

# What Works in Education

## A Decade of Learning: Experience and Evidence in Education Informing Policy and Practice *Global Evidence and Local Context*

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# Smart Buys Report

## Good Buys

*There is good evidence that the interventions in this category can be highly cost-effective across a variety of contexts*

Structured lesson plans with linked materials and ongoing teacher monitoring and training



Target teaching instruction by learning level, not grade (in or out of school)



Reduce travel times to schools



Giving merit-based scholarships to disadvantaged children and youth



Using software that adapts to the learning level of the child (where hardware is already in schools)



Pre-primary education (ages 3-5)



## Promising but Low Evidence in LMICs

*For these interventions, the evidence is limited, but the available findings suggest that these approaches can be highly cost-effective. More testing to develop scalable models is recommended.*

Intervention  
Early childhood stimulation programs (for ages 0 to 2), targeting parents



Intervention  
Teacher accountability and incentive reforms



Intervention  
Community involvement in school management



## From Global Evidence to Local Context

**A Case Study of Targeted Instruction in Pakistan (KP and ICT)**

**“Smart Buys” is only the beginning of the discussion in a country.**

**It is not a canned, top-down, donor-driven prescription.**

# What did we learn from Smart Buys about improving student learning?

## 1. ADJUST INSTRUCTION

**Target teaching instruction by learning level, not grade (in or out of school)**



## 2. SUPPORT TEACHERS

**Structured lesson plans with linked materials and ongoing teacher monitoring and training**



## 3. LEVERAGE EXISTING TECHNOLOGY

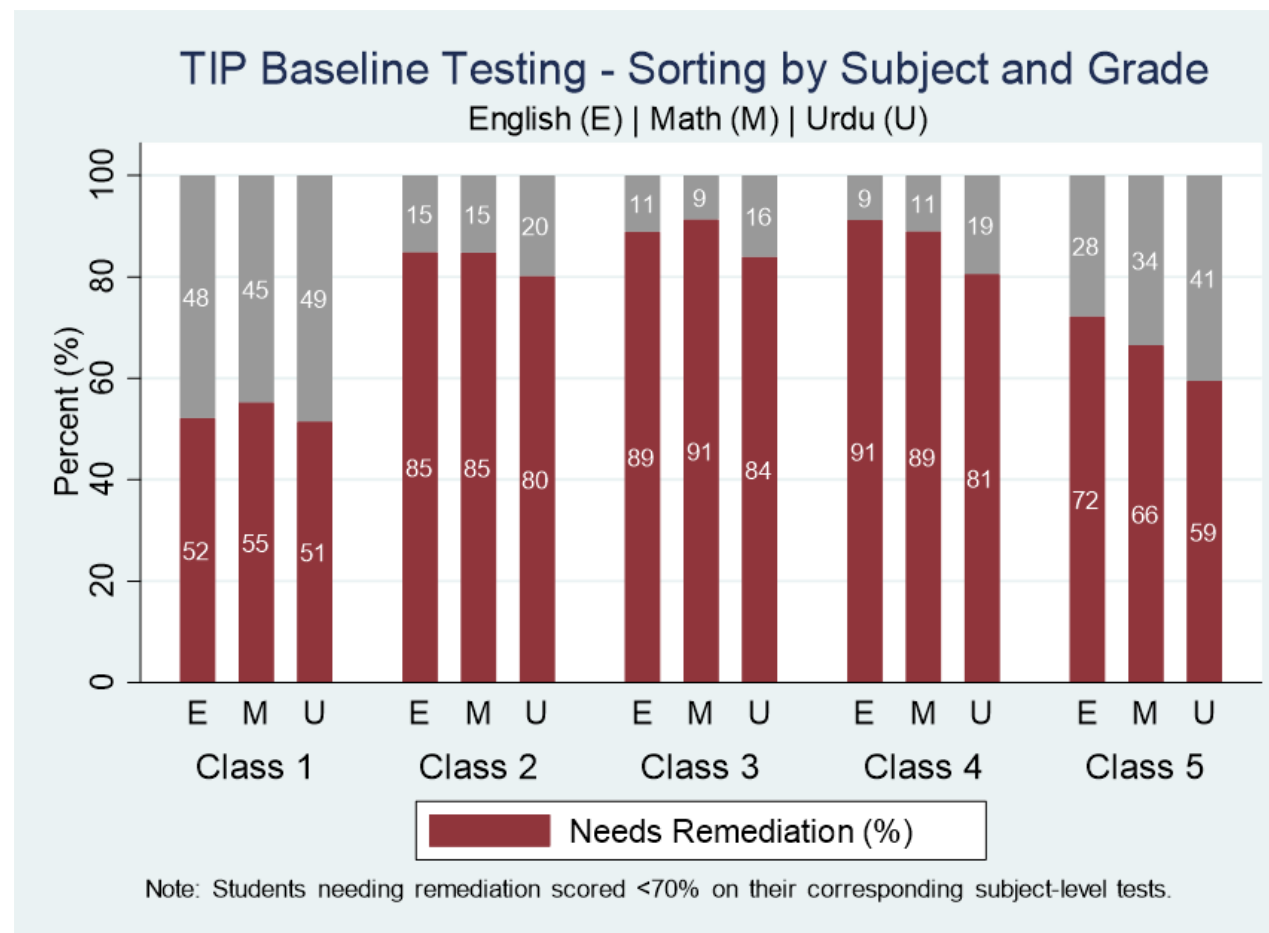
**Using software that adapts to the learning level of the child (where hardware is already in schools)**



