

EduThon 2025 – The UBA School Innovation Hackathon Guidelines

1. Abstract

The UBA EduThon 2025 on School Education, organized by the Subject Expert Group at MNIT Jaipur, will be a 5-day online event designed to harness student creativity and generate scalable, cost-effective innovations inspired by the School Model and progressive state education policies. The hackathon focuses on creating solutions tailored for rural village schools to improve education delivery, inclusivity, and community engagement.

Participants will develop implementable ideas and prototypes during this intense online sprint, benefiting from expert mentoring and virtual collaboration. The best solutions will be piloted in UBA villages, ensuring a direct impact on rural education.

2. Introduction

Despite many government initiatives, rural schools face challenges such as resource scarcity, lack of trained teachers, limited digital access, and community disengagement. The School Model and various state education policies offer replicable frameworks that emphasize equity, technology integration, teacher training, and student-centric learning, which can be adapted for rural contexts.

The EduThon 2025 will:

- Engage students from UBA-affiliated institutes in a 5-day online challenge to design solutions based on these models.
- Encourage ideas addressing classroom innovation, teacher empowerment, technology use and community participation.
- Promote rapid prototyping and virtual collaboration, culminating in solutions ready for pilot implementation in rural UBA villages.

This approach strengthens the link between policy insights, student innovation and rural educational transformation.

3. Objectives

- Provide a national online platform for rapid innovation in rural education inspired by proven state models.
- Facilitate mentorship and capacity building for participating students and institutes.
- Generate implementable prototypes aligned with School Model and other progressive education policies.
- Enable direct pilot testing and feedback loops in UBA villages.
- Foster sustainable student-community partnerships through policy-driven innovation

4. Themes- Problem Statement

The following problem statements are designed to inspire participants in developing practical, scalable, and sustainable solutions for school education challenges in rural India.

Each problem highlights the context, objectives, hackathon challenge, directions for solutions, prototype expectations. These are just to provide a reference point, but students are not limited to these problem statements. They can provide their own out of the box ideas and work over it in Open Category.

Problem Statement 1: Multi-Level Teaching Strategies for Rural Classrooms

Context/ explaining the problem

In rural India, one teacher often handles multi-grade classrooms. For example, teaching Class 2 and Class 3 together. This creates challenges:

- Different learning levels in the same room.
- Time pressure on teachers to balance all grades.
- Lack of simple, ready-to-use teaching tools.

The result: students fall behind, and teachers feel overburdened.

Objective

Adapt the multi-level teaching approach to create practical, easy-to-use strategies and tools for teachers managing multi-grade classrooms in rural schools. The goal is to improve learning outcomes by addressing diverse student needs without overburdening teachers.

Hackathon Challenge (For Students)

Your task is to design solutions that teachers can use instantly. These can be digital or physical, but they must be:

- Simple: Easy for teachers with minimal training.
- Flexible: Adaptable to different grades and subjects.
- Scalable: This can be applied to many rural schools.

Possible Directions for Solutions

1. Smart Lesson Planning Tools

- Mobile/web apps that generate day-wise lesson plans for multi-grade classrooms.
- AI/ML-based suggestions for grouping students and sequencing activities.

- Offline-friendly apps for low-connectivity areas.
2. Adaptive Teaching Schedules
- Templates that help teachers divide class time smartly (e.g., 15 mins group work, 20 mins peer learning, 15 mins teacher instruction).
 - Rotational models where groups self-learn while the teacher focuses on one grade.
3. Student Peer-Learning Models
- Systems that train older/higher-level students to mentor younger ones.
 - Badge/point systems to encourage peer-teaching.

Prototype Expectations

Teams should submit a prototype or detailed implementation plan that includes:

- Sample lesson plans or demo activities.
- A teacher's guide explaining how to use the tool/strategy.
- How the solution addresses student diversity and teacher workload.
- A clear path for scaling up in real classrooms.

Problem Statement 2: Activity-Based Learning Kits Aligned with the Curriculum

Context / Explaining the Problem

In many rural primary schools, teaching is still heavily lecture-based due to a lack of engaging teaching aids. This often results in:

- Low student engagement – children lose interest quickly.
- Poor conceptual understanding – rote learning dominates over experiential learning.
- Limited resources – schools cannot afford expensive lab kits or activity tools.

