

LEARN-SHARE PLATFORM

A PROJECT REPORT

Submitted by

Mamidala Aravind - B211007

P Balaraju - B210110

B Sharath - B211328

Of

Bachelor of Technology

Under the guidance of

Mrs. Lingavva

Asst.Professor

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES

BASAR, NIRMAL (DIST.),

TELANGANA - 504107

DEPARTMENT OF CSE RGUKT

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Project Report submitted to
Rajiv Gandhi University of Knowledge Technologies, Basar
for the partial fulfillment of the requirements
for the award of the degree of

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DEPARTMENT OF CSE RGUKT

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES,
BASAR

CERTIFICATE

This is to certify that the Project Report entitled LEARN-SHARE PLATFORM submitted by Mamidala Aravind (B211007), P Balaraju (B210110), and B Sharath (B211328), is a bonafide record of the work and investigations carried out by them under my supervision and guidance. The report has been submitted in partial fulfillment of the requirements for the degree of Bachelor of Technology in Computer Science and Engineering at Rajiv Gandhi University of Knowledge Technologies, Basar .

PROJECT SUPERVISOR

HEAD OF DEPARTMENT

Mrs. LINGAVVA

Dr. VENKAT RAMANA

Assistant Professor

Assistant Professor

EXTERNAL EXAMINER

DEPARTMENT OF CSE RGUKT

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES,

BASAR

DECLARATION

I/We hereby declare that the work which is being presented in this project entitled, LEARN-SHARE PLATFORM submitted to RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES, BASAR in the partial fulfillment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY in COMPUTER SCIENCE AND ENGINEERING, is an authentic record of my/our own work carried out under the supervision of Mrs. LINGAVVA , Assistant Professor in Department of Computer Science and Engineering , RGUKT-Basar.

The matter embodied in this project report has not been submitted by me/us for the award of any other degree .

Place : Basar

Name of the Student - ID No

Mamidala Aravind - B211007

Date : 24-10-2025

P Balaraju - B210110

B Sharath - B211328

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Mamidala Aravind - B211007

P Balaraju - B210110

B Sharath - B211328

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ABSTRACT

In recent years, the education sector has witnessed a significant transformation driven by advancements in digital technologies and artificial intelligence. Despite this progress, students, especially in rural areas, still face challenges in accessing timely information, learning resources, and collaborative platforms due to the lack of user-friendly digital tools. The Learn-Share Platform is developed as an intelligent, interactive, and community-driven web-based system aimed at empowering students through digital connectivity, accessibility, and collaboration. Learn-Share Platform integrates multiple educational resources under a single unified interface. The system utilizes React.js for the frontend, Node.js and Express.js for the backend, MongoDB for database management, and Socket.io for real-time communication. Students can interact with the platform to access course materials, connect with teachers, share resources, and participate in discussions. The platform features separate

administrative and user roles to maintain data integrity and control. Administrators can manage users, content, and complaints, while students can explore educational data, receive notifications, and collaborate in real-time.

The integration of real-time chat and file sharing ensures inclusivity for users with varying levels of digital literacy. Learn-Share Platform not only promotes transparency and efficiency in educational processes but also bridges the communication gap between students and teachers. It enables students to make informed decisions, enhances learning outcomes, and contributes toward inclusive education. The platform's modular design ensures scalability, allowing future integration of AI-driven tutoring, virtual classrooms, and predictive analytics. In summary, Learn-Share Platform serves as a comprehensive digital assistant for the student community, fostering innovation, accessibility, and empowerment in the ed-tech ecosystem.

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Chapter-1

Introduction

1.1 Overview

Education is the backbone of many societies, providing knowledge, skills, and opportunities for personal and professional growth. However, students, particularly in developing regions, face numerous challenges such as limited access to quality learning resources, lack of collaboration tools, and inadequate platforms for interaction with educators. With the advent of modern technologies like Artificial Intelligence (AI), Internet of Things (IoT), and Cloud Computing, these challenges

can be effectively mitigated through digital solutions.

The Learn-Share Platform has been developed as an all-in-one web application to assist students by providing real-time access to educational data, teacher connections, and collaborative tools. This system bridges the gap between traditional learning practices and digital education by integrating real-time communication, resource sharing, and data visualization capabilities into a single interactive interface.