# To address learning loss, it must first be MEASURED!

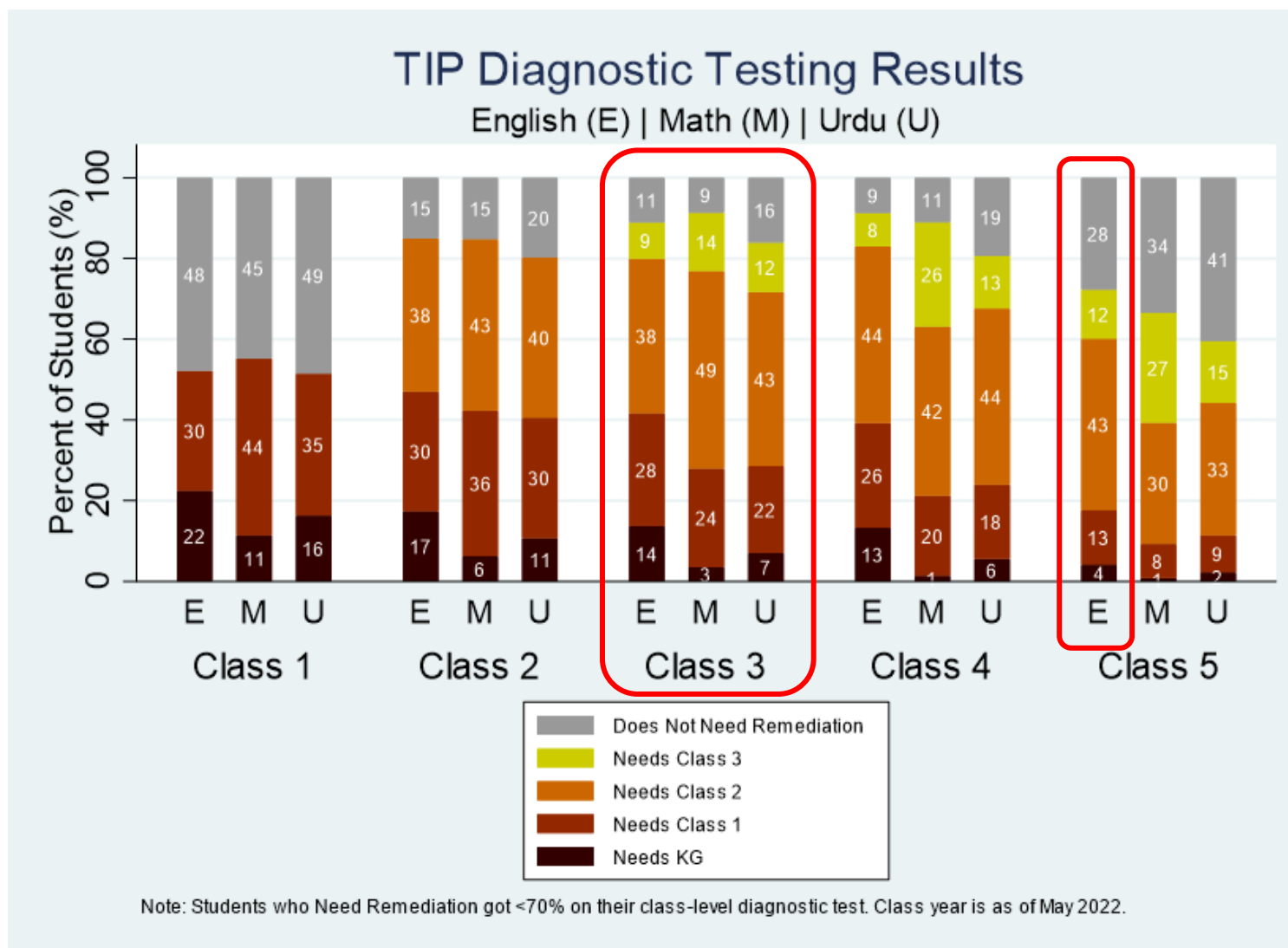
- Smart Buys Report: *Learning loss is rarely being measured systematically in low and middle income countries.*
- A learning crisis existed in Pakistan before COVID: ASER, LEAPS and others
- COVID induced school closures (Mar 2020-Nov 2021): Children in Pakistan only attended school for 60 out of the standard 250 school days in 2020
- ***Did COVID-19 school closures exacerbate existing learning crisis in Pakistan?***
  - **May 2022: Tested 200,000 students (1-5) in 1250 public schools across two districts in the KP, Pakistan**
  - **September 2022: Tested 70,000 students (1-5) in 560 public schools in ICT**
- Based on English, Urdu and Math foundational Student Learning Objectives (SLOs) from the national curriculum