The National Education Policy (NEP) emphasizes experiential, activity-based learning, but rural schools lack affordable, curriculum-aligned kits to bring this vision to reality.

Objective

Design affordable, locally relevant activity-based learning kits aligned with language, math and environmental studies curricula. These kits should:

- Be easy to integrate into daily lessons by rural teachers.
- Enhance student engagement and learning outcomes without increasing teacher workload.

Hackathon Challenge (For Students)

Your task is to design curriculum-aligned activity kits that rural teachers can use instantly in classrooms. The solutions can be physical kits, digital aids or hybrid models, but they must be:

- Simple → Easy for teachers with minimal training.
- Affordable → Made from low-cost or locally available materials.
- Relevant → Directly linked to primary school subjects (language, math, environmental studies).
- Sustainable → Can be produced, reused, or scaled across schools.

Possible Directions for Solutions

1. Hands-On Activity Kits
 - Low-cost science experiment kits (e.g., seed germination, water cycle models).
 - Math manipulatives (e.g., beads, sticks, fraction cut-outs, geometry tools).
 - Language learning kits (e.g., story cards, word puzzles, phonics boards).
2. DIY + Local Material Based Kits
 - Encourage use of clay, cardboard, bottle caps, or waste material to create reusable teaching tools.
 - Involve artisans or local self-help groups in producing kit components.
3. Teacher Support Tools
 - Activity manuals aligned with chapters in the school textbook.
 - Short tutorial videos or QR-code linked guides to help teachers conduct activities easily.
4. Student Engagement Add-ons
 - Worksheets, flashcards, and puzzle games for practice after the activity.
 - Simple badge/point system to encourage participation.

Prototype Expectations

Teams should submit a prototype or implementation plan that includes:

- Sample activity kits (physical mock-ups, videos, or design blueprints).
- Teacher's guide explaining how to use the kit in class.
- Student worksheets/engagement materials.

- Plan for affordability (cost breakdown, use of local materials).
- Scaling model – how it can be distributed to more rural schools.

Problem Statement 3: School–Community Engagement Models Based on Parental Involvement

Context / Explaining the Problem

In rural areas, schools often operate in isolation with minimal parental and community participation. This creates challenges such as:

- Limited parental awareness of their child’s learning progress.
- Weak school-community connection leading to low accountability.
- Poor student support at home due to lack of communication between teachers and parents.

However, research shows that active community participation and parental engagement significantly improve student learning outcomes, attendance, and motivation. Strengthening this engagement is crucial to building a sustainable education ecosystem.

Objective

Develop strategies and digital tools to strengthen community and parental engagement in rural schools, drawing on model of active parent-teacher associations (PTAs) and community participation.

Hackathon Challenge (For Students)

Your task is to design community engagement solutions that connect parents, teachers, and school leaders effectively. These can be digital platforms, low-tech tools or hybrid models, but they must be:

- Inclusive → usable by parents with limited literacy or digital access.
- Practical → require minimal time/effort from teachers and parents.
- Affordable → sustainable for rural schools with limited budgets.
- Engaging → motivate parents and communities to actively participate.

Possible Directions for Solutions

1. Parent–Teacher Communication Tools
 - Mobile apps or simple dashboards for attendance, homework, and student progress updates.

- Low-tech solutions like SMS alerts, WhatsApp groups, IVR (voice messages) for parents without smartphones.
2. Community Involvement Models
 - Frameworks for monthly community meetings or “School Open Days.”
 - Systems to involve local leaders, panchayats or volunteers in school activities.
 3. Parental Support for Learning at Home
 - Micro-guides or short videos for parents on “How to help your child with homework.”
 - Interactive take-home activity cards that parents can use with children.
 4. Feedback & Accountability Mechanisms
 - Anonymous suggestion/feedback systems for parents.
 - Community scorecards for monitoring school performance.
 5. Motivation & Recognition Models
 - Parent/Community Champion recognition programs (badges, appreciation events).
 - Gamified participation models (points for attending meetings, supporting events, helping students).

