Blended Learning and employability- A case study

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ABSTRACT - In today's technological world there is a lot of transformation in the field of education. The traditional teaching approach has been changed to modern techno oriented approach by incorporating use of Information and Communication Technology (ICT) tools such as use of internet, mobile computing, learning management system etc. This also is helping in student engagement and better employment. In this paper the authors tracks the placement information, for the last few years for a post graduate programme. It was observed that use of active & collaborative learning techniques at the institute has helped in preparing the students for the industry. Typical placement data shows an improvement in the placement records.

Keywords - LMS, Active Learning, Collaborative Learning, Employment

I. INTRODUCTION

To keep students engaged in a classroom, educators are adapting different pedagogical approaches. E-learning environments offer different possibilities to enhance educational process. Environments like Learning (content) Management Systems (LMS) include wide variety of tools to supplement traditional approaches .Use of LMS allows to gain more practical and industry oriented knowledge to get better chance of employment. The process of information transformation into knowledge has a tripod foundation for higher education. Students, teachers and the learning environment each are in one corner of such tripod foundation.

Student engagement increases if the teachers create interest in the courses taught, uses pedagogy suitable to all members of the class and disseminate current developments in the courses taught. The supporting learning environment will ensure knowledge creation and helps in building a stronger workforce.

This paper has captured such a changing dynamics of the institute, to improve upon one of the major objectives of higher learning that is employability. Section II of this paper discusses on the learning environment and different teaching and learning pedagogy that can be used at the higher learning institutes. Section III describes such a learning environment provided by the institute and Section IV contains the analysis of placement data collected and Section V describes the conclusion of the study.

II. LEARNING ENVIRONMENT AND TEACHING PEDAGOGY

Learning environments cover the systems and dynamics that facilitate and enable student engagement [16]. A learning environment is a mix of social and physical qualities that generate the classroom environment. It includes classroom management procedures, as well as the way the space is organized, furnished and maintained. It is reasonable to assume that the learning environment will have an influence on how students engage with their learning. Today's students are demanding a change in the classroom because of their ability to gather information faster than any other generation.

Traditional teaching environment majorly focuses on passive learning which mainly involves processes like define, describe, demonstrate, apply and practice which mostly involves only 50% of student

engagement. (Figure 1). Active learning happens when students participate and deals with the process like analyze, define, create and evaluate. Active learners thus build knowledge not only for themselves but also to the society as a whole.
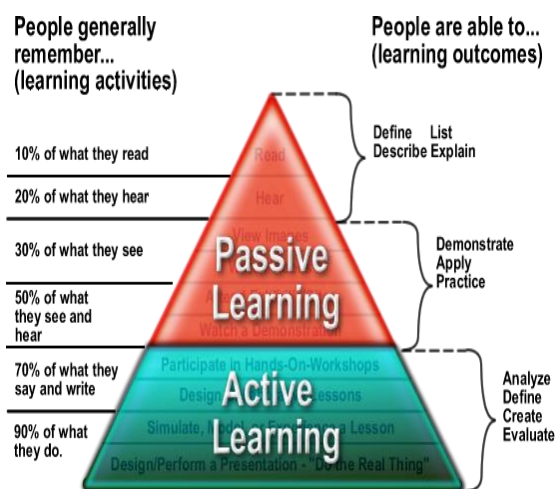

Figure 1 Learning Pyramid

In modern technology era, technology enabled peer interaction is more and more important and pervasive. According to Bransford [19], there are many benefits gained from the integration of ICT in education, such as active learning, collaborative learning, creative learning, integrative learning and evaluative learning. To establish this kind of interaction, joint intellectual efforts by learners and teachers or by learners are required and can be achieved by using LMS. Literature is full of such examples where blended learning environment helps in improving student engagement. According to Liebowitz and Frank [13] blended learning as a hybrid of traditional face-to-face and online learning instruction occurring both in a classrooms and online and where the online component becomes a natural extension of traditional learning.

LMS is nothing but a software system which enables the management of educational courses for the students or learners by helping teachers and learners monitor the learning progress. Learning is a process of gaining new or modifying and strengthening existing knowledge, skills, values, or preferences and may involve blending of different types of material including facts and figures. Communication or discussion among each another is a key element of the learning process [14][15]. There are different techniques available for active learning in a LMS based environment namely puzzles, quizzes, assignments ,polls, pretests, games, discussions , role playing, case studies, note sharing and comparisons, evaluation of another learner's work , forums and feedback.

The other aspect of learning is Collaboration. Collaborative work emphasizes on interaction [3], knowledge sharing and discovery [6] in order to fulfill a task. Thus, students work with in a group for the same task at the same time to search for meaning, understanding and find solutions to the problems defined. This also gives a chance to think out of the box and focus on their creativity.

