

EDUNIKETAN PRIVATE LIMITED

Live Learning & Virtual Classroom Technology Division

TheEduLive

Real-Time Virtual Classroom & Live Learning Infrastructure

Formal Collaboration Proposal

For Academic Technology & E-Learning Departments

Submitted By: Eduniketan Private Limited

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1. EXECUTIVE OVERVIEW

The shift to digital and hybrid learning has left most universities with a fragmented stack: a generic video-conferencing tool for lectures, a separate LMS for content, a spreadsheet for attendance, and no reliable way to know whether a class actually engaged its students. Generic conferencing software was built for corporate meetings, not classrooms — it was never designed to host a live coding session, run a pop quiz mid-lecture, or track exactly when a student joined and left..

The first gate of every campus hiring drive is an automated Online Assessment (OA). Product-based companies use these to eliminate candidates before any human recruiter is involved.

TheEduLive is purpose-built to close that gap. It is not a video-calling tool with an education label — it is a complete, full-stack virtual classroom ecosystem engineered to deliver immersive, interactive, and seamless live learning at institutional scale, from a single tutoring session to a mass lecture with thousands of concurrent participants.

Core Value Propositions

- **Broadcast-Grade Reliability:** Enterprise-grade live streaming, powered by LiveKit infrastructure, delivers ultra-low-latency HD video and audio for both massive broadcast lectures and intimate one-on-one sessions, with a pre-join lobby and real-time network diagnostics built in.
- **Deeply Interactive Pedagogy:** A genuine teaching environment, not a screen-share workaround — a Fabric.js whiteboard, a Monaco-powered integrated coding website, native document presentation, and live polling, all integrated directly into the classroom.
- **Built-In Academic Structure:** Batches, sections, and role-based dashboards for students, instructors, and admins bring the same structured hierarchy universities already use in academics into the live classroom itself.
- **Zero-Touch Operations:** Automated attendance logging, SMS and push reminders, server-side recording, and dynamic thumbnail generation run silently in the background, removing manual administrative overhead.
- **Enterprise Security & Scale:** Multi-layered authentication, AWS S3-backed storage, and a hardened backend built to support thousands of concurrent users without compromise.

2. THE VIRTUAL CLASSROOM GAP

Most institutions today rely on general-purpose conferencing software for live teaching. These tools were designed for business meetings, and the mismatch shows up everywhere — in disengaged students, untracked attendance, and instructors who have to bolt on three or four separate apps just to run one class. TheEduLive is designed around how a classroom actually works, not how a meeting does.

What Generic Conferencing Tools Provide	What Modern Live Education Demands	What TheEduLive Delivers
Basic video and audio calling.	Low-latency broadcast for both mass lectures and 1:1 tutoring, without buffering.	LiveKit-powered HD streaming with a pre-join lobby and live network diagnostics.
Screen-sharing as the only teaching tool.	A real teaching surface — whiteboard, live code execution, diagram libraries.	Fabric.js whiteboard, Monaco integrated coding website, and cloud/AI-ML stencil libraries.
Manual or self-reported attendance.	Mathematically accurate, audit-ready attendance records.	Automated join/left timestamp logging with precise duration calculation.
No academic hierarchy — just a meeting link.	Structured organisation across courses, batches, and sections.	Batches & Sections management with dedicated student, instructor, and admin dashboards.
No reminders — students must remember class timings themselves.	Timely, automated nudges before every session.	Background scheduler sending SMS (Twilio) and push (FCM) reminders 15 minutes before class.
Recordings dumped into raw, unlabelled cloud folders.	Recordings that are immediately discoverable and presentable.	Automated chunked recording with dynamic, auto-generated HD thumbnails per session.

3. TheEduLive PLATFORM ECOSYSTEM

3.1 Real-Time Virtual Classrooms & Live Streaming

Built on enterprise-grade LiveKit infrastructure, TheEduLive delivers ultra-low-latency, scalable video and audio conferencing that handles both massive broadcast lectures and intimate one-on-one tutoring without buffering or lag.

- **Pre-Join Lobby (The Green Room):** A dedicated staging area for students and instructors to test camera, microphone, and network strength before entering a live session.
- **Real-Time Network Diagnostics:** Live ping, packet loss, and bandwidth visibility for both instructors and students, directly inside the UI.

- **Advanced Broadcast Settings:** Granular instructor controls over streaming resolution, frame rate, and media inputs on the fly.
- **Automated Session Recording:** Server-side, high-fidelity recording with real-time chunk streaming to secure cloud storage, plus automated cleanup of stale recording data.

3.2 Interactive Learning & Collaboration Suite

TheEduLive goes well beyond standard video calls, with deeply integrated educational tools built directly into the live classroom.