Prototype Expectations

Teams should submit a prototype or implementation plan that includes:

- Demo of the tool or framework (app mock-up, SMS flow, or community model).
- Teacher/Parent guide explaining how to use it.
- Plan for inclusivity (how to reach low-literacy or non-digital parents).
- Pilot plan – how it could be implemented in 1–2 rural schools.
- Scaling strategy – community champions, NGO partnerships, or Panchayat involvement.

Problem Statement 4: Digital Storytelling & Local Language Content Development

Context / Explaining the Problem

In many rural classrooms, students struggle with comprehension because the teaching materials are often in a language that feels distant from their home environment. Challenges include:

- Limited local-language teaching resources aligned with the curriculum.

- Low engagement due to reliance on textbooks rather than stories and interactive content.
- Cultural disconnect between classroom lessons and students' real lives, traditions, and folklore.
- Digital gap in rural areas where most available content is urban-centric or in English/Hindi only.

Yet, research and NEP 2020 highlight the importance of multilingual and culturally relevant education. Storytelling in local languages improves comprehension, boosts participation, and nurtures a sense of identity among children.

Objective

Encourage the development of digital storytelling content and micro-lessons in local languages to:

- Improve language comprehension and engagement in rural classrooms.
- Integrate local folklore, traditions, and dialects into curriculum-aligned lessons.
- Provide offline-accessible digital resources for schools with low connectivity.
- Empower teachers and local communities to co-create and continuously update content.

Hackathon Challenge (For Students)

Your task is to design digital storytelling solutions (audio, video, or text-based) that bring curriculum lessons alive in local languages and dialects. The content must be:

- Curriculum-aligned → linked with language, social studies, or EVS lessons.
- Locally relevant → includes folklore, traditional stories, and regional contexts.
- Simple to access → usable offline via phones, tablets, or low-cost devices.
- Scalable → can be stored in repositories and shared across rural schools.

Possible Directions for Solutions

1. Digital Storytelling Content

- Short stories, folk tales, or poems in local languages with visuals/audio.
- Animated videos or illustrated e-books aligned to the syllabus.
- Audio libraries for children to listen to stories in dialects they speak at home.

2. Teacher–Student Co-Creation Tools

- Platforms for teachers and students to record and share their own stories.
- Templates for teachers to easily adapt state textbook lessons into story format.

3. Offline-First Delivery Systems

- Story banks on SD cards, USB drives, or preloaded apps for offline schools.
- Simple mobile apps that work in low bandwidth or no-internet environments.

4. Cultural Integration Models

- Local artists or community elders narrating traditional stories.
- Content that uses regional songs, riddles, and oral traditions to explain lessons.

5. Gamified Learning Add-ons

- Quizzes, puzzles, or role-play activities based on the stories.
- Points or badges for students engaging with storytelling content.

Prototype Expectations

Teams should submit a prototype or plan that includes:

- Sample content (1–2 stories/poems/lessons in audio, video, or text format).
- Storyboards/scripts that show how content is created.
- Teacher’s facilitation guide for using the content in class.
- Plan for offline access (how it will work in low-connectivity areas).
- Scaling roadmap – open-source repository and partnerships for wide adoption.

Problem Statement 5: Student Attendance and Learning Tracking Systems Inspired by State Education Monitoring Policies

Context / Explaining the Problem

One of the biggest challenges in rural education is irregular student attendance and hidden dropout risks. Teachers and schools often rely on manual registers, which makes it hard to:

- Identify students with frequent absences.
- Track learning progress consistently.
- Alert parents early about attendance or performance issues.
- Share accurate data with higher authorities for timely intervention.

Although state policies (like UDISE+ and state-level monitoring systems) emphasize data-driven school monitoring, rural schools lack simple, offline-capable tools that teachers and communities can use easily.

Objective

Develop a low-cost, offline-capable system to monitor student attendance and learning progress in rural schools. The system should:

- Record daily attendance and basic learning milestones.
- Generate alerts for irregular attendance and dropout risks.
- Provide easy-to-read reports for teachers, parents, and administrators.
- Be usable in low-connectivity and resource-constrained environments.

