



International Journal of Innovative Research in Science Engineering and Technology (IJIRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)



Impact Factor: 8.699

Volume 14, Issue 3, March 2025

E – Learning Management System

Om Bapodra, Mosin Vinchhi, Nakul Chauhan, Nikhil Singh, Asst Prof. Ashish Dubey

Student, Department of Computer Science and Engineering, Parul University, Vadodara, Gujarat, India

Department of Computer Science and Engineering, Parul University, Vadodara, Gujarat, India

ABSTRACT: In the modern digital era, the need for affordable and efficient learning platforms is constantly on the rise. SkillBoost is a revolutionary e-learning management system that aims to empower learners and teachers alike. Contrary to conventional platforms, SkillBoost presents a dynamic environment where students can switch between roles as both producers and consumers of learning content with ease. SkillBoost offers an easy-to-use interface for teachers to create and release interactive courses, complete with multimedia materials, assignments, and quizzes. While students can browse a wide variety of courses tailored to their interests and skill levels, join them, and participate in collaborative learning opportunities.

KEYWORDS: Online Education, Learning Platforms, Digital Learning, Student Engagement, Personalized Learning
Index Terms—component, formatting, style, styling, insert

I. INTRODUCTION

The SkillBoost project report gives a detailed description of the development and deployment of an innovative e-learning management system (e-LMS) that enables users to function both as instructors and learners. The primary aim of the platform is to build a flexible platform where users can freely create and consume learning content. The report starts by defining the basic functionalities, such as user-friendly course creation tools, content management, and secure enrollment options. The dual-role capability enables students to upload and manage their own courses, as well as enroll in others, And creating a collaborative learning environment. User Management: Role-based access for administrators, instructors, and learners.

II. SYSTEM ARCHITECTURE

A. Technical Components The application is developed using the following technological stack:

- Frontend: ReactJS, Tailwind CSS, npm packages
- Backend: Express.js, Node.js
- Database: MongoDB
- Storage
- Authentication

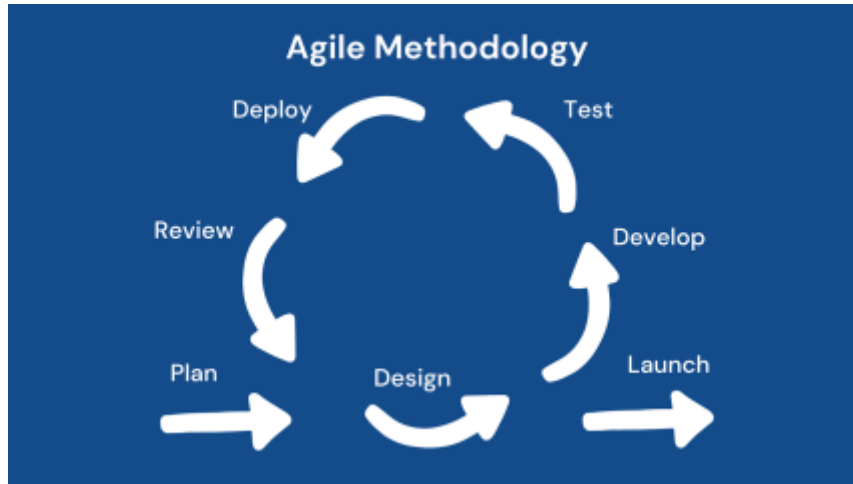
B. KEY FEATURES

- User Management: Role-based access for administrators, instructors, and learners.
- Integration and Scalability: Integration with third-party tools like CRMs, HR systems, or payment gateways.
- Gamification: Leaderboards, badges, and rewards to increase engagement.
- Feedback and Surveys: Tools for gathering learner feedback.

