LoopVerse – Educational Platform Report

1. Introduction

LoopVerse is a modern educational platform designed and developed using **React Native** and **Expo**. It caters to multiple user roles—**Admins**, **Teachers**, and **Students**—providing a comprehensive learning management system (LMS) with real-time capabilities. The platform offers a seamless experience across **iOS**, **Android**, and **Web**, including **Progressive Web App (PWA)** support.

2. Core Objectives

• To create a unified platform for online learning and communication.
• To facilitate course and event management for educational institutions.
• To enhance student engagement through gamification and real-time collaboration tools.
• To ensure secure role-based access control for different user types.

3. Key Features

3.1 Admin Dashboard
• Analytics & Reports: Real-time insights into platform activity.
• User Management: Add, edit, suspend, and manage all platform users.
• Course & Event Management: Full lifecycle control from creation to publishing.
• AI Chatbot Integration: Automated assistance for user queries.
• Theme Customization: Backend-persisted color themes for branding flexibility.

3.2 Teacher Dashboard
• Course Creation: Draft and publish workflows.
• Student Progress Tracking: Monitor learning milestones.
• Group Communication: Chat rooms for collaboration.
• Announcements: Share updates with student groups.
• Live Sessions: Host virtual classes in real time.

3.3 Student Dashboard
• Learning Hub: Centralized access to courses and materials.
• Progress Tracking: Monitor personal achievements.
• Gamification: Badges, streaks, and leaderboards to boost engagement.
• Profile Management: Set personal interests and learning goals.
• Event Registration: Join academic and extracurricular events.

4. Technical Architecture

Component	Technology Used
Frontend	React Native, Expo Router, Context API
Backend	Supabase (PostgreSQL)

Security	Role-Based Access Control (RBAC), Row-Level Security (RLS) policies
Database	Profiles, Courses, Events, Groups, Announcements
Theme System	Backend-persisted customization

5. Platform Support

• Mobile: iOS & Android
• Web: Full PWA compatibility
• Codebase: Shared cross-platform code for faster updates

6. Conclusion

LoopVerse successfully delivers a feature-rich, scalable, and secure learning management solution. With its multi-role system, modern user interface, and real-time capabilities, it meets the needs of educational institutions aiming for a digital transformation. Its cross-platform compatibility ensures accessibility for all users, whether on mobile devices or web browsers.