

AI FOR FOUNDATIONAL LEARNING IN PUNJAB

Redefining Classroom Practice through Innovation and Evidence

In Punjab's public schools, an education transformation is quietly taking root. Led by the School Education Department, Government of the Punjab, and supported by the Foreign, Commonwealth & Development Office (FCDO) funded GOAL Bridging Technical Assistance for Governments (B-TAG) programme, an innovative pilot has begun to redefine how foundational learning is delivered and measured.

Designed and implemented by Punjab Education Curriculum Training and Assessment Authority (PECTAA) and the GOAL B-TAG technical team, the model tracks student progress, identifies differentiated learning needs within classrooms, and suggests tailored lesson plans that help teachers target support where it matters the most.

What sets this effort apart is its simplicity: no new parallel systems, no costly infrastructure. Instead, it leverages an AI-powered engine embedded in everyday classroom practice.

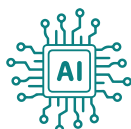
Designed for Teachers, Centred on Students

At the heart of the initiative is The Little Lab's AI-powered recommendation engine, which analyses student assessment data and generates lesson plans aligned with the National Curriculum. This enables teachers to respond to differentiated learning needs within the same classroom, making pedagogical choices more targeted and evidence-based.

To ensure effective design and implementation, PECTAA and the GOAL B-TAG technical team co-created a structured training and support package. This included:



Play-based and project-based pedagogy workshops



Practical orientation on navigating the AI platform



Ongoing mentoring through school visits, peer networks, and digital channels

This integration of pedagogy and technology has demonstrated how classroom-level innovation can be institutionalised into system-wide strategies for foundational learning, offering scalable solutions for improving teaching quality and student outcomes.

Evidence from Punjab

Phase 1 (March–May 2024)¹:

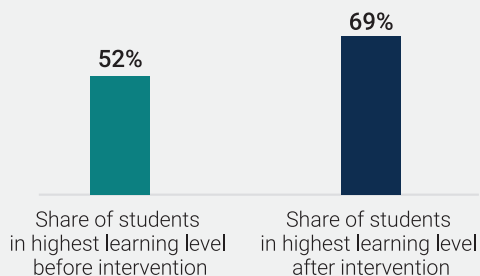
30 schools
48 teachers
1268 Grade 1 students

Students achieving the highest learning level rose from **52%** to **69%**.

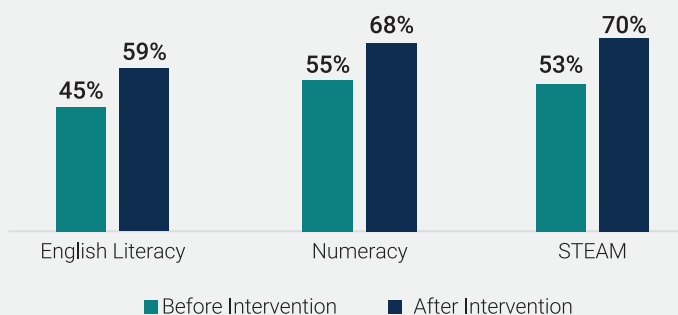
Gains in:
English Literacy **+14%**
Numeracy **+13%**
STEAM **+16%**

¹ In consultation with SED and PECTAA, Grade 1 internal examinations were suspended for the duration of the pilot, allowing teachers to continue implementing the lesson plans recommended by the Little Lab Application.

Overall Share of Students at highest learning level



Learning Levels (Percentage Score) Punjab Phase-1



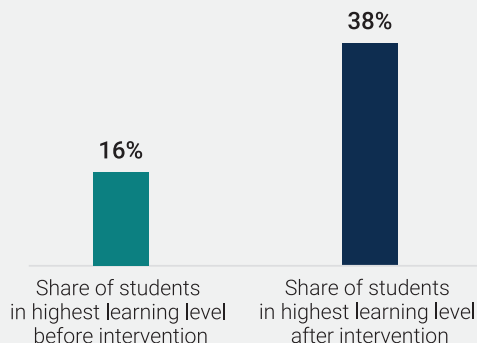
Phase 2 (Jan–Mar 2025):

30 schools
30 teachers
1407 Grade 1 students

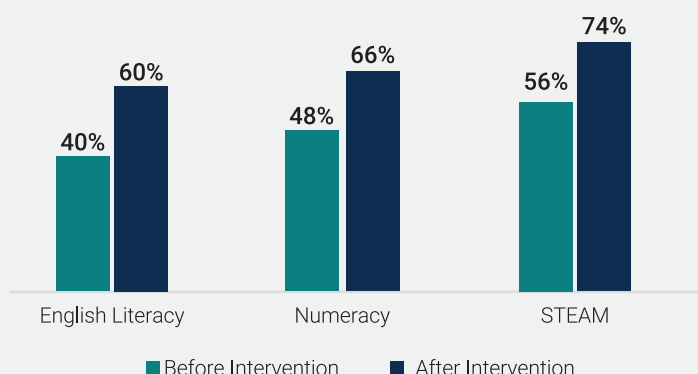
Students at the highest learning level more than doubled **16% to 38%.**

English Literacy **+20%**
Numeracy **+18%**
STEAM **+18%**

Share of Students at highest learning level



Learning Levels (Percentage Score) Punjab Phase - 2



Why This Matters

Punjab's lead in innovation shows that AI, when embedded in provincial systems and guided by teacher-led pedagogy, can deliver cost-effective, scalable improvements in foundational learning. It positions Punjab as a leader in educational innovation, and is inspiring other provinces to adapt model to their own contexts.

This is not a standalone initiative, it is system seeding, driven by the SED leadership and enabled by FCDO's catalytic support.