# Diagnostic Testing Results: May 2022



**Despite being back in school since 2021, majority students need remediation across grades and subjects**

# Diagnostic Testing Results: TIP KP May 2022



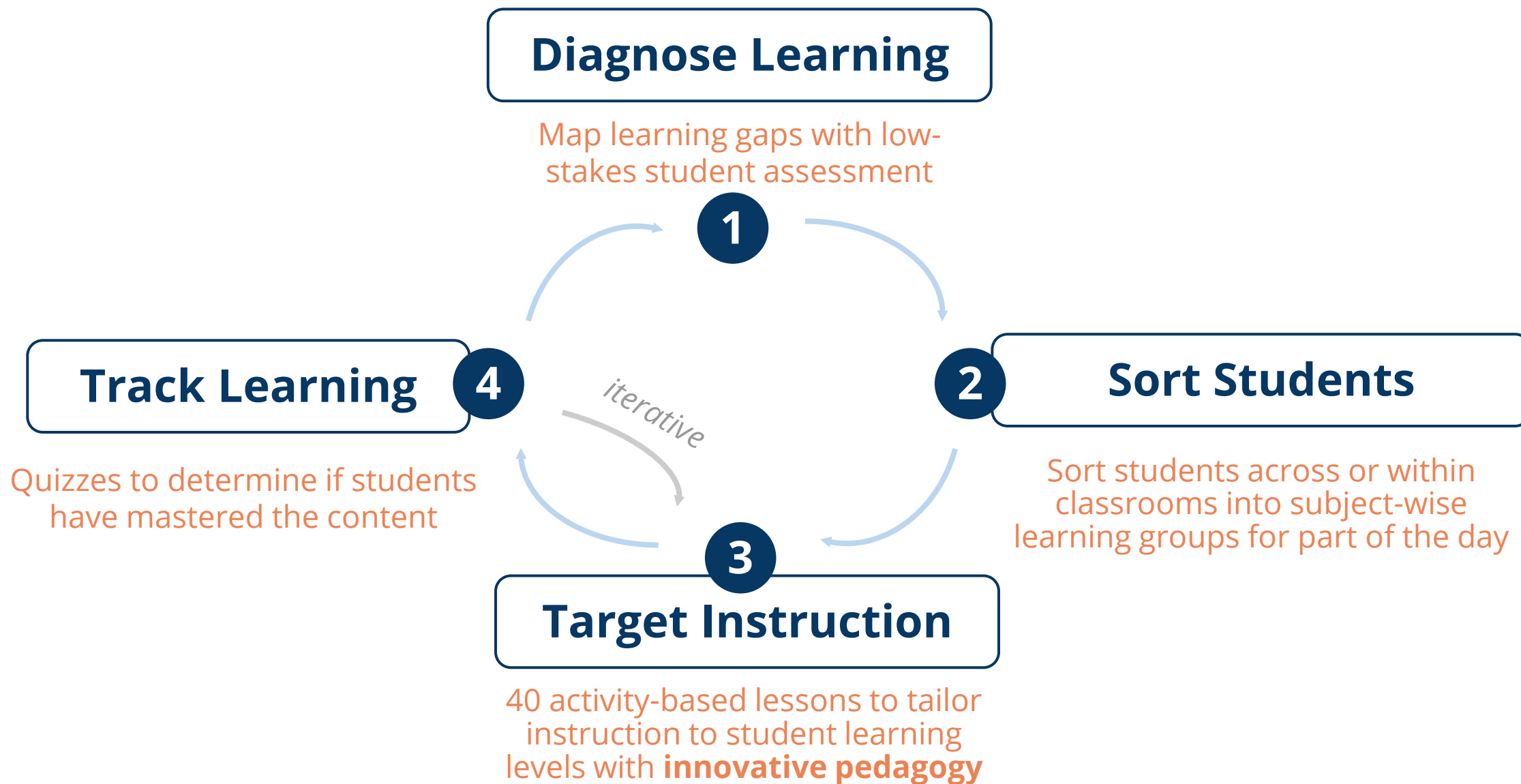
## In Math, at end of Class 3:

- 14% are one-grade level behind
- 74% are 2 or more grade levels behind

## In English, at the end of Class 5:

- 17% students have not mastered KG or Class 1 level content
- 43% have not mastered Class 2 content

# TIP Intervention: 40 days of *targeting* and *tracking* students





# TIP Intervention: Teacher Support *Mechanism*

## PRE-LAUNCH SUPPORT

### Training of Trainers

Trainers from within the system  
to train teachers

### Training of Teachers

Training in program  
administration and tools  
through blended training

## ONGOING SUPPORT

### Technology tool

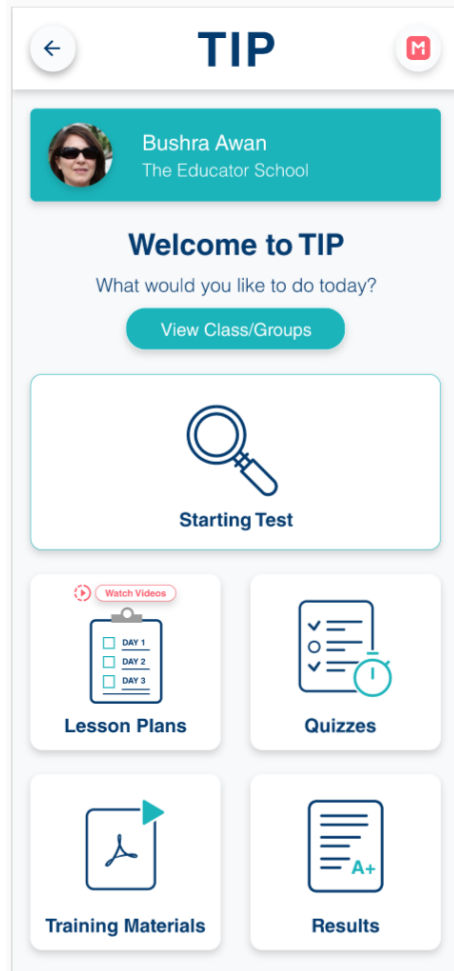
App run on teacher's personal  
smartphones and tablets

### Mentorship

Mentor support through in-person  
activities and WhatsApp groups

# TIP Tech Tool: MIS, LMS and Fast Grading Tool

## Home screen



**TIP**

**Bushra Awan**  
The Educator School

**Welcome to TIP**  
What would you like to do today?

[View Class/Groups](#)

**Starting Test**

[Watch Videos](#)

