An Overview of the Learning Management System & A Feasibility Study on the Internal Product Implementation of Uzity Software at CMS Kannur University Campus

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ABSTRACT The 'business' of education management is a major issue for governments and its citizens in countries the world over. As societies evolve, the structures and influences which shape educational practices also evolve. Over the last two decades the Indian Ministry of Education (MOE) has directed Colleges to move towards a digital age with frameworks and strategies to produce students (and therefore citizens) who are 21st century ready and can achieve their full potential in this digital age (MOE,2006). Having moved globally from the industrial age (which our current education system was built on), into a digital or knowledge based age requires, some say, "a paradigm shift in educational thinking". For Colleges in India, this directive has meant that they are required to provide current technologies and expert teaching staff in environments built for different practices. Universities have made a considerable investment in the use of Learning Management Systems (LMSs) to facilitate their teaching learning processes; however these systems are not used by the faculty members to their fullest capabilities. To address this issue, this study investigated factors that affect faculty members' LMSs usage behavior, focusing on user related variables and their pivotal role in determining faculty attitudes toward LMSs. This research project has evolved out of a desire to understand what issues exist for teachers, students and administrators of Centre for Management Studies, Mangattuparamba Campus Kannur University, for implementing a LMS. By researching ,this project aims at measuring the effectiveness of Learning Management System and identify a set of guidelines which may be used to assist college in effective LMS selection and implementation in the future.

INTRODUCTION

Technology is such a rapidly evolving area that it can be difficult to keep up with advances. Daily, new releases of hardware and software are announced which are set to 'revolutionize' the world and change people's lives. In education, commercial technology is being integrated with promises of transforming learning, often without specific information on the effects of each of the technologies once implemented. LMS were originally commercial systems which have been introduced to the education realm with the unfulfilled promise of transforming learning. Hall states a learning management system should enable "the management, delivery and tracking of blended learning (i.e. online and traditional classrooms) for employees, stakeholders and customers". An LMS is the infrastructure that delivers and manages instructional content, identifies and assesses individual and organizational learning or training goals, tracks the progress towards meeting those goals, and collects and presents data for supervising the learning process of the organization as a whole. A Learning Management System delivers content but also handles registering for courses, course administration, skills gap analysis, tracking, and reporting.

To measure the effectiveness of the Learning Management System using four factors below

Easy to learn, Error Tolerance, Speed, Quality

These four factors derived from Shackel's Usability Model. According to Shackel (1991) usability is a property of a system or a piece of equipment. The property is not constant, being relative in relation to users, their training and support, tasks and environments. Thus, the evaluation is context-dependent. The system or piece of equipment may be usable if it matches the combination of users, tasks, and environment. For a system to be usable it has to achieve defined levels on the following scales:

Effectiveness,meaning the results of interaction in terms of speed and errors;

Learnability,meaning the relation of performance to training and frequency of use, i.e. the novice user's learning time with specified training and retention on the part of casual users;

Flexibility,allowing adaptation to tasks and environments beyond those first specified;

Attitude,meaning"acceptable levels of human costs in terms of tiredness, discomfort, frustration and personal effort".

So, researcher chooses only one characteristic of Shackel's Model which is effectiveness. This effectiveness consists of four factors such as easy to learn, error tolerance, speed and quality.

Each system has its own strengths and weaknesses along with specific implementation issues. A good LMS enables a college to provide an individualized student learning experience electronically or enhance an existing program of study by including learning material, online courses, assessments, student evaluations, progress reports and results in 'real time' Originally LMS were pitched as 'the tool' to transform learning, but it is now recognized that a mixture of tools is a stronger and more stable approach.

OBJECTIVES OF THE STUDY

This research paper has been written for the teachers, administrators and students within a case study college. It has used information from one site and aims to:

1. Identify perceived impediments and enablers which influence the use of Uzity Software programme in the case study college.

2. Enable teachers and support staff to identify issues which may be impeding the successful use of Uzity Software programme within the College.

3. Provide guidelines for student learning management system implementation and use to the wider educational community.

SCOPE OF THE STUDY
Internal Product Implementation in Kannur University
- Define workflow

- Map the life cycle of a student's admission process from point of entry to point of exit

- Map the classroom activities of a student in a day from entry to exit

- Map the classroom schedule or timetable

- Sign in Uzity and check the activities of students

- Availability of content and study process

RESEARCH DESIGN AND METHODOLOGY
RESEARCH DESIGN
The research design used in this study is descriptive and empirical in nature.