Thus active and collaborative learning enhances the critical thinking capability of the learner, encouraging the discussion on problem solving techniques and share /pair capabilities along with learners who have not yet mastered all of the skills required. This can be achieved to some extent by using LMS. An LMS facility could provide all that is required for active and collaborative learning. (Figure 2)
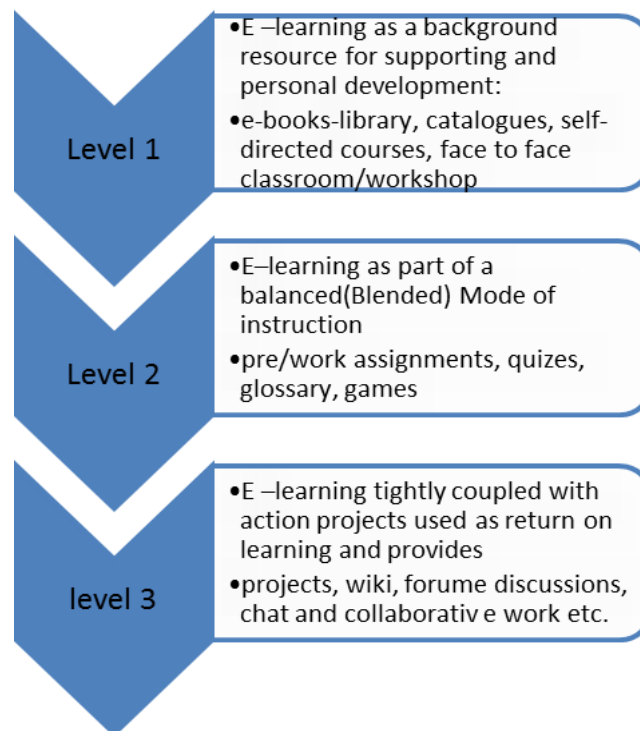
Figure 2 : Multilevel support offered by LMS

III. USE OF MOODLE AS ACTIVE AND COLLABORATIVE LEARNING TOOL

The paper uses the data from our MBA-Information Technology programme. This is a two year full time techno-Management programme with an objective of creating future leaders for IT industry. The institute has a modern techno-savvy learning environment. We are one of the institutes in the locality who have started using MOODLE since year 2010. MOODLE an open source LMS, can be customized as per one's needs. The following features are installed on our system,

- Wiki Module to work with co-authors for a document. Wikis allows simple and flexible way to work collaboratively with different group activities
- The Choice module provides a poll to ask students simple questions.
- The Quiz module allows students to use a variety of item types to conduct simple assessments.
- Glossaries which allows the keyword and vocabulary of the field by working in groups and RSS feeds and other forms as a hub for sharing a group contents created by learner via blogs, video blogs etc.
- Project and Assignment Modules are available for anywhere anytime learning for 24x7.
- Discussion and dialogs are provided by discussion forum, chats and dialogs,

On an average every semester there are about 60 courses, 40 active teachers and staff and about 1000 students take benefit of such a facility.

IV. DATA COLLECTION AND ANALYSIS

To measure the usefulness of adapting to blended learning environment at the institute, the authors have collected the following information,

- Customized LMS activities at the institute and its impact on learning as per Blooms' Taxonomy[18]
- Implementation and Use of these activities on campus since when?
- Usage of LMS by a test batch and course in terms of Student logs &
- Placement records,

Table 1 indicates the type of activities that are used by faculty members for teaching since 2010 using on our LMS.

Table 1 : Customized Activities on our LMS

Sl NO	Activity Name	Type of Learning	Bloom's Taxonomy
1	Wiki	Collaborative	Understand, Apply ,Analyse, Evaluate, Create
2	Forum	Collaborative	Understand, Apply ,Analyse, Evaluate, Create
3	Team Assignment	Collaborative	Understand, Apply ,Analyse, Evaluate, Create, Remember
4	Course Content View	Active , Collaborative	Understand, Apply ,Analyse, Evaluate, Create , Remember
5	Quiz	Active	Understand, Apply ,Analyse, Evaluate, Create, Remember

Table 2 lists different teaching strategies used at the institute for the duration 2008-2012, i.e., two years prior to adaptation to blended learning environment and two years after the adaptation.

Table 2: Active learning facilities

Learning Strategy	2008-09	2009-10	2010-11	2011-12	2012-13
Class Room Teaching	Yes	Yes	Yes	Yes	Yes
LMS accessibility	No	No	Yes	Yes	Yes
Under Blended learning (24x 7 accessibility) different active and collaborative learning methods					
Wiki	No	No	No	Yes	Yes
Forum	No	No	No	Yes	Yes
Quiz	No	No	Yes	Yes	Yes
Assignments (Team/Individual)	No	No	Yes	Yes	Yes
Project	No	No	Yes	Yes	Yes
Lesson/Course Content	No	No	No	Yes	Yes

 About 80% of the courses are taught using the above mentioned methods at out Institute. Table 3 describes student logs for a   typical course for the test programme under consideration.

