# EduSphere - Revolutionizing Education

## -Aditya, Joseph, Bhuvana

*Empowering every learner to master learning at their own pace, anytime, anywhere.*

# Section 1

## by  Aditya

- Problem Statement

- Vision

- User Persona

- Product Market Fit

- Business Requirement

- Technology Requirement

# The Challenge: Bridging the Gap

### Inaccessible & Ineffective

Many students face "one-size-fits-all" approaches that ignore individual learning styles and pace.

### Digital Divide

Low internet connectivity and mobile-only access create inconsistent online learning experiences.

### Lack of Support

Students lack real-time help and adaptive feedback for complex concepts.

### Language Barriers

Most platforms ignore local languages, alienating millions of students.

### Low Engagement

Minimal gamification and interactivity fail to sustain interest in learning.

### Limited Involvement

Lack of dashboards and coaching tools limits parental and teacher involvement.

# Our Vision: Personalized, Inclusive, AI-Powered Math Mastery

> "To revolutionize math education in India through a deeply personalized, inclusive, and AI-powered adaptive learning system that empowers every learner to master math at their own pace — anytime, anywhere."

# Meet Priya: Our Target Learner



## Priya Sharma, 12

A 12-year-old girl from a small town in Maharashtra, Priya uses a shared smartphone with 3G/4G connectivity.

### Pain Points

- Struggles with difficult concepts.
- Limited access to teachers.
- Parents lack math knowledge.
- Prefers learning in local language.

### Learning Style

- Likes puzzles and games.
- Needs step-by-step explanations.
- Needs encouragement and rewards.
- Learns best at night or on weekends.

### Goals

- Master math concepts.
- Enjoy learning through visuals and rewards.
- Easy mobile-based learning at home.

# Product-Market Fit: Addressing Diverse Needs

| | | | |
|---|---|---|---|
| Student (Age 10-16) | Confusion, exam fear, lack of attention. | Multilingual, low-bandwidth, offline access, gamification. | Simple, colorful, interactive, game-like UI with rewards. |
| Parent (Age 30-45) | Can't evaluate child's performance, limited time. | Simple onboarding, dashboard, local notifications. | Clear, trustworthy, visual insights, minimal complexity. |

Our product is designed to meet the unique needs of both students and parents, ensuring effective and engaging math education for all.

# Business & Technology Imperatives

## Business Requirements

### Personalized Education

Adaptive learning paths tailored to each student.

### Offline Access

Uninterrupted learning in low-connectivity areas.

### Multilingual Support

Content available in various Indian languages.

### Secure Data Handling

Ensuring privacy and protection of user information.

## Technology Requirements

### AI/ML Models

Personalized pathways and predictive analytics.

### Conversational AI

Real-time doubt resolution in Indian languages.

### Scalable Backend

Cloud architecture with robust offline caching.
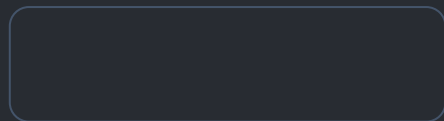
### Mobile-First Frontend

Intuitive React Native application.

# Section 2

## – Joseph

- Affinity Mapping

- User Flow

- Story Mapping

- User Journey Mapping

# Affinity Mapping: Understanding Core Themes

| Onboarding | User Needs | Learning Content | | Technology & Integration | User Personas | Pain Points | Opportunities |
|---|---|---|---|---|---|---|---|
| Email / mobile number / referral code | Personalized learning paths | Curriculum-aligned math topics | Adaptive quizzes and assessments | Machine learning for personalization | Students | One-size-fits-all teaching methods | Gamification to boost engagement |
| OTP / Password | Real-time feedback and hints | Interactive exercises and simulations | AI-driven difficulty adjustment | Integration with LMS platforms | Teachers and tutors | Low student engagement | AI tutors for 24/7 support |
| Terms and conditions | Motivation through gamification | Conceptual videos and visual aids | Spaced repetition for retention | Mobile and desktop compatibility | Parents / Guardians | Difficulty identifying student weaknesses | Peer learning and collaboration |
| Profile creation | Support for different learning styles | Practice problems with step-by-step solutions | Learning analytics dashboard | Offline access for low-connectivity areas | School Administrators | Limited teacher time for individual support | Multilingual support |
| Prompt user when enters wrong password | Parent and teacher visibility into progress | Real-world math applications | Goal setting and progress tracking | Data privacy and security compliance | | Math anxiety and lack of confidence | Teacher dashboards with actionable insights |

