of the learners. It may not be practically possible to satisfy the learners 100%, but efforts can be made to incorporate all the methods of knowledge transfer to make learning more interesting. With the advent of the electronic media and computers, it has become easier to reach out to people and also to gather knowledge. Knowledge is available everywhere and anywhere today. What is more important today is how to deliver this to the learners and the modes of delivery. Will a pure e-learning system be enough or one requires to supplement the delivery with conventional teaching too. The delivery mode should take care of the learning styles of the students. It is important to understand the students of higher education are adults and the pedagogy should be designed taking this into consideration.

II. LITERATURE SURVEY

E-Learning is meant to reach students who encounter difficulties in attending traditional classes. This may be due to distance, personal difficulties and responsibilities, or even time constraints. “Students who enroll in distance education courses tend to be aged 20-40, employed at least part-time, and sometimes unable to meet the entrance requirements to regular programs” [3]. By utilizing e-learning effectively, university’s ability to transfer knowledge and expertise to society can be enhanced. Also we are able to predict the future of learning in order to meet the needs of the changing world through continuous e-Learning activities. Before that, we must understand the problems that may happen within e-learning. Integration of high technology with multimedia tools must be emphasized because e-learning relies heavily on technologies.[1]

There is an argument that conventional learning is the best way in maintaining a learning process. Other learning methods consider it to be less efficient. Universities have a proud tradition of combining learning, research, teaching, and professional development [9]. This is caused by the reason that conventional learning is more efficient than e-learning in some aspects. Some professors and researchers believe that face-to-face instruction able to convey the meaning of the lecturer than using distance learning.A second reason higher education resists e-learning is the absence of many of the technical skills needed as well as the experience in marketing and customer service necessary to support and develop this new market [9].

E-learning is still not used widely in education as many universities are resisting to apply e-learning as their learning method. This is because many professors insist that e-learning is ineffective and reluctant to accept e-learning. They are usually afraid to use computer and do not have enough experience in high technology. They may need a long time in training sessions if e-learning is applied and this may waste their time as they felt. This makes them decide that online learning wasn’t the way to go – not as effective as classroom [4]. Some professors are afraid of their role as main instructor have been replaced by computer. This condition made them feel that they are not needed anymore in university.

The other challenge that is faced by universities is the cost involved. Views that e-learning reduces the expense of delivering learning are false [4]. According to a survey analysis, there are 57% of the students accepted that e-learning can substitute conventional learning. There are still 43% of students who do not agree that e-learning can substitute conventional learning. [4]

In another experimental study [6] to compare the effectiveness of video teaching to conventional learning techniques using a pretest/posttest questionnaire. The tablet manufacturing process was selected as the focus of the video. Students in the second professional year of the Doctor of Pharmacy curricula at the University of New Mexico College of Pharmacy were randomized into three groups. One group of students viewed the tableting video and a second group read a section of text related to tableting. A third group watched an unrelated video and served as a control. Average pretest and posttest scores were calculated and the data were analyzed. Pretest scores among the three groups did not vary significantly (P=0.48). Only students who viewed the tableting video showed a statistically significant improvement in posttest scores (P<0.001). The results from this project suggest that video instruction to support conventional lectures is a more effective teaching technique than conventional lectures alone or in combination with reading assignments. The findings from this study demonstrated that students' understanding of the tablet manufacturing process was enhanced through the viewing of a videotape. Students who read a section of text related to tableting also showed some improvement in their knowledge of tablet production, although the improvement was not statistically significant. The results from this project suggest that video instruction to support conventional lectures is a more effective teaching technique than either conventional lectures alone or in combination with reading assignments. [6]

M-learning has the potential of taking learning and knowledge across geographical boundaries and generations due to the fact that it can be accessed with ease. This brings us to the question what is m-learning and how effective it really is. In the basic sense of the term, it means learning through the use of mobile devices and is targeted at people who are always on the move