SAMPLING DESIGN
The case study site chosen by the researcher for this project was a Centre for Management Studies, Mangattuparamba Campus Kannur University. The college is a mixed gender, with students aged between 22-25 years. Kannur University was established by the Act 22 of 1996 of Kerala Legislative Assembly. The University by the name "Malabar University" had come into existence earlier by the promulgation of an Ordinance by the Governor of Kerala, on 9th November 1995. The University was inaugurated on 2nd March 1996 by the former Hon. Chief Minister of Kerala.

Participants
From this College the researcher selected two different sets of participants: 19 students from Second Semester MBA students and 18 students from fourth Semester MBA students randomly out of 83 students. Student participants were selected from documents containing data logs of how often users logged into the college student learning management system (LMS), Uzity Software Programme. Large lists of possible participants for each of three sub-groups (high, medium, and low users) were identified from the data and participants were randomly selected from each list. The sub-groups were selected based on how often the potential respondent logged into the LMS from the start date of the software till March 2015. Any person who logged into Uzity Software Programme less than 5 times a term was considered a low level user, anyone who logged in between 5 and 10 times was considered a medium level user and anyone who logged in more than 10 times was a high level user. Random selection of each participant was done and in total thirty seven users was selected to take part in the student questionnaire phase of the project from both Second Semester MBA and fourth Semester MBA students.

METHOD OF DATA COLLECTION
Both primary and secondary data were examined

1.Primary data
In order to collect individual perceptions of the LMS at the college, two different data gathering methods described in the following sections.

- Questionnaires
- Focused Interviews

2.Secondary data
Secondary data are obtained through:

- Website.
- Books

TOOLS FOR ANALYSIS
The collection of data was analysed using 3 statistical methods.

- **Percentage Analysis**
Percentage is obtained when ratio are multiplied by 100.

$$Percentage\ (\%) = \frac{Number\ of\ Respondents}{Total\ number\ of\ Respondents} \times 100$$

❖*Chi Square Analysis*

It is a statistical test which tests the significance of difference between observed frequencies and corresponding theoretical frequencies of a distribution. Chi-square test is calculated as;

$$x^2 = \frac{\sum (O-E)^2}{E}$$

Where O = Observed frequency E = Expected frequency and

$$E = \frac{Row\ Total\ X\ Column\ Total}{Grand\ Total}$$

Inthe case of a contingency table degrees of freedom is worked out as follows;

DF = (c-1)*(r-1) Where "c" means the number of columns and "r" means the number of rows.

❖*Frequency Analysis*
The study of quantitatively describing the characteristics of a set of data is called descriptive statistics. Frequency Analysis is a part of descriptive statistics. In statistics, frequency is the number of times an event occurs

❖*Rank Analysis*
Mean rank analysis calculate the ranking average for each statement to determine which statement was most preferred overall. The statement with the largest ranking average is the most preferred choice. The ranking average is calculated as follows:

$$E = \frac{x1w1 + x2w2 + x3w3 + \ ......xnwn}{Total\ No.\ Of\ respondents}$$

Where x = no. Of response count, W= rank position

HYPOTHESIS
Relationship between Observed data and Expected data
H0: There is no relationship between observed data and expected data
H1: There is a relationship between observed data and expected data

*Acceptance Criteria:*If the calculated value of chi square is less than the table value then the null hypothesis is accepted.

Rejection Criteria: If the calculated value of chi square is equal or greater than the table value then the null hypothesis is rejected.

LEARNING MANAGEMENT INDUSTRY

In the relatively new LMS market, commercial vendors for corporate and education applications range from new entrants to those that entered the market in the nineties. In addition to commercial packages, many open source solutions are available.

In the higher education market as of fall 2013, Blackboard is the leading provider with 41% market share, with Moodle (23%), Desire2Learn (11%) and in structure being the next three largest providers. In the corporate market, the six largest LMS providers constitute approximately 50% of the market, with Success Factors Learning, Saba Software, Voniz Inc and Sum total Systems being the four largest providers. Vendors focused on mid-sized companies (200+ employees) include Halogen Software, ADP, and Workday.

In a recent study among HR professionals in February of 2015, Litmos was the leading HR LMS platform at 21% of market share, with Absorb LMS (8%), Skillsoft (6%) and Grovo (6%) as the next three largest providers.