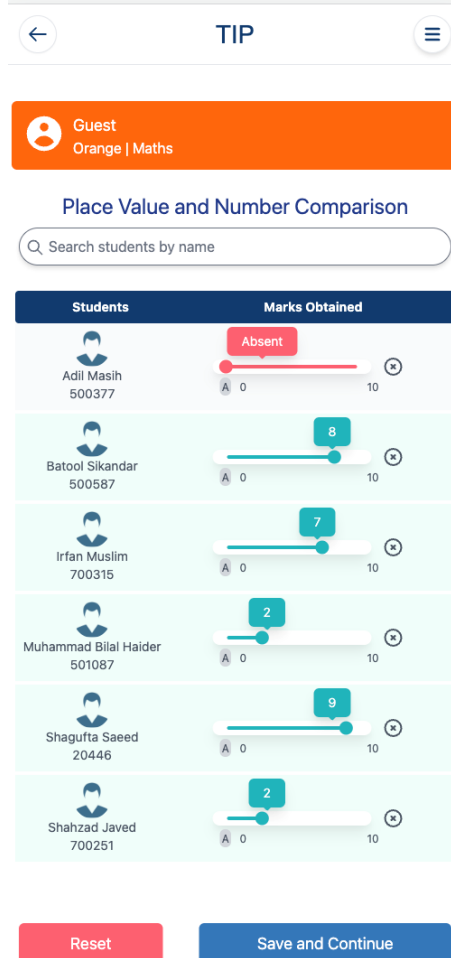
**Lesson Plans**

**Quizzes**

**Training Materials**

**Results**

## Grading



**TIP**

Guest  
Orange | Maths

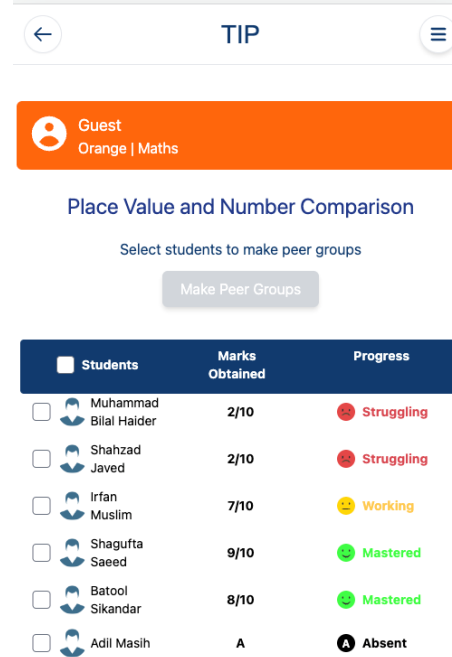
Place Value and Number Comparison

Search students by name

Students	Marks Obtained
Adil Masih 500377	Absent
Batool Sikandar 500587	8
Irfan Muslim 700315	7
Muhammad Bilal Haider 501087	2
Shagufra Saeed 20446	9
Shahzad Javed 700251	2

[Reset](#) [Save and Continue](#)

## Sorting



**TIP**

Guest  
Orange | Maths

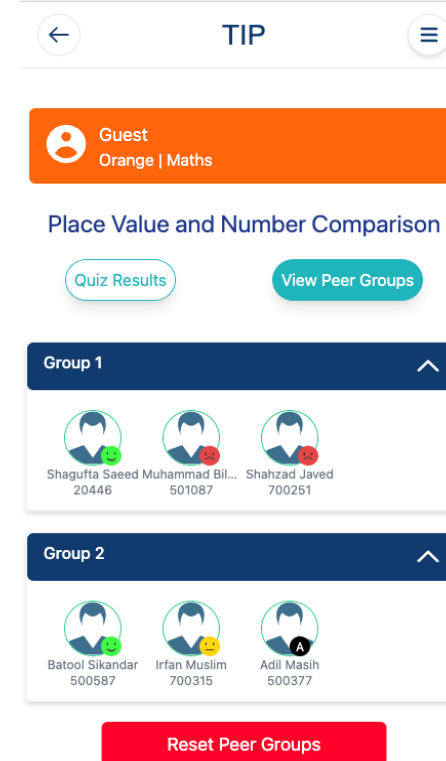
Place Value and Number Comparison

Select students to make peer groups

[Make Peer Groups](#)

Students	Marks Obtained	Progress
<input type="checkbox"/> Muhammad Bilal Haider	2/10	Struggling
<input type="checkbox"/> Shahzad Javed	2/10	Struggling
<input type="checkbox"/> Irfan Muslim	7/10	Working
<input type="checkbox"/> Shagufra Saeed	9/10	Mastered
<input type="checkbox"/> Batool Sikandar	8/10	Mastered
<input type="checkbox"/> Adil Masih	A	Absent

## Analytics



**TIP**

Guest  
Orange | Maths

Place Value and Number Comparison

[Quiz Results](#) [View Peer Groups](#)

**Group 1**

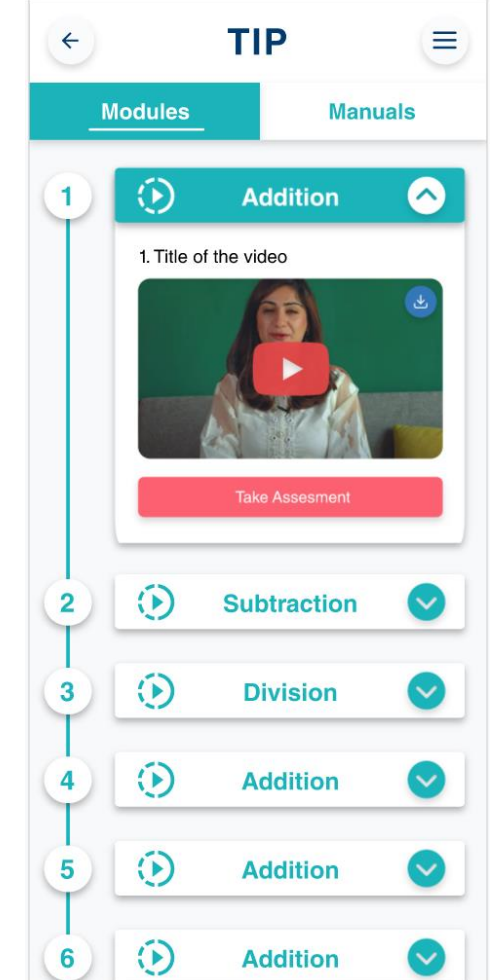
Shagufra Saeed 20446, Muhammad Bilal Haider 501087, Shahzad Javed 700251