E-learning through the use of a computer is starting to be an alternative means to more traditional forms of classroom-based learning or other forms of distance learning. But this generally depends on individuals having access to a computer, which more than half of European households do not have. However, around 99% of European households do have access to a television. Despite it being necessary to add other devices to the TV to make it digital and interactive, indications are that more households will have access to interactive services via a TV than a computer by 2005. This provides a major opportunity to expand the use of e-Learning through TV-based devices particularly to create new opportunities for the retraining of European citizens increasing opportunities for equality of access to learning. This will assist in reducing unemployment, overcoming the skills shortages and encouraging new economic opportunities as well as reducing the so-called “digital divide”. Another model gives T-Learning model (Television Learning) as convergence of IP (Internet Protocol), DTV (Digital TV) , mobile technologies and e-learning. Thus, T-learning is seen as a convergence of cross media and e-learning. The cross-media refers to the use of more than one medium . However, television or device suitable for viewing broadcasted contents is the primary medium in T-learning and the other devices are implemented as a secondary medium to support learning.[7]

In recent years, there has been a dramatic proliferation of research concerned with the ubiquitous learning (u-learning). The u-learning systems have to be continuously evaluated and improved for ensuring the system reliability. Therefore, based on meaningful learning aspect they have developed a u-learning evaluation model. The model blends features of u-learning and meaningful learning to construct a hierarchy decision model. According to the hierarchy structure, domain experts can develop AHP-based questionnaire survey to collect learners’ opinions. Following that, system

developers can realize the relative strength and weakness of the u-learning system from a meaningful learning viewpoint by analyzing the surveyed data, and they can further improve and refine current u-learning systems accordingly.[10]

This system allows students to be supported with an electronic input, authentication, distribution, monitor, gathering, grading and inquiring phase and supports learning session dependent multicasting. The system is to provide an easy to use interface, so that the students are motivated to use it for their learning.

III. TOTAL LEARNING MODEL

Every student has a specific learning style. Everyone has five senses to gather information from outside namely visual, auditory, kinesthetic, olfactory and gustatory. Yet soon they begin to realize that they have reference to being visual, auditory, or kinesthetic, in their life situations, with a secondary preference to one of the other. The other two, olfactory and gustatory are for convenience sake grouped with the kinesthetic. In conventional teaching the content should contain material of interest for each type of learner i.e. visual, auditory and kinesthetic with the varied proportions of preferred modalities. In this situation, the presentation or training module should encompass all the modalities to an extent which satisfies every learner. Learners who have a high score on the auditory scale may not prefer to have e-learning but may prefer a TV-Learning which has an auditory component. A visual learner may prefer to learn with the help of visual aids and videos. A kinesthetic student will prefer to learn by activities. Then the question arises that will the e-learning or m-learning system impress such learners? Literature on learning styles advocates that every student has a preference of learning styles in different proportions [2].Having said that, we would now like to develop a model which will help in effective knowledge transfer. This model is known as the Total Learning Model (TLM) which promotes the concept of blended learning with a proper proportion of e-m-u and conventional learning. The e-m-u- learning styles are devoid of the human intervention. It is important that human intervention be present in the knowledge transfer process and the same should be reinforced by e-m-u methods.

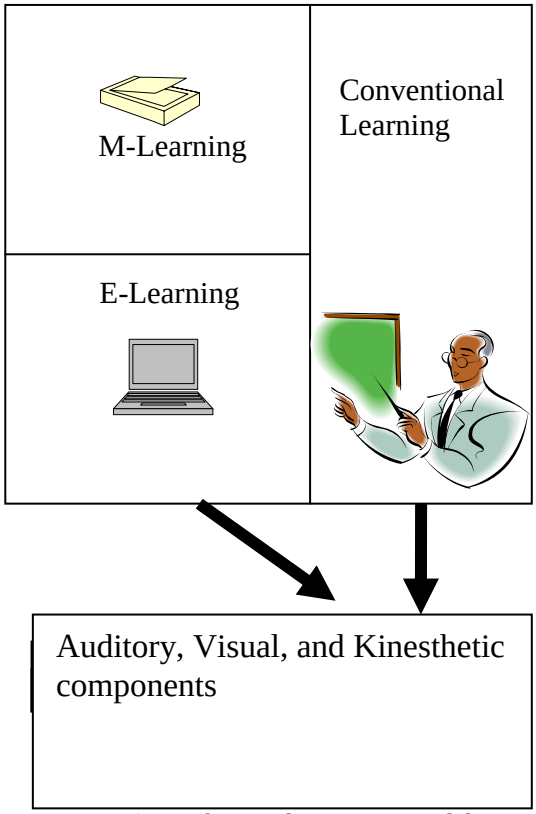

Fig. 1 The Total Learning Model

IV. RESEARCH METHODOLOGY

To evaluate the effectiveness of an isolated system of learning and a blended system of learning, three groups of MBA(Master of Business Administration) students were identified. Each group consisted of 10 members. The groups were named e-group, m-group, u- group , c- group and T- group. Each group was sent information by different modes for a period of 30 days.

