

Smart Class Learning Management System for School Education

Suresh J. Raut

Post Graduate Teacher-Computer Science, J. H. Ambani Petrochemicals Vidyalaya , Nagothane, Raigad.

Abstract: Learning management system for school education using smart class is a simple server based application that is used today in various educational school and colleges. These systems are designed for students those are seeking education at school and colleges according to their syllabus of board or university. In this paper some of the characteristics of Smart Class Board and its other applications have described. Also it proposes the future modules.

Keywords: Smart Class, Smart board, Learning management system (LMS)

1. Introduction

a. LMS Definition:

“A learning management system (LMS) is a software application for the administration, documentation, tracking, reporting and delivery of educational courses or training programs.”^[1] They help the instructor deliver material to the students, administer tests and other assignments, track student progress, and manage record-keeping.



b. Smart Class Learning Management System:

Smart Class LMS having digital smart board is designed to deliver teacher led subjects. It includes two way interactive learning environments between student and teacher. This digital class room has become the most effectively used learning solutions in short span of time. Due to the innovative approach, layered structure and pedagogy, it has been appreciated by students and teachers. Smart Class exposed the students to 21st century teaching-learning environment.

The learning solutions are created by highly experienced teachers with illustrious teaching background. Smart class is currently installed in more than 8000 schools across India and Abroad.

c. Smart class learning management system for learners and teachers includes:

- Smart Learning Modules.
- Mind maps (Learning Objectives).
- Formative discussions and High Order Thinking Skills (HOTS) discussion platform.
- Virtual Labs using Animation.

- Assessment using Worksheets and MCQs tools.
- Interactive concept delivering with animations.
- Game based support activities.
- Test and Quiz.



d. Some of the features of Smart Classroom management system are:

- I. Integrated smart learning modules representation using smart board technology^{[2][3]}.
- II. Instant creation and sharing of concepts, knowledge, notes and assignments between the teachers and learners during and after class.
- III. The learning environment is different for Pre-Primary(Nursery/ KG Classes), Primary(1st to 5th classes), Secondary (6th to 12th classes) and Senior Secondary (11th and 12th Classes). For pre-primary and primary section, the Smart Learn Class program uses fun worksheets, phonetics, mind games, etc. For higher classes, it uses group quizzes, MCQs, formative and summative discussions based on higher order thinking skills (HOTS).
- IV. Management of live **assessment and group activities** with real time progress monitoring and result-analysis. This experimental and adaptive learning environment ensures education becomes engaging and personalized, and brings the best out of the learners.
- V. A simple projector-based classroom having a digital board having **Infra Red technology** which works as like **touch screen**.
- VI. Fully loaded with other devices like Keyboard, mouse, Think Net Device, Pen drive, Multimedia speakers, DVD/CD player.

e. Drawbacks:

- I. Smart class LMS is a course centered rather than student centered. It is designed according to the syllabus of ICSE /CBSE / DAV / State Board.
- II. Some trainer or teacher may have weak computer and information literacy.
- III. Some trainer or teacher may have different style of teaching as he/she have the practice of it.
- IV. Cost may be the factor for non implementation of smart class LMS of an educational organization.
- V. This system needs higher configuration and latest technology for implementation.

f. Design of Smart Class LMS.

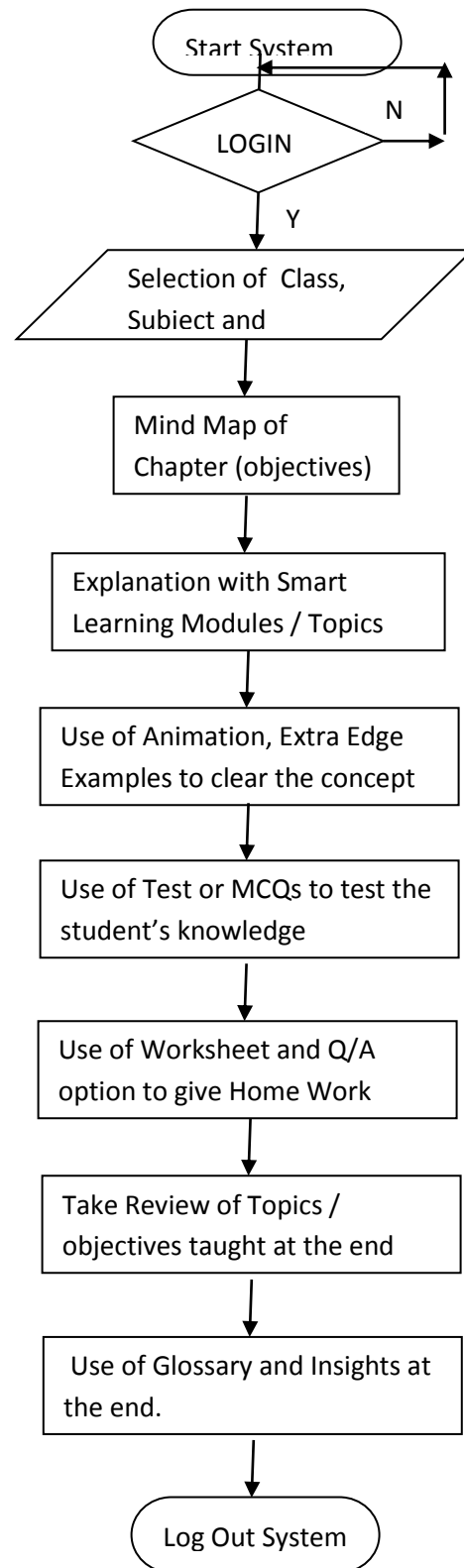
- a. **Smart Class LMS design:** It having following teaching tools. It shows a representation of a screen with the various options. The below diagram shows all the tools of learning which are used by a teacher in the class.^[5]