**Group 2**

Batool Sikandar 500587, Irfan Muslim 700315, Adil Masih 500377

[Reset Peer Groups](#)

## Training



**TIP**

**Modules** **Manuals**

1. **Addition**

1. Title of the video

[Take Assesment](#)

2. **Subtraction**

3. **Division**

4. **Addition**

5. **Addition**

6. **Addition**

# TIP Implementation: A large-scale RCT-embedded pilot

A foundational learning program, with embedded RCTs, to support existing teachers in helping primary students (grades 1-5)

	Study 1	Study 2
<b>Location</b>	2 districts in KP	ICT
<b>Schools</b>	<b>1250</b> public primary schools	<b>560</b> public primary schools
<b>Teachers</b>	<b>~7000</b> teachers and head teachers	<b>2500</b> teachers and head teachers
<b>Students</b>	<b>~250,000</b> from classes 1-5	<b>~90,000</b> from classes 1-5
<b>Household actors</b>	NA	<b>10,000</b>

# Embedding TIP in the Pakistan education ecosystem

**Students need TIP!** *However,* implementation is only successful if the system **OWNS** and **SUPPORTS** this paradigm.

## → System-level ownership and support

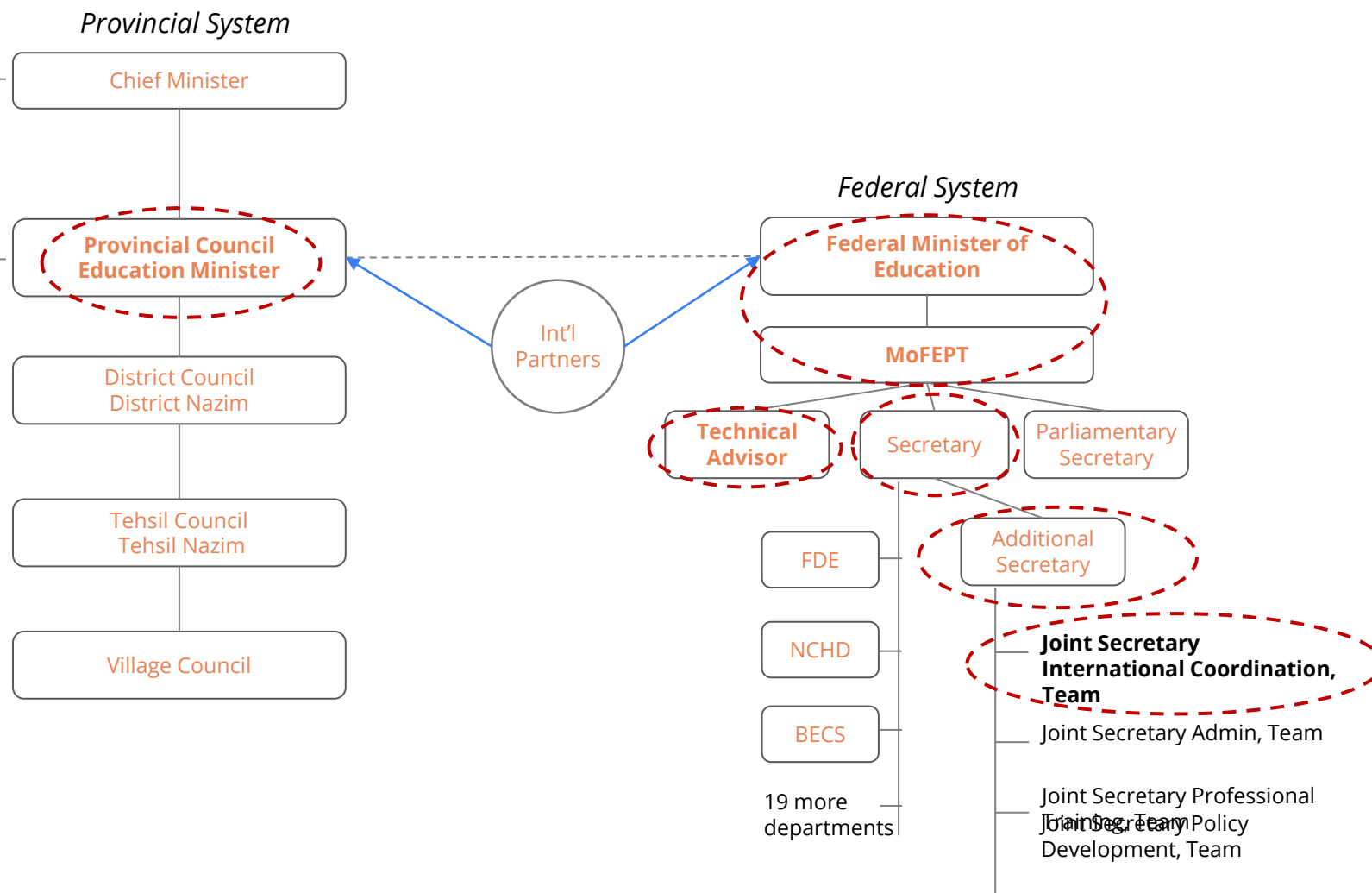
- ◆ High-level government priorities of COVID-19 recovery strategy
- ◆ Aligning with the complex, multi-tiered public education ecosystem

## → Teacher-level ownership and support

- ◆ Teachers' beliefs towards pedagogical innovation
- ◆ Teachers' constraints in adopting TIP