- **Advanced Collaborative Whiteboard:** an infinite, Fabric.js-powered canvas with freehand drawing, shapes, text annotation, a real-time laser pointer, smart sticky arrows, drag-to-select area deletion, a drag-and-drop component library for cloud architecture and AI/ML diagramming, multiple themed backgrounds, and full undo/redo history.
- **Integrated Code Compiler (integrated coding website):** a fully functional Monaco Editor environment — the same engine that powers VS Code — letting instructors and students write, compile, execute, and debug code together live, across multiple programming languages.
- **Native Resource & Document Viewer:** a seamlessly embedded PDF and presentation viewer; instructors can push slides live to all students with “Present Live” or allow direct downloads.
- **Live Polling & Assessment System:** instantaneous polls and quizzes to gauge classroom comprehension in real time, with a complete Poll History available to instructors during the session.

3.3 Next-Generation Immersive Engagement

- **Architecture & System Diagramming:** specialised drag-and-drop stencils tailored for technical education, including dedicated Cloud Architecture and AI/ML system-diagramming menus.
- **Dynamic Theming Engine:** a beautifully crafted UI with smooth transitions, dark and light modes, and customisable aesthetic toggles for accessibility and personal comfort.

3.4 Unified Communication & Networking

- **Global Classroom Chat:** a persistent, real-time sidebar for class-wide discussion, Q&A, and link sharing.
- **Secure Direct Messaging:** a private messaging modal for secure one-on-one communication between students or between students and instructors.
- **Participant Roster & Instructor Controls:** bulk actions (mute all, grant or revoke mic/camera access for everyone) alongside individual controls to force-mute, disable camera, or remove specific students, plus per-student permission delegation for microphone, camera, and screen sharing.
- **Smart Notification Ecosystem:** an integrated notification bell keeping users informed of upcoming classes, new resources, and administrative announcements.

3.5 Academic Organisation & Role-Based Dashboards

- **Batches & Sections Management:** Logical organisation of students into courses, batches, and sections at scale.
- **The Student Portal:** A personalized dashboard for tracking enrolled courses, upcoming sessions, past recordings, and attendance records.
- **The Instructor Dashboard:** A command centre for instructors to schedule classes, manage makeup sessions, upload resources, manage rosters, and view engagement analytics.
- **Precision Automated Attendance Tracking:** Exact join and leave timestamps logged for every student, with duration automatically calculated — eliminating manual roll calls.
- **The Admin Control Panel:** A supreme oversight dashboard for managing user roles, platform health, database migrations, and global settings, backed by comprehensive audit and activity logging.

3.6 Automated Operations & Backend Intelligence

- **Smart Push & SMS Reminder Scheduler:** A background worker that scans the database every five minutes and triggers Twilio SMS and Firebase Cloud Messaging push notifications exactly 15 minutes before each class begins.
- **Dynamic Thumbnail Generation:** Once a recording is processed, the system automatically composites a bespoke 1280x720 HD thumbnail using the class title, description, and course-specific templates, then applies it to the published recording.

3.7 Enterprise-Grade Security & Cloud Architecture

- **Multi-Layered Authentication:** Firebase and Supabase authentication protocols protecting user identities and data.
- **Scalable Cloud Storage:** Deep AWS S3 integration for secure, infinitely scalable storage of lecture recordings, documents, and thumbnails.
- **High-Performance Backend:** An Express/Node.js backend with rate-limiting, strict security headers (helmet), and automated background task scheduling via Google Cloud Scheduler, built to handle thousands of concurrent users.
- **Progressive Web App (PWA) Capabilities:** A native “Install App Banner” lets users install TheEduLive directly to desktop or mobile for a seamless, app-like experience.

4. INSTITUTIONAL BENEFITS

Generic platforms teach students *what* an algorithm is. TheEduCode teaches students *why* it matters in a live system, and what breaks when they choose the wrong one.

4.1 For Academic Outcomes

- **Higher Student Engagement:** Interactive tools—live polling, a real whiteboard, and an in-browser IDE—keep students participating instead of passively watching a video feed.
- **Accurate, Defensible Attendance Data:** Automated, timestamp-based logging replaces manual roll calls and self-reported attendance, giving the institution defensible, audit-ready records.
- **No Lost Learning Time:** Course recordings are automatically processed, thumbnailed, and made available, so no student misses material because of a missed live session.

4.2 For Operations & IT

- **Reduced Tooling Sprawl:** No need to stitch together a video tool, a separate whiteboard app, a code-sharing tool, and a manual attendance sheet—TheEduLive consolidates them into one platform.
- **Lower Infrastructure Burden:** Cloud-native infrastructure on LiveKit and AWS S3 means the institution is not responsible for provisioning or maintaining streaming or storage servers.
- **Centralised Administration:** Role-based dashboards for admins, instructors, and students mean every stakeholder gets exactly the controls and visibility they need, without extra training overhead.

4.3 For Institutional Positioning

- **A Stronger Digital Learning Brand:** A modern, full-featured live learning platform—rather than a generic video call link—is a visible differentiator for prospective students and parents evaluating an institution's digital learning maturity.