In addition to the remaining smaller LMS product vendors, training outsourcing firms, enterprise resource planning vendors, and consulting firms all compete for part of the learning management market. Approximately 40 percent of US training organizations reported that they have an LMS installed, a figure that has not changed significantly over the past two years. Another service related to LMS comes from the standardized test preparation vendors, where companies such as Princeton Review or Bench Prep offer online test prep courses.

Evaluation of LMSs is a complex task and significant research supports different forms of evaluation, including iterative processes where students' experiences and approaches to learning are evaluated.

A New Generation of LMS

With the recent technology and web application advancement, a new generation of LMSs are expected to have some new features. These include: open, social, personal, flexible, learning analytics, and mobile.

History of learning management systems

The evolutionary history has been closely tied to the development of digital technology and the Internet. Each milestone in LMS history is marked by a development that advanced rapid knowledge transfer and independent learning. These are some of the most important LMS milestones. *1924.* A psychology professor at Ohio State University invents what many call the first teaching machine. Sidney Pressey's device resembled a typewriter and could be used to practice drills and administer multiple choice quizzes.

1945. Vannevar Bush, an American engineer and inventor, describes an "augmented memory" device called the *memex* that stores vast amounts of information and allows users to quickly search for and access data. This concep-

tual device is credited with influencing the developers of hypertext, the linking mechanism that is at the heart of the World Wide Web.

·*1956.* SAKI (for Self-Adaptive Keyboard Instructor), the world's first adaptive teaching system, goes into production. This keyboard tool was designed by engineers Gordon Pask and Robin McKinnon-Wood to help people increase their typing speed and accuracy. It emulated the teacher / student relationship using student performance to determine response time and instructional cues.

·*1961.* PLATO (for Programmed Logic for Automated Teaching Operations), the world's first computer-assisted instruction program, is introduced by faculty at the University of Illinois at Urbana-Champaign. Besides being the first computer-based teaching system, PLATO is host to the first on-line community.

·*1969.* The U.S. Department of Defense commissions the ARPANET project. Researchers on this project developed many of the protocols that were later used for the Internet.

·*1983.* MIT launches Project Athena, an eight-year research project that produces computer-based learning tools. The Athena system is still in use at MIT and allows third part education applications to be integrated into coursework.

·*1990.* Soft Arc launches First Class, which is now recognized as the first Learning Management System. First Class runs on a personal computer (the Apple Macintosh) rather than on a mainframe computer like previous teaching systems. The United Kingdom's Open University uses First Class to deliver online learning across Europe.

·*1997.* The Interactive Learning Network is developed by Course Info. This is the first LMS to use a relational My SQL database. The Interactive Learning Network is installed at Yale, Cornell and other academic institutions.

·*2004.* SCORM 2004 (Shareable Content Object Reference Model), a set of standards for training technology, becomes the basis for many current Learning Management Systems.

·*2008.* Eucalyptus is released as the first open source application programming interface (API) for the deployment of private clouds. This allows Learning Management Systems to run entirely online without being installed on personal computers or internal networks.

·*2012.* Modern SaaS Learning Management Systems take advantage of cloud-based technology. Companies are freed from the burden of developing or installing in-house systems. Many LMS applications also support delivery to mobile devices using WiFi.

Learning management systems are now prevalent today due to the need of the majority, created for the main purpose of documenting, administering, reporting, tracking, and delivering e-learning lessons, trainings and educational courses. Learning management system is quite broad when it comes to how it works. It ranges from educational purposes and training courses to creating software solutions to delivering it online. When you think about it, there are certainly a lot of reasons why people are using LMS now. Its main users are probably anyone who is working and studying in the universities or the users from companies who use eLearning solutions during their train-

ings. Today, many have agreed that this type of system is truly helpful in any way possible. Although some may say that it has no drawbacks, it certainly has certain loopholes which can be considered. People are moving towards online trainings and educational course which can be directly related with the number of eLearning companies up and running in last 10 years. Market for online certification and courses, technical or soft skills is growing and they are certainly related to learning management systems in one way or the other.

A good LMS truly enhances the learning experience for its users, but they also have certain disadvantages and they pose a huge challenge in growth of learning management systems.

The history of the application of computers to education is filled with generic terms such as computer-based instruction (CBI), computer-assisted instruction (CAI), and computer-assisted learning (CAL), generally describing drill-and-practice programs, more sophisticated tutorials, and more individualized instruction, respectively. LMS has its history in another term, integrated learning systems (ILS) which offers additional functionality beyond instructional content such as management and tracking, more personalized instruction, and integration across the system. The term ILS was originally coined by Jostens Learning, and LMS was originally used to describe the management system part of the PLATO K-12 learning system, content-free and separate from the courseware. The term LMS is currently used to describe a number of different educational computer applications.