Learn-Share Platform enables students to:

- Access course materials and resources.
- Connect with teachers and peers for guidance.
- Share files and participate in discussions.
- Report issues and receive admin support.
- Collaborate in real-time through chat and notifications.

The goal of Learn-Share Platform is to simplify the digital experience for students, especially those with limited technical literacy, through intuitive interfaces, real-time features, and community-driven collaboration.

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1.2 Problem Background

Education in India faces numerous problems due to information gaps and lack of technology adoption. Students often depend on outdated or fragmented resources regarding course materials, teacher availability, or collaborative platforms. This leads

to uninformed decisions such as missing important updates, poor resource sharing, or inadequate communication.

Major Issues Identified:

1. Resource Fragmentation:

Learning materials, teacher contacts, and discussion forums are available on separate platforms, making navigation cumbersome.

2. Limited Collaboration:

Students lack integrated tools for real-time interaction and file sharing.

3. Awareness Gaps:

Students are often unaware of available resources or teacher support.

4. Manual Management:

Traditional methods of storing and sharing data lead to inefficiency and data loss.

5. Digital Literacy Barriers:

Students struggle with complex interfaces and prefer intuitive, real-time interactions.

Learn-Share Platform addresses these issues through a centralized, real-time, interactive platform that merges all necessary educational tools into one place.

1.3 Project Motivation

The motivation behind the project arises from observing the communication and information gaps between students and educators. Many educational platforms remain underutilized due to limited awareness and accessibility barriers.

Our team envisioned a holistic educational ecosystem where:

- Students could connect instantly with teachers and peers.
- Resources are shared seamlessly and securely.
- The interface is as simple as possible.

- The system evolves to include AI-driven features in the future.

Fig.1.1: Bar Graph showing number of publications per year

Educational technology is making considerable progress in the context of the implementation of digital technologies, but the pace is still slow as compared to other domains such as healthcare, manufacturing, mining, automotive, energy, etc.

1.4 Objectives of the Project

The main objectives of the Learn-Share Platform system are as follows:

1. To develop a centralized digital platform that integrates educational resources, teacher connections, and collaborative tools.
2. To implement real-time communication using Socket.io for instant messaging and notifications.
3. To provide a user-friendly interface using React.js for ease of navigation and accessibility.
4. To ensure secure and scalable data storage through MongoDB and authentication.
5. To create separate roles for users and administrators, maintaining data control and integrity.
6. To empower students by making educational resources accessible and interactive.
7. To make the platform scalable for future features like AI tutoring and virtual classrooms.

Objective Technology Used

Real-time Communication Socket.io

File Sharing Multer

Authentication JWT

Database MongoDB

UI Development React.js

Admin Management Role-based Access

1.5 Scope of the Project

The scope of Learn-Share Platform covers multiple functionalities, targeting both students and administrators, and addressing the information and collaboration challenges in the education sector.

Functional Scope

- Student Dashboard: Displays resources, connections, and notifications.
- Teacher Connection Module: Allows students to connect with teachers.
- Resource Sharing Module: Enables file uploads and downloads.
- Real-time Chat: Instant messaging between users.
- Complaint System: Students can report issues to admins.
- Admin Access: Admin can manage users, content, and complaints.

Non-Functional Scope

- Responsive design for mobile and desktop users.
- Secure backend with authentication.
- Real-time updates and notifications.
- Error handling for network and user issues.
- Scalable for adding new modules in the future.

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- Error handling for speech and network failures.

- Scalable for adding new modules in the future.

1.6 Significance of the Project

The Learn-Share Platform is a significant step towards digital education and inclusive technology. It ensures that every student, regardless of location or technical skill, can benefit from technology.

Key Significance:

- Empowerment of Students: Provides access to resources and collaboration tools.
- Bridging the Digital Divide: Makes educational platforms accessible in remote areas.
- Efficiency in Learning: Real-time data enables better educational practices.
- Support for Educational Initiatives: Helps achieve Digital India and Smart Education visions.
- Data Transparency: Students can access verified resources and connections.
- Ease of Communication: Reduces barriers between students and teachers.