III. METHODOLOGY

A. Development Approach

- The project employed an Agile development methodology, emphasizing: • Iterative development cycles • Continuous user feedback integration • Flexible feature prioritization



B. Development

- Chose suitable technologies, frameworks, and tools for frontend and back-end development.
- The project team opted for ReactJS for the front end, Express.js for the back end, and MongoDB for database management due to their scalability, flexibility, and suitability for the project's requirements.
- Used core features as per industry standards and best coding practices to provide clean, modular, and maintainable code. Core functionalities like user authentication, course management, and payment processing were given priority in initial development phases.

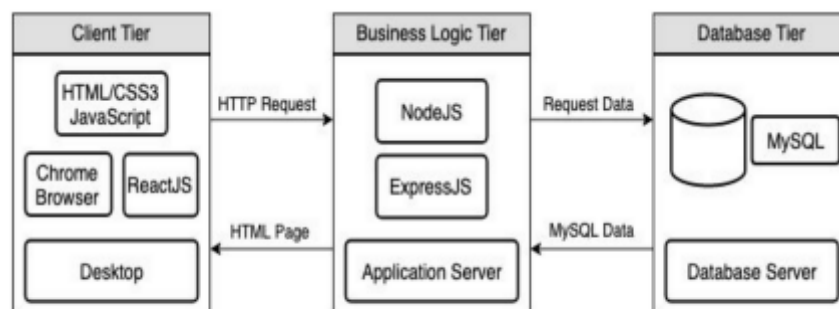


Fig. 2. System Architecture.

IV. IMPLEMENTATION DETAILS

A. Frontend Development

Responsive design for crossplatform compatibility. Intuitive user interface for easy navigation. Integration with APIs for dynamic content.

B. Backend Development

- RESTful APIs or GraphQL . Authentication and authorization (e.g., OAuth, JWT).
- Business logic for course management, assessments, and reporting.

C. Database Design

- Entity-Relationship (ER) model for defining relationships between users.

- Courses and progress. Optimization for query performance.

V. RESULTS AND PERFORMANCE

The application demonstrated significant capabilities in:

- Real-time crime alert dissemination.
- Community engagement.
- Emergency response facilitation.

Key performance metrics include:

- Personalized Learning.
- Student Engagement.

VI. FUTURE SCOPE

Potential future enhancements include:

- Adding more Gamification features.
- Natural Language Processing (NLP) for Feedback and Support.
- Advanced Analytics and Learning Insights.
- Integrated Content Annotation.

VII. CONCLUSION

In summary, the SkillBoost platform is a revolutionary force in the context of online learning, representing a distinct and groundbreaking concept. Through the ability of students to become both consumers and creators of educational material, SkillBoost reclassifies conventional terms within learning communities. The orientation of the platform towards inclusivity, accessibility, and quality assurance promotes a platform where diverse knowledge is exchanged and appreciated.

REFERENCES

1. Islam, N., Beer, M., Slack, F. (2015). "E-learning challenges faced by academics in higher education: A literature review." *Journal of Education and Training Studies*, 3(5), 102–112. DOI: 10.11114/jets.v3i5.1033
2. Yilmaz, R. (2017). "Exploring the role of e-learning readiness on student satisfaction and motivation." *Computers in Human Behavior*, 70, 251–260.
3. Ruiz, J. G., Mintzer, M. J., Leipzig, R. M. (2006). "The impact of e-learning in medical education." *Academic Medicine*, 81(3), 207–212.
4. EdTech Magazine (2023). "The Future of Learning Management Systems in Higher Education." Available at: <https://edtechmagazine.com>
5. Open LMS (2023). "A Guide to Open Source Learning Management Systems." Available at: <https://www.openlms.net>
6. Hall, B. (2007). *Learning Management Systems: How to Choose the Right System for Your Organization*. ASTD Press. ISBN: 978-1562864642.
7. Clark, R. C., Mayer, R. E. (2016). *E-learning and the Science of Instruction: Proven Guidelines for Consumers and Designers of Multimedia Learning*. Wiley. ISBN: 978-1119158661



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 9940 572 462  6381 907 438  ijirset@gmail.com



www.ijirset.com

Scan to save the contact details