CURRENT RESEARCH ON STUDENT LEARNING MANAGEMENT SYSTEMS

Foradian Technologies is the world's leading provider of enterprise software solutions for education institutions. Their products and services are used by thousands of educational institutions worldwide for all administration, management and learning related activities. The product Uzity enables organizations to teach and learn using the power of internet. Uzity is a global university where people have the ultimate freedom to teach and learn anything they want in any pace they prefer.

The claims Uzity Software Programme and other LMS solutions make about transforming learning are yet to be proven. Despite a large number of implementations over the last decade there is still limited research on the use of LMS in colleges and Colleges and unfulfilled claims they would transform student learning. There has been a call for further research into this area and standards to be produced.

There has been rapid progress in LMS implementation over the last decade. The company is creating strategies and policies to try and improve use of Uzity in colleges. The government also provides extra funding so equipment can be purchased, along with intensive training programs offered within and externally for teaching staff. It would appear two of the main influences identified in most research studies are being addressed – resources and institutions. However, current research still laments the lack of genuinely transformed learning resulting from the use of LMS.

What is Uzity? - A simple learning management system on cloud

Uzity is a simple & user friendly Learning Management System on cloud. Uzity is a web application that you can use to create multiple courses under your organization. You can invite other teachers and students of your organization to collaborate and learn the contents of the different courses. Students can ask questions specific to each topic and the answers can be given by teacher or other students. You can also upload learning resources to the different topics in the course and can share the resources to other courses in the same organization. You can manage contents and users through an easy to use interface. Moreover Uzity is secure and gives you full control in designing and implementing the learning activities of your institution.

ANALYSIS AND IMPLICATIONS OF THE STUDY

On analyzing the usage of the Uzity software among students of the study, it was found that they used this software occasionally and if a Mobile App is developed by Uzity team then the usage may change accordingly and


students will be dependent on Uzity Software Mobile App.

Source: Primary Source

It also shows that 86.5 percentage of the respondents were not aware of the other LMS software programmes too. Hence proper demonstration for the use can be exercised so that the students become more familiar to this application. Also regularisation in terms of attendance should be adopted into this programme whereby it is easy for the professors to monitor the students too.

Some of the factors which can reduce the usage may be cited as follows
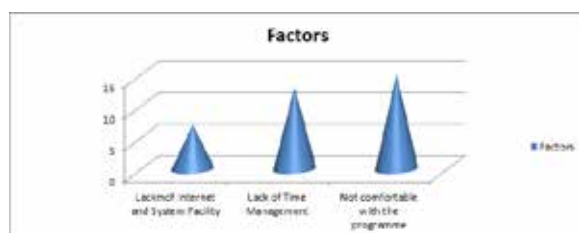
Source:PrimarySource

From the above it is quite clear that students are not aware and comfortable with this software. This may be the reason for less usage of Uzity Software also.

TO TEST THE RELATIONSHIP BETWEEN GENDER AND PERCEPTION OF THE RESPONDENT

H0 = There is no significant association between gender and Perception of the Respondent

H1 = There is a significant association between gender and Perception of the Respondent towards Uzity Software

Gender	Strongly Agree	Agree	Neutral	Disagree	Total
Male	2	3	5	2	12
Female	2	20	2	1	25
Total	4	23	7	3	37

Source: Primary Data

Σ (O-E) 2/E=10.96977

Degree of freedom =(c-1)*(r-1)

$\qquad$ =(4-1)*(2-1)

$\qquad$ =3

Ho: There is no significant association between gender and more training on how to use computer during class hours

H1: There is significant association between gender and more training on how to use computer during class hours

From the above table it would be observed that majority of the female category agree to the opinion that more training on how to use Uzity software during class hours would prompt the usage of Uzity software whereas majority of respondents of male category opined only neutral to this statement. In order to test this hypothesis chi square analysis was done and results revealed that

1) Table value of x^2 for degree of freedom 3 at 5% significant level is 7.81

2) The calculated value of x^2 is greater than table value. So we reject the null hypothesis.