Hackathon Challenge (For Students)

Your task is to design an attendance + learning tracking solution that schools can adopt quickly. It can be a digital tool, hybrid model, or paper-digital integration, but it must be:

- Simple → usable by teachers with minimal training.
- Offline-first → functional in low/no internet areas.
- Alert-driven → notify parents and officials about risks early.
- Scalable → adaptable for different schools and integration with state monitoring policies.

Possible Directions for Solutions

1. Digital Attendance & Progress Apps
 - Mobile apps for teachers to mark attendance and update student progress.
 - Offline-first design with sync capability when internet is available.
2. Hybrid Paper-Digital Tools
 - QR code or ID card-based attendance linked with a simple app.
 - Paper-based registers with automated data capture (e.g., scanning weekly logs).
3. Parental Communication
 - SMS or automated voice call alerts for irregular attendance.
 - Simple progress reports shared monthly with parents.
4. Data Visualization for Teachers/Officials
 - Dashboards for spotting attendance patterns and learning gaps.
 - Early warning system for dropout risks.

Prototype Expectations

Teams should submit a prototype or implementation plan that includes:

- Demo tool/system (app mock-up, SMS flow, or hybrid design).
- Teacher's guide for data entry and monitoring.
- Sample parent communication formats (SMS/voice messages, reports).
- Cost analysis and sustainability plan (device needs, offline use cases).
- Scaling roadmap – how to extend from 1–2 schools to district/state levels.

Open Category – Innovation for Rural Schools

Category 6 invites participants to design cutting-edge, technology-driven solutions that can revolutionize learning and school management in rural and semi-urban India. While the other categories present structured problem statements, this open track encourages teams to define their own challenge and create impactful prototypes using emerging technologies such as Artificial Intelligence (AI), Machine Learning (ML), Deep Learning, Large Language Models (LLMs), Internet of Things (IoT), robotics, data analytics, or automation frameworks.

Participants are free to re-imagine how technology can make schooling accessible, inclusive, and future-ready—from classrooms to communities.

Indicative Areas for Innovation

(Teams are free to explore beyond these examples.)

- **AI-assisted Teaching Tools:** Personalized learning support using generative AI tutors or adaptive question generation.
- **IoT-enabled Smart Classrooms:** Affordable sensor networks for attendance, safety, and energy management.
- **LLM-based Local Language Platforms:** Multilingual content creation and translation tools for regional curricula.
- **Predictive Analytics in Education:** ML models to forecast learning gaps, dropout risks, or resource needs.
- **AI for Inclusivity:** Speech-to-text or vision-assistive applications for differently abled learners.
- **Deep Learning for Assessment:** Automated grading of descriptive answers, art, or handwriting.
- **Community Intelligence:** Data dashboards connecting schools with parents, Panchayats, and local NGOs for collaborative problem-solving.

Hackathon Evaluation Criteria:

1. Innovation (25%)

- How unique, creative, and original is the idea or solution?
- Does it push the boundaries of existing methods, practices, or tools?
- How effectively does it leverage local context, culture, or resources in an innovative way?

2. Impact (25%)

- Does the solution directly improve learning outcomes, student engagement, or educational participation?
- Does it address key challenges, such as teacher workload, student comprehension, or community involvement?
- How likely is it to result in measurable positive change in education (e.g., reducing dropout rates, increasing participation, enhancing conceptual understanding)?

3. Practicality (20%)

- Is the solution easy to use and integrate into the existing system, especially by teachers, students, or parents with limited resources and training?
- Is it simple, low-cost, and adaptable to a variety of settings, including rural or resource-constrained environments?
- Does it require minimal maintenance or technical support for long-term use?

4. Scalability & Sustainability (15%)

- Can the solution be scaled or replicated across other schools, regions, or communities?
- Is it sustainable over time, either through community involvement, local production, or low-cost models?
- Can it be adapted for different languages, cultures, or educational systems?

5. Presentation & Prototype (15%)

- Is the idea clearly articulated, with a well-designed prototype or demonstration?
- How easy is it for stakeholders (teachers, students, parents, etc.) to understand and engage with the solution?
- Are supporting materials (e.g., guides, documentation) clear, user-friendly, and of high quality?

Contact

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