b. Learning Modules of Smart Class LMS :

- i. **Mind Map (Learning Objectives) :** It contains a brief introduction of a concept or a chapter show all topics.
- ii. **Smart Class Learning Modules (SCLM) :** It contains the actual content and examples for learning. All topics are represented by a multimedia presentation. This can be in interactive application.
- iii. **Animation:** A separate tool of 3D animation is provided for clear understanding of some concepts like blood cells, the human brain, data structures , stacks, queues, motion, etc.
- iv. **Tests:** After teaching a topic , teacher can take test by showing some questions. It show answer also but it can be hided.
- v. **MCQs.:** Another tool like Multiple Choice Question tool is given to revise the topics. Teacher can check student's progress of a particular topic.
- vi. **Worksheets:** This tool has tool has all worksheet on a chapter contains all type of questions. Teacher can give these worksheet to students to solve it at home.
- vii. **HOTs:** High Order Thinking skill questions are presented by this tool which is helpful to get more knowledge about a concept.

- c. **Activity Diagram for a teacher:** This flow chart shows that how a teacher can interact with the Smart Class LMS by using his given login.



2. Requirements for a smart class environment :

- i. **Content support:** There should be content support in the form of text files, audio files , video files, PDF files, PPT and Worksheet files,etc. Library of these files should be shared among the all users. Needs updating database at server time to time as per the CBSE/NCERT guidelines.
- ii. **Administration:** Administrator can maintain different accounts for the teachers and other staff members to access the system tools. Admin account is used to maintain and modify the system and the tools.
- iii. **Standard IT support :** This system requires IT support to the system by providing latest technological devices and software standards. System can be able to run on different platform and hardware. System should be work under the heavy load.
- iv. **Interactive Learning tools:** To understand concept , there is a requirement of 3D animation and interactive applications like MCQs, Guess the Answer, Fill in the blanks, etc tools.
- v. **Uploading content by teacher :** If teacher wants to show his own content like PPT file or other files creating by him/her , he/she can be upload the content on to server before taking class.

3. Proposed Smart Class LMS :

The design proposed framework is an activity to add needed features in an existing learning management system. The following are the modules needed to enhance the existing system.

- i. Curriculum Manager for adding and updating the topic or content.
- ii. Class catalog manager.
- iii. Computerised examination / online examination module.
- iv. Record keeping application of students like collection of fees, documents, notebooks, etc.
- v. A design tool needed which gives an opportunity to design own content by the teachers in the existing framework.
- vi. Sharing of a Cloud Storage with the help of Internet.
- vii.

4. Conclusion:

Based on the finding and conclusions of the study the following recommendations are put forward.

1. Smart class room learning helps students to increase the learning abilities.
2. Smart class may use as an experimental or supportive learning tool for the teachers.
3. The curriculum learning may be the easy to teach and complete within specified time by school / CBSE/NCERT.
4. Teachers can upload their own content like ppt, doc, xls, pdf or video file on server and they can show to students in the class. They can attach a flash drive to the smart board.
5. The tools like 3D animation and multimedia presentation helps students to understand the concept without any doubts.
6. Group discussions and Group activities are easily conducted by using Smart Class.
7. It is helpful to understand the mathematical theorem and science concepts.
8. It is easy to draw the geometrical figures and science diagrams using paint or drawing tool on smart board.

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