Learning Management System for Virtual Teaching and Learning

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Abstract- Epidemic like Ebola virus, SARS etc. has brought deadlock in many sectors and nations are running under financial crunch with closer of all financial activities and trades in South African countries. These pandemics brought billions of children at rest and educational institutions remain closed leading to hampering in academic activities. Among these Education sectors has moved to virtual mode of Teaching and any Virtual class room Teachings has evolved with many challenges ahead. Government of India had already initiated many projects for remote Teaching and Learning Projects like Spoken Tutorial, Swayam, PG Pathsala, CIC, Virtual Labs etc. Now the usage of these portal can increase hence supporting a remote learning opportunity for all.

Keywords- Online Teaching, Virtual Teaching, Pandemic

I. INTRODUCTION

Higher Education in India has undergone many changes from time to time and more initiatives like RUSA, Inspire, NAD, creation of one IIT & IIM in each state has drastically reshaped the education system. Various amendments from UGC, AICTE, MHRD in Teaching, Research, Recruitments, Infrastructures developments has also led to improvement in Quality Education.

India is presently enjoying the status of 3rd Largest Education sector in the world after US & China in terms of Higher educational institution which is approximately more than 39,200.

We feel proud being third largest sector in higher education, but when we compare the quality teaching and research across the globe, we lags behind and even none of our institute appears in top 150 in terms of Global ranking like QS 2019.

These facts urge the government agencies and researchers to relook into the issues and progress and hurdles we face in 10-15 parameters considered for global ranking of the institutions. No matter we claim many things in Indian education system but facts are not in our favours in terms of Quality in higher education.

One of the major concerns in higher education is to understand the learning behavior of Learners and Teaching methodology adopted by Teachers. We still adopt very simple feedback system for both Teachers and Learners and very surprisingly this feedback is treated as documents for NAAC only and no any analysis is conducted as it is not possible for migrating data to some tool and conduct the analysis and even Teaching fraternity does not bother for the same as well.

Very surprisingly ICT usage is still very less and even how ICT can be used and utilized is not clearly known to most of the Teaching Fraternity.

But Pandemic Situation with the SARS,Ebola has urged the Academics Institution to rethink the way ICT can be adopted as substitution or Just fillers only. Exactly What do mean by ICT also needs to be explored.

II. VARIOUS LMS FOR ONLINE TEACHINGS

Many organisation in India has developed online Teaching platform termed as Learning Management System and their utilization was very limited but now they are on high demand and Academician has started using the same and finding bugs in the same as well which are notified for further improvement. The Widely used Various open source LMS are as Under:

(a) **Moodle**

It stands for Modular Object-Oriented Dynamic Learning Environment which is mostly used by some IIT's, some NIT's in Teaching in India. Moodle platform in education system can be proven very useful if implemented in effective ways and proper implementation of courses as per requirements can be migrated to this platform. It has been seen that the government of India is promoting use of ICT sources, MooCs through NPTEL Project, Swayam Project [integrated with NPTEL], Open source software through Spoken Tutorial Project. Keeping this in view, adoption and usage of Moodle will lead to conduction of research in Learning Analytics.

As Technology is enhancing day by day in teaching learning process SAMR (Substitution, Augmentation, Modification, Redefinition) model is fit case which propels one to adopt Moodle

If you want to use this LMS is freely available and can be integrated with website of your institution with some hardware requirements you can go online and in addition android app of this Learning Management system is also available for individual user which enables educators to

create their own private website filled with dynamic courses that extend learning, anytime, anywhere.

This LMS is designed to be responsive and accessible and very easy to navigate on both desktop and mobile devices, display current, past and future courses, along with tasks due.

Drag and drop files from cloud storage services including MS OneDrive, Dropbox and Google Drive.
educators and learners can track progress and completion with an array of options for tracking individual activities or resources and at course level.

(b) MoodleCloud:
This is cloud version of Moodle which can be easily edited by users and it comes with almost all features of Moodle.
The cloud version provides limited storage and 50 users in free plan earlier but now they have updated the plans and under trial 200 users and 500 MB Storage is available till 45 days later need to pay for plan.

The various plugins and features help for Web Conferencing, Monitoring the Site.

