

ENHANCING MULTILINGUAL FOUNDATIONAL LITERACY USING GOOGLE READ ALONG (BOLO)

1. SUBJECT MATTER EXPERT DETAILS

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2. RESOURCE DETAILS

- **Technology / Tool:** Google Read Along (Bolo) — Speech-Assisted Multilingual Literacy Application
- **Target Users:** Primary Teachers, Cluster Resource Persons (CRPs), DIET Teacher Trainees, FLN Coordinators, Grades 1–5 Learners
- **Learning Objective:** To set up, configure, and integrate an offline-capable, voice-interactive digital reading assistant to build foundational decoding, pronunciation, and reading comprehension in bilingual and multi-grade hill classrooms.
- **Expected Learning Outcome:** Participants will be able to configure multilingual profiles (Hindi-English), navigate leveled digital story collections, leverage the in-app AI reading tutor ("Diya") for real-time oral feedback, deploy offline gamified reading incentives, and organize structured peer-reading rotations in resource-constrained schools.

3. PROBLEM STATEMENT

In rural and remote primary schools across hilly terrains, foundational literacy acquisition faces unique systemic hurdles, primarily driven by severe multi-grade classrooms where a single teacher managing three to four grades simultaneously cannot sustain consistent, one-on-one guided oral reading practice. Compounding this challenge, early learners frequently struggle with pronunciation and mother-tongue influence (MTI) when bridging phonemic shifts between local regional dialects, standard Hindi, and early English vocabulary, often leading to performance anxiety and reluctance to read aloud in front of peers. Furthermore, severe connectivity and hardware barriers - such as erratic cellular bandwidth, storm-related network outages, and a lack of desktop setups - render web-first tools ineffective, while the absence of home reading ecosystems leaves first-generation learners without guidance to decode conjunct consonants (sanyukt vyanjan) or receive real-time oral correction. Consequently, these undetected deficits compound into significant learning losses by upper primary levels, highlighting an urgent need for an accessible, offline-first, speech-enabled digital reading buddy that offers continuous, low-stress scaffolding for every child.

4. PROPOSED SOLUTION

The proposed solution establishes an offline-First Interactive Reading Station powered by Google Read Along, transforming a single smart phone or school tablet into an autonomous reading lab with zero continuous data consumption. The platform features an embedded AI reading buddy ("Diya") that delivers real-time speech-recognition guidance by listening as the child reads aloud, detecting omitted words or mispronunciations, and highlighting the text dynamically. Whenever a learner pauses or struggles with a complex word, tapping it triggers scaffolded audio modeling where Diya articulates the word clearly and deconstructs its phonetic components. Seamless dual-language switching bridges multilingual phonics between Hindi and English stories, reinforcing early second-language acquisition through familiar narrative structures. Because it works completely offline, fun rewards like stars and badges keep children excited to practice reading on their own.

5. TOOLS REQUIRED

- **Primary Platform:** Google Read Along app (Android application available via Google Play Store) or web interface (readalong.google.com).
- **Hardware:** Any entry-level Android smart phone or tablet (Android 5.0+, minimum 1 GB RAM) with a functional microphone and speaker.
- **Connectivity:** One-time internet connection (50–100 MB) for initial installation and language story pack downloads; 100% offline operational functionality thereafter.
- **Peripheral Accessories (Optional but Recommended):** A basic set of wired earphones with inline microphone to isolate the child's voice in noisy, multi-grade classrooms.

6. STEP-BY-STEP PRACTICAL DEMONSTRATION

Step 1: Installation and Language Selection

- Download "Read Along by Google" from the Google Play Store.
- Launch the app and select the target reading language pair (e.g., Hindi + English).
- Read and accept the voice data privacy notice (highlighting that voice processing happens strictly locally on the device for privacy and offline usage).

Step 2: Multi-Learner Profile Configuration

- Open the learner management drawer on the home screen.
- Tap Add Profile to create distinct child profiles on a single shared device (e.g., "Aarav - Class 3", "Priya - Class 4").
- Assign individual profile avatars so young learners can self-identify their accounts without needing to read complex menus.

Step 3: Curating and Downloading Leveled Story Packs

- Browse the integrated library catalog organized by levels:
 - **Level 1–2:** Simple words, high-frequency sight words, short repetitive sentences.

- **Level 3–4:** Complex sentence structures, varied tenses, and extended paragraphs.
- Tap on desired story bundles (e.g., Pratham Books, StoryWeaver, Katha collections) while connected to the internet once. A small green badge confirms the stories are stored locally for full offline usage.

Step 4: Conducting a Voice-Interactive Reading Session

- Select the active student's profile.
- Hand the device to the child and choose an assigned story.
- The child taps the microphone button and begins reading the text displayed on the screen aloud.
- **Real-time feedback:** As the child correctly articulates words, the text highlights in blue and "Diya" awards incremental star animations.

Step 5: Leveraging Remedial Phonics and Decoding Support

- **When a child hesitates:** If the child remains silent for more than 3–4 seconds, "Diya" gently prompts the child to read the highlighted word.
- **When a word is mispronounced:** The word remains un-highlighted.
- **Manual Phonics Prompt:** The child taps the unread/difficult word. "Diya" pronounces the word slowly and clearly. The child repeats it back into the microphone to secure immediate mastery and clear the prompt.

Step 6: Gamified Assessment and Mini-Games

- Upon completing the passage, review the end-of-story summary showing total stars earned and reading duration.
- Direct the student to the **Word Games** module (e.g., *Speed Reading*, *Pop the Balloon*, *Word Jumble*) to reinforce sight words and vocabulary encountered in the story through kinesthetic play.

7. EXPECTED OUTPUT

A fully operational, low-cost **Foundational Literacy Station Workflow** that delivers:

- An accessible, localized oral reading environment operating entirely without cellular internet or school Wi-Fi.
- Individualized reading portfolios across multiple learners on a shared classroom device, recording total minutes read, stories finished, and vocabulary stars accumulated.
- Measurable reduction in reading hesitation and pronunciation errors through low-stakes, non-threatening automated audio scaffolding.

8. INNOVATION EXTENSION (CHALLENGES FOR HACKATHON PARTICIPANTS)

- **The "Rotational Reading Corner" Model:** Design a 30-minute multi-grade timetable model where a single smart phone rotates among 4 learner pairs during independent work periods while the primary teacher conducts direct instruction with another grade.

- **Community Reading Kits for Village Bal Panchayats:** Formulate a community engagement protocol enabling SMC (School Management Committee) members or youth volunteers to host weekly evening Read Along circles using parents' basic Android devices in low or no network zones.
- **Targeted Remedial Linkage (Stars to Slate):** Create an educator diagnostic rubric: develop a 1-page paper tracker where learners log words they had to "tap Diya for help" during their session.

9. REFERENCES

- Google for Education. *Read Along: A speech-based reading tutor in support of universal literacy*. <https://readalong.google.com>
- Ministry of Education, Government of India. *NIPUN Bharat Guidelines for Foundational Literacy and Numeracy (FLN)*. <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2021/jul/doc20217531.pdf>
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