The e- group were sent lessons through the internet and were also recommended to visit specific sites for more information on the topic. The m-group were sent

information on the mobile. Three SMSs (Short Message Services) were sent daily which was related to their subject. The u-group received emails, SMS and also recommended sites to gather more information. They were also asked to get latest information on business from TV channels like CNBC, IBN etc. The c- group was encountered only conventional or traditional teaching by a classroom interaction and the t-group had a blend of e-learning, m-learning, u-learning, and c-learning. Important key pints were sent as SMS. Videos and power point presentations were sent through the net, TV programs were watched in a group in a classroom and all this was supported by a conventional classroom interaction

At the end of the 10 days, a surprise evaluation test was conducted by asking 25 questions to the groups which were related to the information they had received by various modes. Three tests were conducted at an interval of 10 days each. The first test came as a surprise test, and the next two tests were announced well in advance. The results were tabulated as shown in Table 1:

TABLE 1
ASSESSMENT MARKS

S.No	Group	Test	Min. marks	Max. marks	Average
1	E	1 2 3	4 8 7	7 12 14	6 9 11
2	M	1 2 3	3 8 11	5 12 14	4 9 12.5
3	U	1 2 3	3 11 9	6 12 11	5 11.5 9.8
4	C	1 2 3	10 15 18	16 21 21	15 19 20
5	T	1 2 3	15 22 20	20 23 24	18 22.5 23

V. IMPORTANCE OF ASSESSMENT

It was observed that when the e-m-u learning system was implemented and a surprise test was conducted, the learning was not reinforced. The learning was taken only as an information flow without giving much importance to retain this knowledge. Of the 50 students who were taken for the experiment, 60% of the students did not even attempt to read the SMS that was sent to them and 40% did not even access their web portals for e-learning.

When it was declared that the internal assessment test for credits will be conducted and the questions will be based on the content which they will get through the e-m-u-c learning modules covered over a period of 30 days, remarkable result was found. 90% students accessed all their emails to read the subject content, and 10% accessed their emails to the extent of 80%.It was observed that 100% students read the SMS. The test scores in Table 1 for test 2 and test 3 show the higher marks obtained by the students.

VI. ADVANTAGE OF TLM

The TLM promotes the use of content that will be in line with the different learning styles of the students. The e-learning modules and the conventional learning system should have the auditory, kinesthetic and visual components. In a TLM, the students can have an experiential learning and the human touch is always there. Queries of the students can be solved immediately. The TLM considers all the methods of learning in proper proportions. For students in the higher education need guidance and counseling. Contact with the facilitator plays a very important role. The teacher should opt to garnish the conventional class system with intervention of e-learning, m-learning and u-learning system. This blended learning suits most of the students and even these students who may not be electronic savvy. TLM can be easily implemented for the school students too.

VII. SHORTCOMINGS OF TLM

This method of learning is not suitable for the distance education system. However, if the distance education system can have specified contact hours, this system can be used. The teacher has to be computer savvy and needs secretarial support to enable the transmission of information to the target students. Students need to be motivated to access the internet and use the mobile for the learning process.

VIII. CONCLUSIONS

It is seen that e-learning and m-learning in isolated or stand alone execution did not fetch appreciable results in students of higher education. Students need to be motivated to learn and this element greatly abstains itself in the e-m-u- methodology. In the total learning model which proposes a content with a proper mix of e-m-u-c methods and also adhering to the content of including visual, auditory and kinesthetic modules makes learning more interesting and knowledge retention is better. This is reflected in the results of the test 2 and 3 and also in the test conducted for the T- group. The T-group who were subjected to Total Learning Model did better than the others. This implies that TLM is effective and can be practiced for other professions like medical and engineering too.

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