# Prioritization of learning *at the federal and provincial tiers*

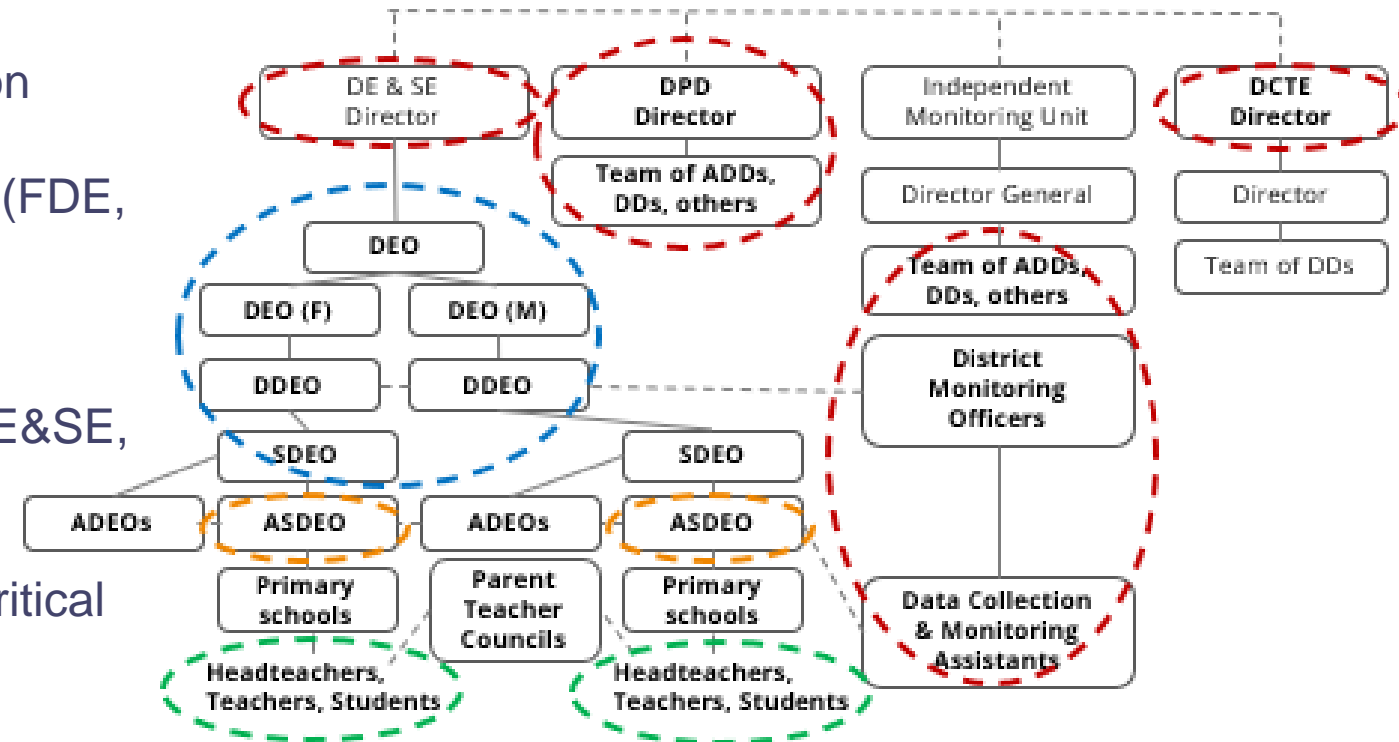
**COVID created a sense of urgency to address the learning crisis**



## System-level alignment: *Co-designing and implementing TIP with key actors*

### Leverage existing resources and knowledge

- Autonomous federal and provincial education directorates
  - Approval of Targeted Instruction curriculum (FDE, DCTE)
  - Teacher training design and master trainer recruitment (DPD, FDE)
  - TIP program design and implementation (DE&SE, FDE)
  
- District education authorities: ASDEOs as critical nodes between system and schools
  
- **Teachers as decisive players in TIP**



# Aligning TIP with *teachers' beliefs*

**The good news is that teachers thinking is aligned with the program. *The need for change is recognized, so not much work is needed on changing teachers' beliefs in innovation's effectiveness***

- 85%** Teachers believe students are currently far behind the curriculum and need help catching up.
- 94%** Teachers agree that it is important to experiment with new teaching methods.

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- 33%** Teachers believe that they should stick to the pace of the standard curriculum.
- 16%** Teachers believe that they should promote students even if they have not mastered the material.

Source: TIP Teacher Baseline Survey (2022), 6000+ teachers

# Addressing *teachers' constraints* in TIP adoption

## Extra burden: targeting instruction based on repeated testing

- **Solution 1:** TIP part of regular timetable, suspension of regular classes for 40 days
- **Solution 2:** Tech Tool supports teachers through automatic grading and LMS of materials

## Need pedagogical support to teach to student learning levels

- **Solution 1:** Simplified, FLN-focused curriculum based on SLOs from national curriculum
- **Solution 2:** Readily available materials through Tech Tool and in paper form