Table 3: Logs for Subject JavaSE

Test Programme: MBA-IT Course Name: Java SE Batch : 2012-2014 Batch Size: 90	
Type of logs	Number of logs
Course Content	7876
Wiki	3000
Forum	713
Quizes	7000
Total Logs	18589

A critical analysis of the data from Table 1-3 shows gradual increase in the active and collaborative learning activities on campus. Table 4 describes typical placement data that has been collected for the course MBA-IT from year 2008 To 2012. A comparative analysis of this data showed an improvement on the placement records since the adaptation of LMS on campus.

Table 4 : Placement Data for MBA-IT

Year	Number of Student who had opted for placement.	Placed Students	Percentage of Placement
2008	77	66	85.71
2009	78	63	80.76
2010	82	77	93.90
2011	80	72	90
2012	77	71	92.20

V. CONCLUSIONS

Use of LMS makes students active learners as it involves different processes like analyze, synthesize and evaluate. The most sought after requirement by the industry being learn -ability, analytical skills and being a team player. All these could be achieved to an extent using blended learning techniques and active and collaborative learning pedagogy. Use of LMS builds these qualities in the learner hence a better chance of employment after completing their education.

REFERENCES

1) Dias, S. and Diniz, J. (2014). Towards an Enhanced Learning Management System for Blended Learning in Higher Education Incorporating Distinct Learners' Profiles. Educational Technology \& Society, 17(1), pp.307--319.
2) Vella, F. (1994). Promoting active learning: Strategies for the college classroom by C Meyers and TB Jones. pp 192. Jossey-Bass, San Francisco. 1993 ISBN 1-55542-524-0. Biochemical Education, 22(1), 61--61.
3) Plantak Vukovac, D., & Orevski, D. (2012). Active and Collaborative Learning at the University Blended Learning Course.
4) Smirnova, L. (2008). Technology Enhanced Teaching and Learning for Student (and Teacher) Success.
5) Lonn, S. (2009). Student use of a learning management system for group projects: A case study investigating interaction, collaboration, and knowledge construction.
6) Smith, B., & MacGregor, J. (1992). What is collaborative learning?.
7) TRAYEK, F., Gombak, J., & HASSAN, S. Attitude Towards The Use Of Learning Management System Among University Students: A Case Study.
8) Kojiri, T., Murase, Y., & Watanabe, T. (2009). Diagram-Based Support for Collaborative Learning in Mathematical Exercise. IEICE Transactions On Information And Systems, 92(4), 630--641.
9) Cavus, N & Ibrahim, D 2007,'Assessing the success rate of students using a learning management system together with a collaborative tool in web-based teaching of programming languages', Journal of Educational Computing Research , vol. 36, no. 3, pp.301-321
10) Cavus, N ,Ibrahim,D & Uzunboylu ,H 2006,'The Effectiveness Of Using Learning Management Systems And Collaborative Tools In Web-Based Teaching Of Programming Languages',3 rd International Symposium and Education on Electrical, Electronic, and Computer Engineering (ISEECE 2006)
11) Brandle, K. (2005). Are you ready to Moodle?. Language Learning Technology, 9(2), 16-23. Retrieved from http://llt.msu.edu/vol9num2/review1/default.html
12) Al-Ani, W. (2013). Blended Learning Approach Using Moodle and Student's Achievement at Sultan Qaboos University in Oman. JEL, 2(3). doi:10.5539/jel.v2n3p96.
13) Liebowitz, J., & Frank, M. (2011). Knowledge Management and E-learning. Auerbach Publications, Taylor & Francis Group, LLC. USA.

14) Palloff, R. M., & Pratt, K. (1999). Building learning communities in cyberspace: Effective strategies for the online classroom. San Francisco: Jossey Bass.

15) Palloff, R. M., & Pratt, K. (2007). Building Online Learning Communities: Effective Strategies for the Virtual Classroom (2nd ed.). San Francisco: Jossey-Bass.

16) Coates, H. (2006). "Student Engagement in Campus-based and Online education", http://www.cqu.eblib.com.ezproxy.cqu.edu.au/EBLWEB/patron.

17) Heidi Hayes Jacobs,"Curriculum 21: Essential Education for a Changing World. Creating Learning Connections with Today's Tech-Savvy Student", Bill Sheskey. ASCD, 2010.

18) Anderson, L.W. (Ed.), Krathwohl, D.R. (Ed.), Airasian, P.W., Cruikshank, K.A., Mayer, R.E., Pintrich, P.R., Raths, J., & Wittrock, M.C. (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of Educational Objectives (Complete edition). New York: Longman.

19) Bransford, J. (ed.). (1999). How people learn: Brain, Mind, Experience, and School. Washington, DC: National Research Council.