# User Flow: Seamless Learning Journey

Our intuitive user flow ensures a smooth and engaging experience for students, guiding them from learning new concepts to practicing and tracking their progress.
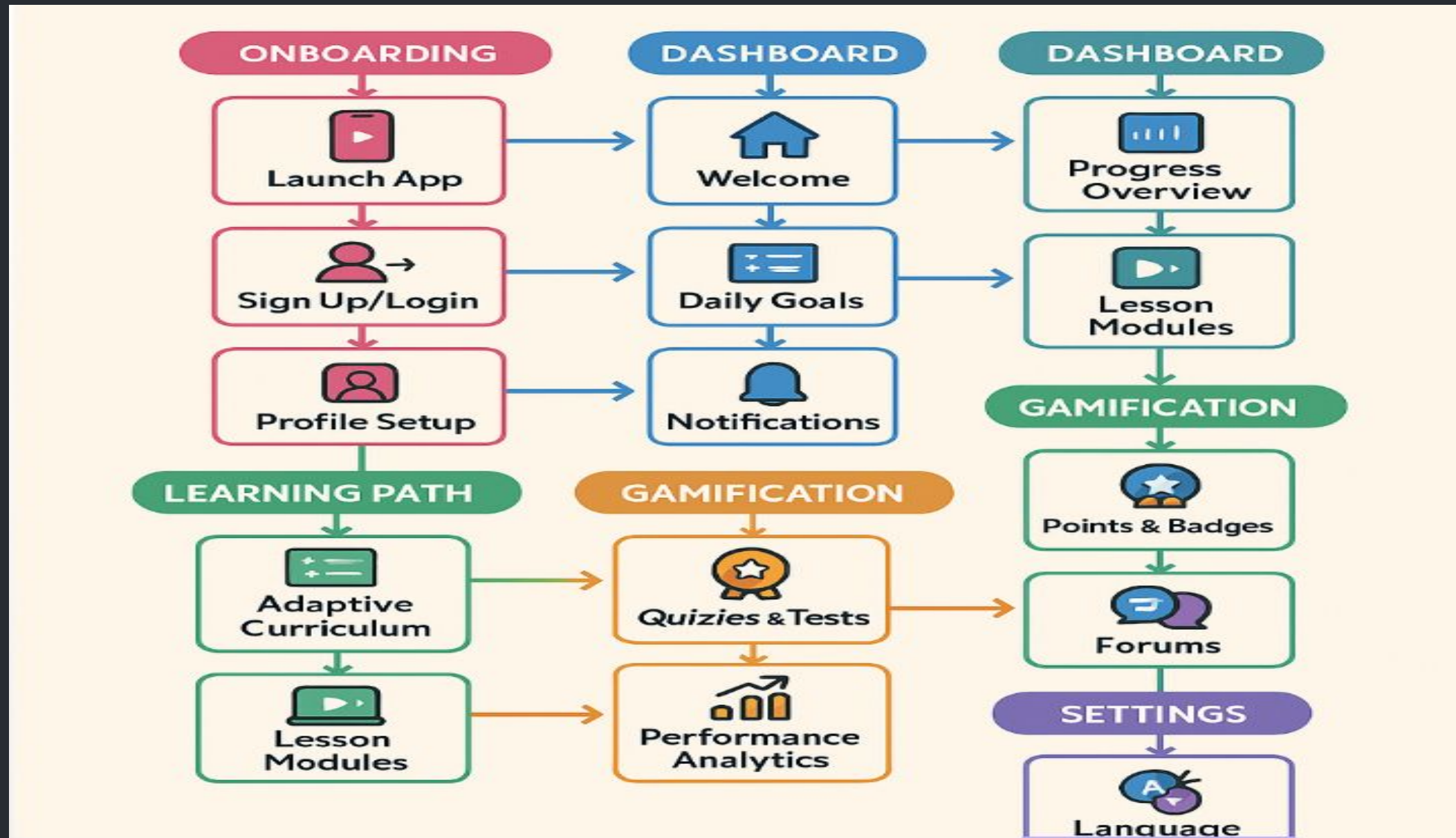
# Story Mapping: Priya's Learning Journey