5. WHY TheEduLive — COMPETITIVE DIFFERENTIATION

Capability	Generic Conferencing Tools (Zoom, Meet, Teams)	TheEduLive Ecosystem
Teaching Surface	Screen-sharing only.	Native Fabric.js whiteboard + Monaco in-browser IDE + diagramming stencils.
Academic Structure	Flat meeting links with no hierarchy.	Batches, sections, and role-based student/instructor/admin dashboards.
Attendance	Manual or self-reported.	Automated join/left timestamp tracking with precise duration calculation.
Engagement Tools	Basic reactions, limited polling.	Live polling with full poll history, integrated quizzes, classroom chat, and DMs.
Recording Workflow	Raw, unlabelled recordings.	Automated chunked recording with dynamic HD thumbnail generation.
Reminders	None built in.	Automated SMS (Twilio) and push (FCM) reminders 15 minutes before class.

Capability	Generic Conferencing Tools (Zoom, Meet, Teams)	TheEduLive Ecosystem
Instructor Control	Basic mute/remove.	Bulk and granular control over mic, camera, and screen-share permissions per student.

6. PLACEMENT ANALYTICS AND INSTITUTIONAL INTELLIGENCE

6.1 The Academic Engagement Ledger

Provides department heads with a mathematically accurate, automated record of classroom presence, eliminating manual roll-calls and enabling the instant identification of at-risk students with zero administrative friction.

6.2 Student-Level Insights

- **Precision Attendance:** Autonomously logs exact joined_at and left_at timestamps to calculate total session duration, completely automating roll-calls.
- **Comprehension Diagnostics:** Real-time polling and complete quiz histories allow instructors to instantly gauge and adapt to student understanding.
- **Engagement Telemetry:** Tracks active participation across the whiteboard, code IDE, and chat to distinguish true active learning from passive screen presence.
- **Network Profiling:** Built-in diagnostics (ping, packet loss, bandwidth) ensure connectivity issues are instantly identified and not mistaken for academic disengagement.
- **Audit Logging:** Comprehensive tracking of all platform actions guarantees complete academic accountability and security compliance.

7. IMPLEMENTATION ROADMAP

PHASE	TIMELINE	ACTIVITY
1. Data Ingestion	Days 1–2	Student/faculty rosters provisioned. Multi-cloud setup completed.
2. Configuration	Days 3–5	Batch mapping. Admin and Teacher portal setup.

3. Training	Days 6–7	Faculty onboarding workshop. Student application distribution.
4. Validation	Day 8	Institution-wide dry-run examination to verify security layers.
5. Go-Live	Day 9	Production ready. Practice and assessments commence.
6. Support & Optimization	Ongoing	Quarterly system audits, feedback loops, and feature updates.

8. PROVEN TRACTION & INSTITUTIONAL VALIDATION

TheEduLive is rigorously stress-tested and actively deployed at scale, delivering flawless performance under heavy institutional loads.

DEPLOYMENT	CONTEXT	RESULT
Lovely Professional University	Live academic sessions for a cohort of 500+ students.	99% Uptime. Flawless streaming with zero dropped connections.
High-Density Load	500+ concurrent users actively utilizing streaming, IDE, and whiteboards.	Zero lag. Ultra-low latency sustained across our distributed architecture.
Automated Administration	Live tracking of attendance and engagement telemetry.	100% precision. Complete elimination of manual faculty roll-calls.

Performance Metrics:

- **Faculty NPS:** 91 / 100
- **Student NPS:** 87 / 100

9. NEXT STEPS

STEP	ACTION	TIMELINE
1. Executive Demo	30-minute live platform demonstration for university leadership.	Within 5 days.
2. Pilot Deployment	Department-level rollout to validate zero-latency streaming and automation features.	Post-demo agreement.
3. Full Integration	Institution-wide cloud deployment and dashboard configuration.	Semester start.

10. ABOUT EDUNIKETAN PRIVATE LIMITED

Eduniketan Private Limited is a specialised EdTech company with a singular institutional mandate: to bridge the gap between what universities teach and what companies actually hire for.

We do not teach syntax. We build engineering mindsets. We do not deliver courses. We deliver career transformations.

Every programme, every question, and every feature on TheEduCode platform is designed with a single governing question: Will this help a student get hired at a great company?

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We look forward to building a long-term academic partnership with your institution — one that directly strengthens your students' placement outcomes and elevates your university's industry reputation.

Warm Regards,

Souvik Gupta & Saif Siddique

Directors | Eduniketan Private Limited

TheEduLive — Virtual Classroom Division

This proposal is confidential and submitted exclusively for institutional collaboration purposes. All programme details, pricing, and curriculum are subject to finalisation upon mutual discussion. | © 2026 Eduniketan Private Limited. All rights reserved.