## Regulatory oversight

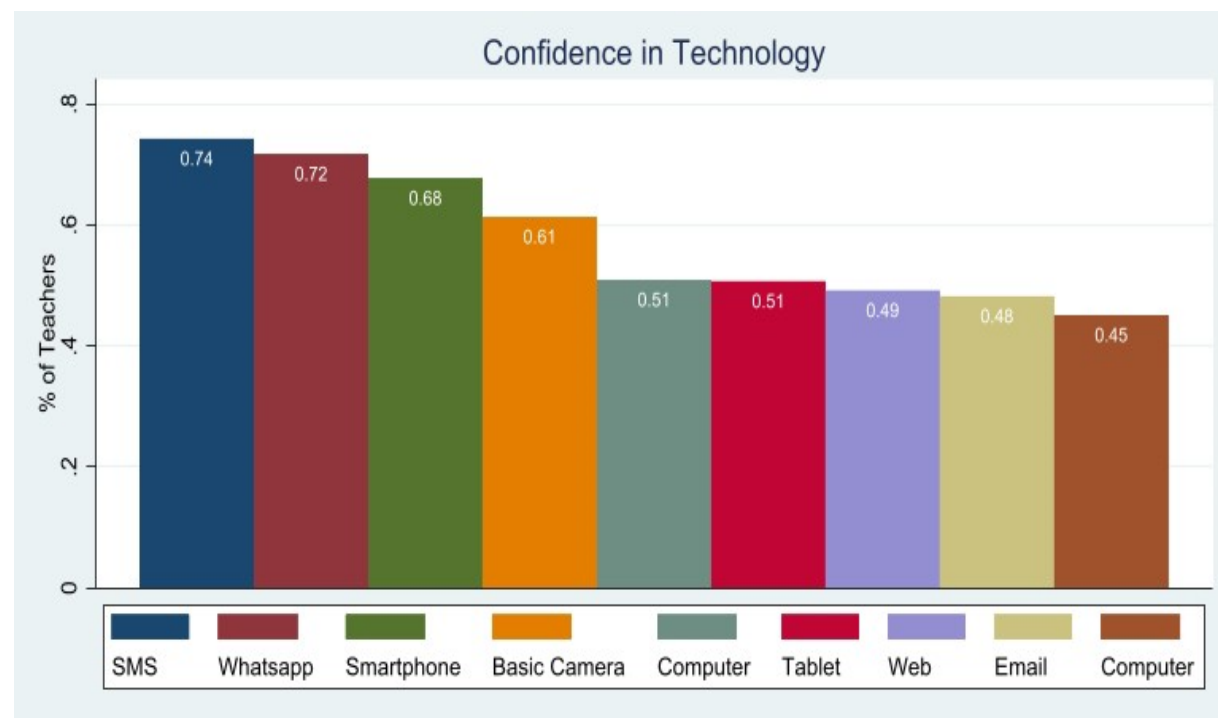
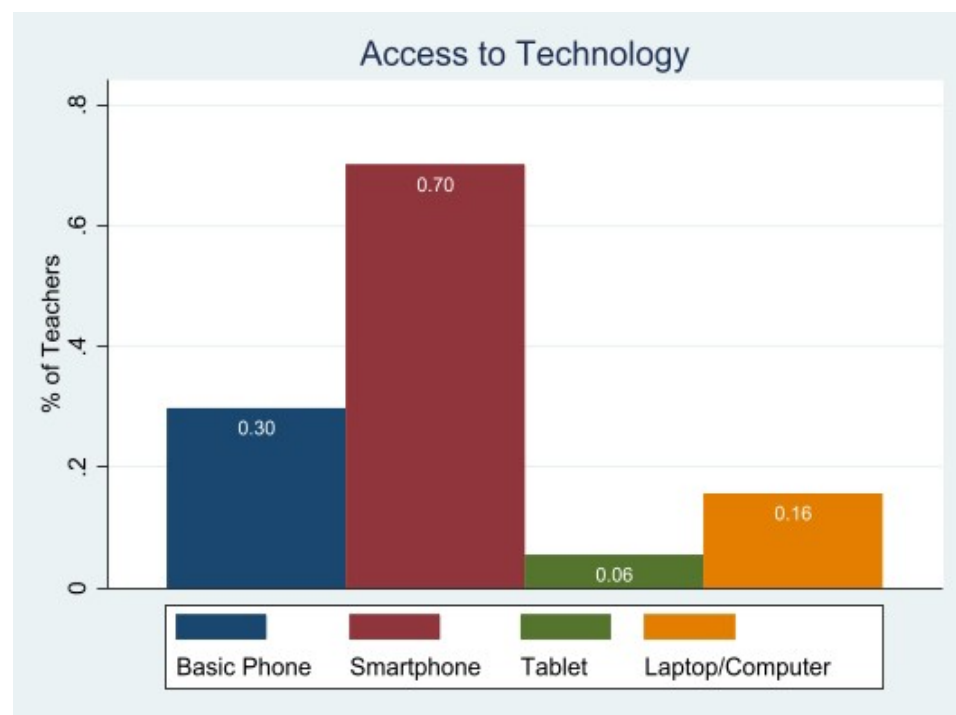
- **Solution 1:** Official policy change through notifications to circle ASDEOs to “not monitor on syllabus completion”
- **Solution 2:** Relationship building with ASDEOs to reinforce change in practice
- **Solution 3:** Changed external Grade 5 final exam; based on 50% of regular syllabus for sample districts



# Alleviating *teachers' constraints* in TIP adoption

TIP is designed as a **scalable and sustainable solution for budget-constrained settings.**

- A low-cost technology software, built using WhatsApp UI/UX interface, that can be used offline once downloaded on **existing smart devices.**
- **Smartphones as the instrument of choice**, given its high prevalence and comfort among teachers as a personal digital device.