This user map illustrates Priya's interaction with the platform, highlighting how each feature addresses her specific pain points and supports her learning style.

| User Activity | Onboarding | Dashboard | Learning Path | Practice & Assessment | Gamification | Support & Community | Settings |
|---|---|---|---|---|---|---|---|
| **Release 1** | Launch App | Set/View Daily Goals | Access Adaptive Curriculum | Begin Smart Practice | Earn Points & Badges | Ask a Tutor | Change Language |
| | Sign Up / Login using School Registration Number | Check Progress Overview | Choose Topic | Take Quiz & Tests | View Leaderboards | View Reports | Manage Notifications |
| | Enter Password | View Notifications | Start Lesson Module | Review Performance Analytics | Complete Challenges | Chat Box / Call | Update Account Info |
| | Select Role: Student | | Offline Access | | | | Forgot Password |
| | Set Up Profile | | | | | | |
| **Release 2** | 2 Factor authentication | | On Demand Video Content | Predictive Analysis | Abacus Integration | Join Forums | |

# Story Mapping: Empowering Parents & Teachers

Our platform offers dedicated tools for parents and teachers, enabling them to monitor progress, provide support, and stay engaged in the student's educational journey.

| User Activity | Onboarding | Dashboard | Learning Path | Practice & Assessment | Gamification | Support & Community | Settings |
|---|---|---|---|---|---|---|---|
| **Release 1** | Launch App | View Class Overview | Assign Curriculum | Create Practice Sets | Track Student Rewards | Access Teacher Forums | Change Language |
| | Sign Up / Login using Ph.no/Email | Monitor Student Progress | Review Lesson Plans | Schedule Quizzes | Create Challenges | Collaborate with Peers | Manage Class Settings |
| | Get OTP / Enter Password | Set Learning Goals | Customize Topics | Analyse Class Performance | Complete Challenges | View Parent Reports | Notification Preferences |
| | Select Role: Teacher / Parent | Overview of Child's progress | Child Monitoring | | | | Account Management |
| | Set Up Profile | | | | | | Forgot Password |
| | Link Child Account | | | | | | |
| **Release 2** | 2 Factor authentication | | | Analyse Student Performance using Predictive Analysis | Abacus Integration | Message Teacher | Educational Tips |

# User Journey Map

Persona : Maths education in India for students through adaptive learning system

Platform : Edusphere

Scope : To empower every learner to master math at their own pace with AI-Powered adaptive learning system

| Journey phase | Awareness | Onboarding | Engagement | Practice & Assessment | Motivation | Support | Retention |
|---|---|---|---|---|---|---|---|
| Touchpoints | School recommendation, Ads, Peer suggestions | App download, Sign up, Role selection, Profile setup | Dashboard, Adaptive learning path, Lessons | Quizzes, Feedback, Progress tracking | Badges, Leaderboards Encouragement messages | Help center, Tutor chat, Forums | Progress reports, Goal setting, Continued learning |
| Opportunities | Increase brand visibility in schools and social media | Simplify onboarding steps and offer guidance | Enhance UI and personalize learning journey | Offer adaptive feedback and celebrate milestones | Introduce more gamified elements and social sharing | Ensure 24/7 support and active community | Send regular updates and personalized learning plans |
| Emotions | Curiosity, Interest | Motivation, Slight confusion | Focused, Encouraged | Challenged, Accomplished | Pride, Competitive spirit | Relieved, Supported | Confidence, Loyalty |