PERCEPTION TOWARDS THE USAGE OF UZITY SOFTWARE

Perception towards the usage of Uzity software				
No.	Statement	Response	Frequency	Percentage
1	More time to use computers during department or classroom	Strongly Agree	1	02.70
		Agree	22	59.45
		Neutral	14	37.83
		Disagree	-	-
		Strongly Disagree	-	-
2	Teachers students interaction about Uzity software	Strongly Agree	4	10.81
		Agree	11	29.72
		Neutral	16	43.24
		Disagree	2	05.40
		Strongly Disagree	4	10.81
3	Computer available for use in my own time	Strongly Agree	8	21.62
		Agree	14	37.83
		Neutral	12	32.43
		Disagree	3	08.10
		Strongly Disagree	-	-
4	Chat site on Uzity software so I can discuss course work with other students	Strongly Agree	13	35.13
		Agree	8	48.64
		Neutral	5	13.51
		Disagree	1	02.70
		Strongly Disagree	-	-
5	More training on how to use Uzity software	Strongly Agree	4	10.81
		Agree	23	62.16
		Neutral	7	18.91
		Disagree	3	08.10
		Strongly Disagree	-	-
6	Assignments posted on Uzity software	Strongly Agree	10	27.02
		Agree	18	48.64
		Neutral	9	24.32
		Disagree	-	-
		Strongly Disagree	-	-
7	More things to use on Uzity software	Strongly Agree	4	10.81
		Agree	19	51.35
		Neutral	14	37.83
		Disagree	-	-
		Strongly Disagree	-	-
8	Working on Uzity software while in class	Strongly Agree	1	02.70
		Agree	23	62.16
		Neutral	9	24.32
		Disagree	4	10.81
		Strongly Disagree	-	-
9	Extra teaching material available to read in my own time and working examples available	Strongly Agree	2	05.40
		Agree	19	51.35
		Neutral	13	35.13
		Disagree	3	08.10
		Strongly Disagree	-	-
10	Other example: Video Presentation , Foreign author's book related to subjects, PPTs regarding subjects	Strongly Agree	6	16.21
		Agree	22	59.45
		Neutral	9	24.32
		Disagree	-	-
		Strongly Disagree	-	-

Source: Primary Data

Based on the results shown in above Table , since each statement that measure the PU construct possesses mean above 3.2, the findings indicate that the general perception of students towards the usefulness of WBLE is positive. Therefore, there was enough evidence to reject H01a. The findings show that, UTAR students perceive WBLE as useful.

SUGGESTIONS

The Uzity Team should develop their system and additional functionality can be turned on. In order to ensure their users will gain the full benefit of this system, and begin to see a greater impact on learning, the Uzity Team need to address the barriers for effective use of Uzity software that users have identified in this study.

- To overcome the identified barriers, the Uzity Team should consider the following actions:
- Try to include an attendance structure so that professors find it easy to monitor the students and reduce paper work and to avoid attendance
- Promote the system to staff and students so everyone is aware of the functionality of the system, and there should be a free consultant to help out if any problem faced in software.
- Provide regular training sessions, both full group and peer run sessions for both staff and students. It should also have collaborative groups which create data and support each other.
- Provide the student with a Certificate for recognition if the student participates in the programme actively.
- Secure additional non-contact time for staff to learn the system, develop resources and make sure current resources are adequately linked.

- Ensure management directives and incentives are created to encourage staff to use the system, as without their full buy-in the system will not be accepted into daily practice.
- If the Uzity team updated the things as identified in this study this may increase the usage of Uzity programme.
- A Launch of Mobile App of Uzity Software will bring a big change in the usage level of Uzity software.

CONCLUSION

The case study college implemented a learning management system (LMS) with the intention it would enable them to remove sensitive documents from their public website and make them accessible to students and staff from home. To this end, Uzity Software has served the purpose for which it was purchased.Studies the world over have claimed that LMS use is not transforming learning but, as with this case study college, many colleges that have implemented a LMS are actually using them as learning content management systems (LCMS) rather than genuine learning management systems (LMS). However, the fact that the college implemented a LMS means they are in a position to use the full features of their LMS in the future. Once the barriers are addressed, there should be more extensive use of Uzity Software, and slowly individual learning paths can be created so students can start to see real transformation of their learning.There are issues with the limited use of LMS technology (what we do not have are definitive solutions). The Indian Ministry of Education (IME) has spent the last decade building solutions for college to enable them to become 21st century ready. But despite claims of transformed and individualized learning opportunities, what has been seen is individual colleges' struggling to implement new technologies with little or no assistance. What is missing is extensive evaluation of the systems already implemented and documented research accessible to colleges on those implementations.

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