

ENHANCING FOUNDATIONAL READING FLUENCY & PRONUNCIATION USING MICROSOFT READING COACH

1. Subject Matter Expert Details

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- **Area of Expertise:** Educational Technology, AI in Literacy, Inclusive Education

2. Resource Details

- **Technology / Tool:** Microsoft Reading Coach (AI-Powered Independent Reading & Pronunciation Platform)
- **Target Users:** Primary & Middle School Teachers, Teacher-Mentors, Student Innovators (Grades 6–8)
- **Learning Objective:** To conceptualize and build an independent personalized reading model using an AI-assisted digital reading coach to bridge multi-level literacy gaps in multilingual and rural classroom environments.
- **Expected Learning Outcome:** Participants will be able to design custom, level-appropriate AI-generated reading passages, deploy automated speech-recognition evaluation for real-time phonics feedback, and interpret analytical dashboards to track individual reading accuracy, speed, and challenging words.

3. Problem Statement

In foundational language classrooms across rural and multi-grade primary schools, large student-to-teacher ratios make one-on-one guided reading nearly impossible to sustain daily. Students frequently struggle with decoding, phonemic awareness, word skipping, and regional dialect-influenced pronunciation errors. Because traditional oral reading sessions require continuous teacher listening and direct correction, hesitant or low-confidence readers often experience performance anxiety and withdraw from speaking aloud. Meanwhile, teachers lack actionable, granular data to identify which specific consonant blends, phonemes, or sight words are stalling an individual child's fluency. Without real-time, non-judgmental guided interventions, foundational literacy gaps compound rapidly by Grade 5.

While classroom instruction and FLN initiatives have expanded, many learners do not receive sufficiently personalized, immediate, and repeated phonics practice to become independent readers. It is therefore a need for an accessible, teacher-supported digital intervention, which can enable children to practice reading aloud independently, receives timely feedback on pronunciation and fluency, and allows teachers to identify learners who need targeted support.

4. Proposed Solution

A scalable **AI-Enabled Independent Reading Lab** prototype using Microsoft Reading Coach. The solution shifts the teacher from a manual listener to an instructional designer and diagnostic coach:

1. **Adaptive Content Creation:** Teachers or learners generate context-relevant, decodable micro-stories using built-in generative AI prompts aligned to grade-level vocabulary.
2. **AI Speech Analysis:** The engine analyzes the learner's voice input in real time, calculating reading accuracy, words per minute (WPM), and identifying challenging words without causing embarrassment.
3. **Targeted Phonics Coaching:** The platform automatically extracts the specific mispronounced words and offers targeted syllable division, audio modeling, and pictorial clues for self-correction.

5. Tools Required

- **Primary Platform:** Microsoft Reading Coach (Free web-based tool: www.coach.microsoft.com).
- **Hardware:** Any basic laptop, desktop, tablet, or smart phone with an active microphone and speaker/earphones.
- **Connectivity:** Moderate internet connection (for passage loading and AI speech-to-text processing).
- **Free / Open Alternative Reference:** Google Read Along (Bolo) app for offline-first mobile literacy environments.

6. Step-by-Step Demonstration Overview

- **Step 1:** Accessing the platform and selecting the reading mode (*Create a Story with AI* or *Add Passage*).
- **Step 2:** Generating an adaptive reading passage using prompt parameters (character, setting, and reading level 1–8).
- **Step 3:** Conducting a live oral reading pass using the speech-to-text listener engine.
- **Step 4:** Reviewing the automated reading dashboard (Accuracy %, Time Spent, Words Per Minute).
- **Step 5:** Engaging with the AI "Reading Coach Practice" tool for targeted word breakdown (syllabification, phoneme sounding, and picture dictionary).

7. Expected Output

A functional, classroom-ready Digital Reading Intervention Workflow that produces:

- An interactive, AI-tailored reading passage calibrated to a child's specific reading level.
- An automated diagnostic summary highlighting reading speed, fluency score, and an individualized list of mispronounced vocabulary words.

8. Innovation Extension (Challenges for Hackathon Participants)

1. **Local Context Integration:** Design a methodology to feed localized cultural stories and community narratives into the coach to preserve regional heritage while developing modern language literacy.
2. **Peer-Buddy Reading Station:** Prototype a low-resource classroom management system where high-accuracy peer mentors guide struggling readers through the AI-generated "challenging words" practice cards.
3. **Data-to-Lesson Pipeline:** Create a weekly diagnostic tracking sheet that aggregates Reading Coach accuracy scores into targeted weekend remedial worksheets for differentiated homework.

9. References

- Microsoft Education. *Reading Coach: Personalized, AI-powered reading practice.* www.coach.microsoft.com
- Google Read along. *A speech-based reading tutor in support of universal literacy.* www.readalong.google.com
- SCERT Uttarakhand Hackathon 3.0 Concept Guidelines