# Section 3 - Bhuvana

- User Stories & Acceptance Criteria

- MVP

- Product Roadmap

- Backlog Prioritisation

- Kanban Model

- Capturing User Feedback on MVP

- Competitor Analysis

# EduSphere – User Stories and Acceptance Criteria

## Personalised Adaptive Learning Paths

- As a learner, I want my starting point assessed so my journey feels just right.
- As a learner, I want the app to remember my past struggles and reroute me for mastery.
- As a parent, I want to view my child's adaptive path and understand why it's chosen.

## Real-time Feedback & Instant Hints

- As a learner, I want to see instantly if my answer is correct to boost engagement.
- As a learner, I want gentle, supportive error messages that encourage retry.
- As a parent, I want to see feedback patterns to reassure me of constructive correction.

## Step-by-step Problem Solving

- As a learner overwhelmed by big problems, I want each math challenge split into bite-sized steps.
- As a visual learner, I want diagrams/animations at each solution stage.
- As a parent, I want to watch my child's step-by-step progress replay.

## Gamification & Rewards

- As a learner, I want points for every correct answer and badges for consistent activity streaks.
- As a competitive learner, I want to view and filter leaderboards.
- As a parent, I want to receive updates on achievement unlocks.

## Multilingual Support

- As a Marathi learner, I want all content in Marathi for full comprehension.
- As a bilingual learner, I want to toggle between English and my mother tongue.
- As a parent, I want to choose the default app language for my child.

## Mobile-first and Offline Access

- As a user, I want the full LMS accessible on any smartphone size.
- As a learner, I want offline download options for content and to sync later.
- As a teacher, I want to track offline progress for all my students.

## AI-driven Predictive Analytics

- As a parent, I want alerts when my child is at risk of falling behind.
- As a learner, I want personalized study tips generated by AI.
- As a teacher, I want a dashboard with at-risk and high-achieving students highlighted.

## Integration of Conversational AI / Chatbots

- As a learner, I want to ask math questions anytime and get instant, relevant answers.
- As a user, I want the chatbot to be polite, supportive, and never judgmental.
- As a parent, I want to monitor chatbot interactions for safety.

## Content Management and Customization

- As a teacher, I want intuitive tools to create and sequence custom lessons.
- As a parent, I want to hide or highlight certain topics for my child.
- As a learner, I want to request custom content from my teacher.

## Data Privacy and Compliance

- As a parent, I want the assurance that all data is securely encrypted.
- As a minor, I want parental consent approval before sign-up.
- As a user, I want transparent explanations of what data is collected.
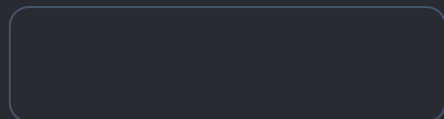
# Minimum Viable Product (MVP) Focus

Our MVP prioritises features that deliver immediate value and validate core assumptions, ensuring a strong foundation for future development. These elements are critical for initial user engagement, accessibility, and establishing trust.

## Personalised Adaptive Learning Paths
Basic diagnostic assessment with adaptive recommendation of math topics and progression.

