
SAMPLE TOOL RECORD (EDUCATION)

1) SNAPSHOT

- **Tool name:** Community AI Learning Companion (CALC)
- **Lead organization(s):** Learning Bridges + Ministry of Basic Education (local district)
- **Country / Region:** Northern Zambia (rural and peri-urban districts)
- **Domain:** Education
- **Deployment status:** Active (pilot-to-scale pathway)
- **Timeframe of deployment:** Jan 2023 – Dec 2024

One-sentence use case:

“This tool supported teachers and students in low-resource schools with offline tutoring, lesson planning, and bilingual learning support.”

2) THE REAL-WORLD PROBLEM

Many rural and peri-urban schools in Northern Zambia face chronic teacher shortages, overcrowded classrooms, and limited access to textbooks and digital resources. Students often fall behind in literacy and numeracy, especially in early grades, and teachers have little time for individualized instruction.

Before the tool existed, learning relied almost entirely on chalk-and-talk pedagogy and scarce printed materials. Multilingual classrooms (Bemba + English) made comprehension harder, and students who fell behind rarely caught up.

Girls and first-generation learners were particularly vulnerable because they received less individual attention and had fewer learning supports at home.

For the district, success meant better foundational learning, not just higher exam scores.

3) WHAT YOU TRIED (PLAIN ENGLISH)

The Community AI Learning Companion (CALC) was a tablet-based app that worked offline-first in classrooms and community learning hubs.

It provided three functions:

1. **Student micro-tutor:**
 - Short literacy and numeracy exercises
 - Adaptive practice based on student performance
 - Bilingual explanations in Bemba and English
2. **Teacher assistant:**
 - Lesson planning templates
 - Auto-generated worksheets
 - Suggested classroom activities for mixed-ability groups
3. **Community learning mode:**
 - After-school access at community centers
 - Self-paced learning for older siblings and caregivers

The system used lightweight AI models stored locally on tablets, updated periodically via USB or occasional connectivity.

4) FIELD CONTEXT

- **Connectivity:** Offline-first / sporadic internet
- **Devices used:**
 - Shared Android tablets (schools and community centers)
- **Languages supported:** Bemba + English
- **Who used the tool day-to-day?**
 - Primary school teachers
 - Grades 2–5 students
 - Community facilitators

Local constraints that shaped design:

- Unreliable electricity
- Limited digital literacy among teachers
- Large class sizes (50–80 students)
- Shared devices (not one-to-one)

5) SAFEGUARDS & ETHICS

- **Consent approach:**
 - Written parental consent for student data use
 - Community meetings before rollout
- **Privacy protections:**
 - No names stored in analytics
 - Device-level anonymization
 - Local data storage only

Key risks anticipated:

- Overreliance on tablets replacing teacher interaction
- Bias toward English over Bemba
- Unequal access between schools

Key risks that emerged:

- Some teachers used the tool as a “substitute teacher.”
- Boys initially dominated tablet time.

What mitigations worked best?

- Clear classroom rules: “AI assists, teachers lead.”
- Rotational tablet schedules to ensure gender balance.
- Mandatory bilingual content.

One ethical rule we would give others:

“AI supports pedagogy — it does not replace it.”

6) WHAT ACTUALLY HAPPENED**What worked**

- Students showed faster reading comprehension gains.
- Teachers saved time preparing lessons.
- Community centers became learning hubs after school.

What didn't work

- Tablets were underused in schools with less confident teachers.
- Battery failures disrupted lessons during rainy season.

What surprised us

- Older siblings began using the tool to help younger students.
- Some teachers used AI-generated worksheets in non-AI classrooms.

What we changed along the way

- **Technical:** Added solar charging kits.
- **Pedagogical:** Created “AI + teacher” lesson templates.
- **Equity:** Introduced girl-first tablet rotation in early weeks.

7) OUTCOMES

Intended outcomes:

- Improved literacy and numeracy
- Greater teacher capacity
- More inclusive learning environments

What we can actually point to:

- Improved reading levels
- Increased teacher confidence
- More after-school engagement
- Greater gender balance in participation

Evidence (district sample):

- 22% improvement in reading comprehension (Year 1 schools)
- 18% improvement in basic numeracy
- 65% of teachers reported reduced prep time

Who benefited most?

- Struggling readers and first-generation learners

Who benefited least?

- Students in schools without reliable solar charging
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8) COMMUNITY EXPERIENCE

What users valued:

- Interactive learning
- Bilingual explanations
- Clear visuals and simple interface

What they distrusted:

- When AI feedback contradicted teacher corrections

Representative quote (teacher):

“The tablet helped me reach every child, not just the loudest ones.”

9) COSTS & FEASIBILITY

- **Total project cost (range):** \$450,000 – \$600,000
- **Ongoing cost after grant:** ~\$85,000/year
 - device maintenance
 - local facilitators
 - periodic content updates
- **Staff required:**
 - 1 program lead
 - 2 district coordinators
 - 1 technical support officer
- **Hardware required:**
 - 120 tablets across 20 schools
 - 20 solar charging kits

Sustainability without new funding?

Partially — requires modest district budget line for maintenance.

10) PATTERNS OBSERVED (FOR PHASE 2)

- **Pattern 1:** Offline-first design is essential for rural schools.
 - **Pattern 2:** Teacher buy-in determines success more than student tech.
 - **Pattern 3:** Community access extends impact beyond the classroom.
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11) LESSONS FOR OTHERS**Do this:**

1. Train teachers first, technology second.
2. Build bilingual content from day one.

Avoid this:

1. Deploying tablets without solar backup.
2. Treating AI as a substitute for pedagogy.

12) WHERE THIS COULD BE REUSED

Works well in:

- Rural primary schools
- Low-connectivity environments
- Multilingual settings

Must change in new contexts:

- Language localization
 - Alignment with national curriculum
 - Device sharing model
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13) ATTACHMENTS (hypothetical)

- Teacher training manual (PDF)
- Sample AI-generated worksheets
- District evaluation report
- Classroom use guidelines