(c) Bodhi Tree:
BodhiTree is an online learning platform developed at IIT Bombay with the mission of providing accessible personalized, flexible learning environment. BodhiTree hosts interactive multimedia books including lab manuals that mimic classroom teaching. Books are made of chapters which in turn are composed of interactive videos (interactivity is achieved via periodic pop-up quizzes embedded within the video), auto-graded practice problems, reference material, slides etc. These books can be accessed by students via a smartphone app as well as a web-browser.

BodhiTree provides an integrated learning management system (LMS), the entire ecosystem needed to use these books to run engaging classes and labs.

BodhiTree appears similar to MOOC (Massive Open Online Courses) platforms such as Coursera, Udacity, edX, and the indigenous NPTEL/Swayam. The fundamental difference though is our focus is on instructors (in addition to students). It is an aid to teaching for instructors, as opposed to replacement of teachers (which is the view of MOOCs). In this regard, Moodle as an LMS is closer to our ideology than a MOOC. Compared to Moodle, BodhiTree is more user-friendly and has better support for multimedia content, quizzes and lab exercises.

(d) Blackboard LMS

Blackboard is another learning management system developed by Blackboard Inc. This LMS comes with Two version one with paid plan and other as free in coursites.com platform. It allows 200 users with 1 GB of storage facility and provides many features multiple

instructor, activities analytics and collaborate for online class.

(e) Canvas Instructor
This is another good LMS for higher Learning in virtual mode with features like analytics at each level of participations which gives clear insight in to the impact of the contents and courses. It is free for Teachers with limited features up to 50 users.

III. CHALLENGES IN VIRTUAL TEACHING AND OPPORTUNITY FOR DESIGN OF NEW EDUCATIONAL PRODUCT

Examination conduction is one of the major issues in online Teaching and LMS designed so far as good in evaluation based on MCQ, Short Answer and other and Theory Examination cannot be conducted using LMS with Learner sitting at home.

The challenge of theory Exam conduction has given birth to new area of research and opportunity for developing new product capable of identify the Learner and his/her actions at home while attempting the Exams.

IoT can bring a lot in the area with the usage of motion sensor-based devices at Learners end to note down the actions of Learners at server and an alert mechanism can be designed to aware the Learner about their un authorized movement while writing exam at home.

Still very few issues have been incorporated with LMS like Mett but many challenges have still to overcome.

IV. DESIRED FEATURES OF LEARNING MANAGEMENT SYSTEMS

Data-Driven Results: One of the most desirable features for all Educational institutes and Department of Education will be data-driven results to have tracking and reporting features. This will also help to evaluate and assess Teaching Learning efforts.

Testing and Assessment: Another great feature is the assessment and testing tools that LMS needs to have, This is required to evaluate the success.

Responsive Learning: It is also desirable to have learning on multiple devices features in LMS.

Customization Options: LMS must offers customization and branding. Customization options will definitely make LMS more appealing to for learners.

SCORM Compliance: SCORM compliance is also great feature in LMS which helps to create courses in any authoring environment.

V. FUTURE OF VIRTUAL CLASSROOM ACROSS THE GLOBE

With the rise in demand of Quality Education and specialized Training from the reputed Institution, Online education had started to provide education to students,

employees, anybody deprived of Education. With the time, Coursera, edX, Khan Academy, MIT Courseware, Up Grad and many more have come in online education using LMS System.

But with the pandemic covid-19, when most of activities and business in various field are closed only one area which has recovered is Education but it is shifting and adopting virtual environment from physical with many challenges ahead.

Now LMS market is expected to be worth over $15.72 billion in upcoming year 2019 and may be in 2020-21, roughly all educational institutes will offer eLearning-based courses with need of hour.

Hence, there is drastic rise in the demand for Learning Management Systems to systematically implement and manage eLearning.

VI. CONCLUSION

While there is no any official guidelines in regulations of use of cloud based framework in educational sector. An investigation to identify and design a consistent framework as standardized tool in higher education is desirable and area of concern and research. There is no doubt that teaching and learning strategies based on the use of personal computing devices may pose a significant risk to aggravate the digital divide between students who have access to various resources and devices and the students who cannot afford the same.

So, there is a need of designing, Implementing and evaluating an LMS based teaching/learning in higher education.

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