1.7 Methodology

The development methodology follows the Agile Model, where iterative development cycles were carried out. Each module - such as chat, file sharing, authentication, and connections - was designed, implemented, and tested individually before integration.

Phases:

1. Requirement Analysis - Identifying user needs and features.
2. System Design - Creating architecture, database schema, and API workflows.
3. Module Development - Implementing frontend and backend features.
4. Integration & Testing - Connecting modules and verifying performance.
5. Deployment - Hosting on cloud platforms for real-time access.
6. Maintenance & Feedback - Continuous updates based on user input.

5. Deployment - Hosting on Firebase for real-time access.

6. Maintenance & Feedback - Continuous updates based on farmer input.

Chapter-2

Literature Survey

2.1 Review of Related Work

This section presents a detailed review of research studies and literature relevant to Learn-Share Platform. These works provide insights into the integration of real-time communication, cloud computing, and collaborative technologies in education. They also emphasize the importance of accessibility for students. Each reviewed study contributes to the conceptual foundation and future development scope of Learn-Share Platform.

2.1.1 Real-time Collaboration Platforms for Education

Authors: Smith & Johnson (2022)

Publication: Journal of Educational Technology

Summary:

Smith and Johnson proposed a real-time collaboration platform for educational

institutions. The system leverages WebSockets and cloud services to enable instant communication, file sharing, and group discussions. The platform integrates with learning management systems and supports multimedia content.

Key Findings:

- Real-time features enhance student engagement.
- Cloud-based systems improve accessibility.

Relevance to Learn-Share Platform:

This research reinforces the use of real-time communication in educational platforms.

2.1.2 Digital Resource Sharing in Education

Authors: Lee et al. (2021)

Publication: International Journal of Educational Research

Summary:

This study focuses on digital resource sharing using cloud storage and APIs.

Key Findings:

- Secure file sharing improves learning outcomes.

Relevance to Learn-Share Platform:

Supports the file sharing module in our platform.

2.1.3 Awareness of Educational Resources

Authors: Gupta (2023)

Publication: Journal of Educational Extension

Summary:

This study assessed student awareness of digital educational tools.

Key Findings:

- Access to digital platforms increases resource utilization.

Relevance to Learn-Share Platform:

Justifies the centralized resource hub.

Conclusion of Review

The reviewed studies demonstrate how modern technologies can create accessible educational solutions. Learn-Share Platform builds upon these by combining real-time features and collaboration tools.

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Chapter-3

Existing Solutions

2.1 Introduction

The purpose of this chapter is to review existing educational platforms and applications.

2.2 Review of Existing Systems

2.2.1 Moodle

Overview: Open-source learning management system.

Features: Course management, forums.

Limitations: Limited real-time features.

2.2.2 Google Classroom

Overview: Platform for assignments and communication.

Features: File sharing, grading.

Limitations: Not fully integrated for all needs.

2.2.3 Proposed System

Learn-Share Platform integrates real-time chat, connections, and admin management.

2.4 Advantages of the Proposed System

1. Real-time Interaction
2. Centralized Resources
3. User-friendly Interface

2.5 Comparative Analysis

System	Real-time Chat	File Sharing	Admin Control
Moodle	Limited	Yes	Yes
Google Classroom	Yes	Limited	Yes
Learn-Share Platform	Yes	Yes	Yes

2.6 Expected Outcome

- Enhanced student collaboration.
- Improved access to resources.

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System Analysis

3.1 Problem Definition

Education faces challenges in resource access and collaboration. Learn-Share Platform aims to provide a unified platform for students to connect, share, and learn.

3.2 System Requirements

Functional Requirements: User registration, real-time chat, file sharing, admin panel.

Non-Functional: Responsive, secure, scalable.

3.2.3 Software Requirements

Frontend: React.js

Backend: Node.js, Express.js

Database: MongoDB

Real-time: Socket.io

3.3 Feasibility Study

Technical: Feasible with modern stack.

Economic: Cost-effective.

Operational: User-friendly.

3.4 System Objectives and Constraints

Objectives: Centralize educational tools, enable collaboration.

Constraints: Network dependency, API limits.

3.5 Summary

Learn-Share Platform addresses educational challenges through technology.