## Real-time Feedback & Instant Hints
Immediate correctness feedback and contextual hints to scaffold learning.

## Step-by-step Problem Solving
Break down complex problems into sequential steps with clear explanations.

## Mobile-first & Offline Access
Fully functional on smartphones, allowing offline content access and progress sync.

## Multilingual Support (Core Languages)
Interface and content available in English, Hindi, and key regional languages.

## Basic Gamification Elements
Points, badges, and streak tracking for motivation and engagement.

## Data Privacy & Compliance Controls
Secure data encryption, parental consent workflows, and role-based access.
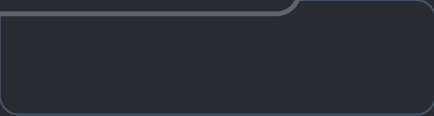
# Minimum Viable Product (MVP)

Our MVP focuses on delivering core value through essential features that directly address key user needs and ensure a functional, testable product for early validation.

**1**  **Phase 1: Foundation Setup (Months 1-2)**

Establish project vision, gather requirements, and define core workflows.

**2**  **Phase 2: Core System & MVP (Months 3-8)**

Build the fundamental infrastructure for personalized adaptive learning and launch the Minimum Viable Product.

**3**  **Phase 3: Intelligence & Engagement (Months 9-14)**

Embed advanced AI and social features, expanding content capabilities.

**4**  **Phase 4: Advanced Features & Reporting (Months 15-20)**

Deepen engagement through technological innovations and strengthen reporting mechanisms.

**5**  **Phase 5: Pilot, Feedback & Scale (Months 21-24)**

Execute a wide beta launch, gather critical usage analytics, and refine the user experience.
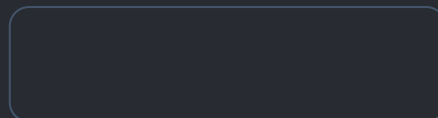
# Backlog Prioritisation

Our MVP features are prioritised to build a robust foundation, focusing on the most critical aspects for an engaging and effective initial launch. Each feature plays a vital role in delivering core value to our learners.

| | | |
|---|---|---|
| Personalised Adaptive Learning | High (1) | Core learning path, engagement, and adaptive progression. |
| Real-time Feedback & Hints | High (1) | Immediate learning correction and motivation. |
| Step-by-step Problem Solving | High (1) | Conceptual clarity and manageable problem approach. |
| Mobile-first & Offline Access | High (1) | Accessibility across India's diverse devices & connectivity. |
| Multilingual Support (Core Languages) | High (1) | Language inclusivity for wider learner base. |
| Basic Gamification & Rewards | High (1) | Motivation and retention especially for younger users. |
| Data Privacy & Compliance | High (1) | Trust and legal compliance for minors. |
| Progress Tracking & Reporting | High (1) | Transparency, motivation, and user/parent/teacher insights. |

# Kanban Model for Workflow Management

To effectively manage our development sprints, we will implement a Kanban workflow. This visual approach will enhance transparency, facilitate task prioritisation, and streamline the continuous delivery of features.

| | | | | | |
|---|---|---|---|---|---|
| Define diagnostic test logic | Build initial diagnostic module | Develop adaptive content engine | QA instant feedback and hint system | Hindi translation for lessons | Set up cloud infrastructure |
| Design personalized path visualization UI | Implement point/badge reward system | Mobile offline caching & sync | User testing for stepwise problem interface | Approval for parental consent design | MVP minimum UI design completed |
| Create language selector interface | Encrypt data storage & transit | Parental consent implementation | Security compliance audit | Waiting on adaptive algorithm parameters | Demo version of adaptive engine |
| Draft progress dashboard visualizations | User onboarding workflow | UI for feedback hints | Review staging build | Copywriting for gamification messages | Initial user story definitions |

Tools like Jira, Asana, and Trello can be integrated with our CI pipeline for seamless workflow automation.
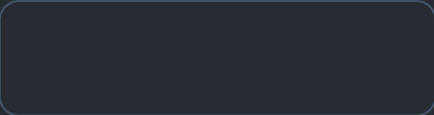
# Agile Development: Kanban Model for MVP Workflow

Our Kanban board visualizes the flow of work, from ideation to completion, ensuring transparency and efficiency in our development sprints.

| Backlog | To Do | In Progress | In Review / Testing | Blocked / Waiting | Done |
|---------|-------|-------------|---------------------|-------------------|------|
| Define diagnostic test logic | Build initial diagnostic module | Develop adaptive content engine | QA instant feedback and hint system | Hindi translation for lessons | Set up cloud infrastructure |
| Design personalized path visualization UI | Implement point/badge reward system | Mobile offline caching & sync | User testing for stepwise problem interface | Approval for parental consent design | MVP minimum UI design completed |
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**Tools for Implementation:** Utilize robust online tools such as Jira.. Integration with continuous integration (CI) pipelines and testing tools will further automate workflow and enhance efficiency.

# Capturing User Feedback: Post-MVP Launch

Post-MVP launch, rigorous feedback collection is crucial. We will employ a multi-faceted approach to gather both quantitative and qualitative insights from learners, parents, and educators, ensuring continuous improvement and alignment with user needs.

## User Engagement & Behavior Metrics

- Track daily/weekly active users and session length.
- Identify most and least used features.
- Measure completion rates for lessons and assessments.
- Monitor offline usage and sync behaviour.

## Qualitative User Feedback

- Conduct usability testing with learners and parents.
- Gather satisfaction feedback on key features.
- Identify frustration points and areas for improvement.

## Learning Outcome Indicators

- Collect pre- and post-session test scores.
- Assess improvement through adaptive paths.
- Analyse hint usage and feedback interactions.

## Parent and Educator Insights

- Collect feedback on progress dashboard usability.
- Assess comfort with data privacy and consent.
- Understand needs for content customisation and reporting.
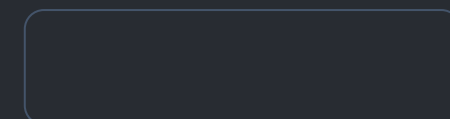
# Competitive Landscape Analysis

Our detailed competitive analysis highlights key differentiators and market positioning against leading educational platforms.

| Platform | Adaptive Tech | Live Classes | Gamification | Multilingual | Personal Reporting | Analytics | Doubt Solving | Unique/Top Feature | Key Limitation |
|---|---|---|---|---|---|---|---|---|---|
| Byju's | ✔ | ✘ | Moderate | Partial | ✔ | Good | Partial | Video lessons + Adaptive engine | Limited direct human support |
| Khan Academy | ✔ | ✘ | Low | ✔ | ✔ | Good | Partial | Free, mapped Indian content | No live classes/gamification |
| Vedantu | Partial | ✔ | Moderate | Partial | Partial | Good | ✔ | Live interaction + instant doubt | Less self-paced adaptivity |
| Toppr | ✔ | ✔ | Low | Partial | ✔ | Excellent | ✔ | AI/ML driven adaptive learning | Overwhelming interface |
| LogIQids | ✔ | ✘ | High | Partial | ✔ | Good | ✘ | Logical/aptitude focus, gamified | Not math curriculum deep dive |
| beGalileo | ✔ | Partial | Low | Partial | ✔ | Good | Partial | Remedial adaptivity & reporting | Fewer engagement features |
| Extramarks | Partial | ✔ | Strong | Partial | ✔ | Excellent | ✔ | 3D videos + blended live | Complexity, depth of adaptivity |
| Unacademy | Low | ✔ | Low | Partial | Partial | Good | ✔ | Competitive exam orientation | No true adaptivity |
| DreamBox | ✔ | ✘ | Moderate | ✘ | Partial | Excellent | ✘ | Adaptive engine, progress focus | India curriculum support weak |
| Eduten | ✔ | ✘ | Low | Partial | ✔ | Excellent | ✘ | AI-personalized K–12 mastery | Localization, engagement lacking |

**Legend:** ✔ = Well-established/strong  Partial = Feature present, limited scope  ✘ = Absent or not significant