# Annexure

# TIP Team



Dr. Tahir Andrabi  
Pomona College  
*Principal Investigator*



Dr. Isabel MacDonald  
UC Berkeley Haas  
*Principal Investigator*



Zainab Qureshi, M. Ed.  
Harvard Kennedy School  
*Principal Investigator*



Dr. Juan Baron  
World Bank  
*Principal Investigator*



Angela Tran  
Pomona College  
*Research Fellow*



Maleeha Hameed  
CERP  
*Program Manager*

# Collaborating Partners

## Clients and Implementing Partners



**CERP** | Centre for Economic Research in Pakistan

## Researchers



**BerkeleyHaas**



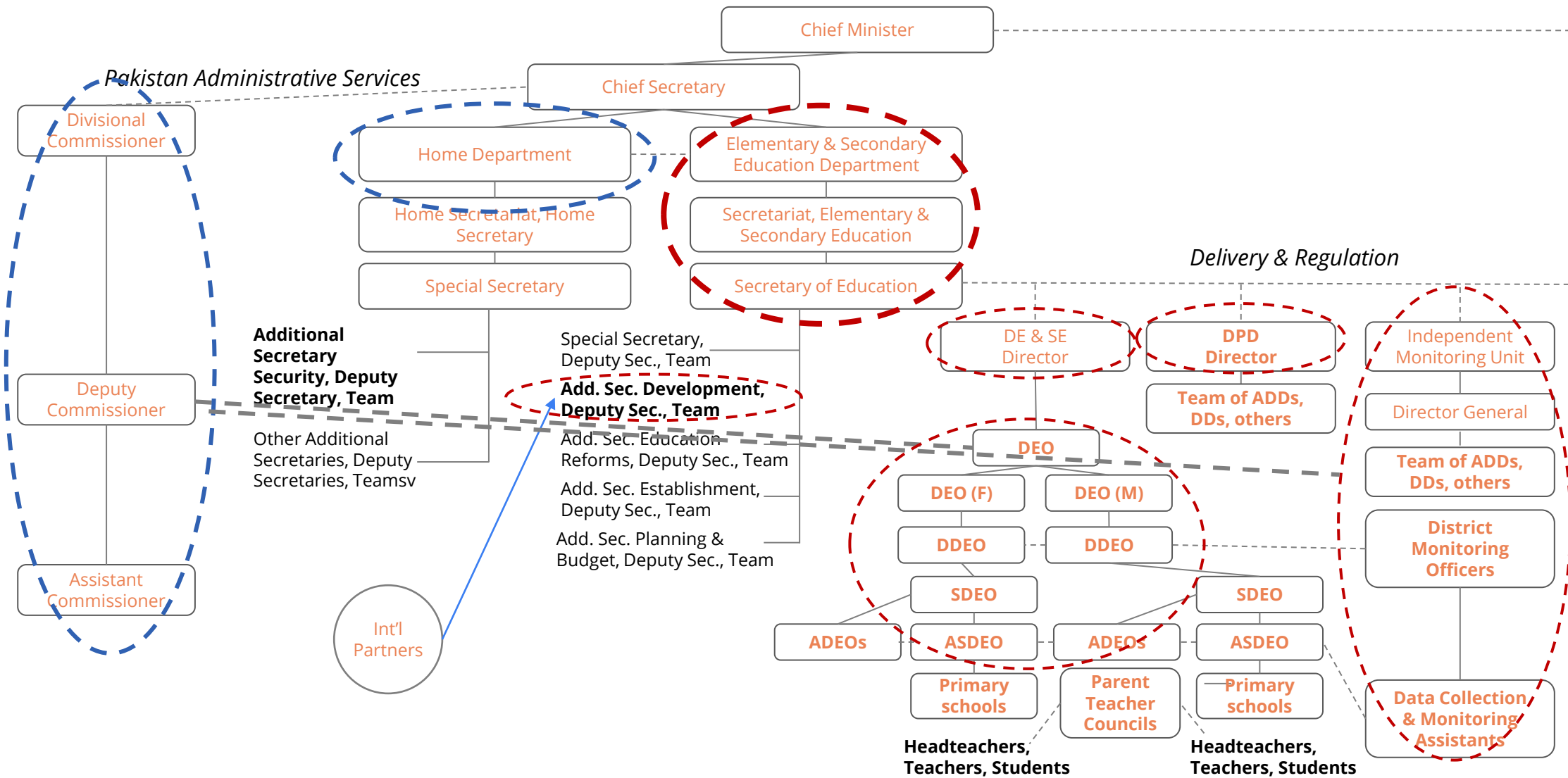
## International Partners



DOUGLAS B. MARSHALL, JR.  
FAMILY FOUNDATION



# System-level alignment *within the KP education ecosystem*



# Teacher Support

- Q1: What support is offered to teachers for TIP administration?
- Q2: Do teachers receive any materials to implement the program? How are these related or unrelated to the regular materials used by school teachers?
- Q3: Can you elaborate upon the TIP training model? How are teachers trained in the program? Through whom? And how were existing resources leveraged?
- Q4: Is there any ongoing coaching/mentoring provided to teachers during TIP administration?

# TIP Intervention: Teacher Support *Toolkit*

Component	Assessments	Teaching Learning Materials	TIP Tech Tool	Training Materials
Sub-Components	<ul style="list-style-type: none"> <li>• Diagnostic Test</li> <li>• Quizzes</li> <li>• Summative Test</li> </ul>	<ul style="list-style-type: none"> <li>• Workbooks</li> <li>• Lesson Plans</li> <li>• TLMs</li> <li>• Teaching Manual</li> </ul>	<ul style="list-style-type: none"> <li>• Fast grading tool</li> <li>• Library of tools</li> <li>• Head Teacher dashboard</li> <li>• Training module</li> </ul>	<ul style="list-style-type: none"> <li>• Training manual</li> <li>• MOOC training course</li> </ul>
How it supports teachers?	<p><i>Identify student learning gaps and track student progress.</i></p>	<p><i>Tailor instruction to learning groups for each of the three subjects.</i></p>	<p><i>Combine all components for access on existing devices.</i></p> <p><i>Automates TIP to reduce additional burden on teachers.</i></p>	<p><i>Prepare teachers and head teachers in TIP implementation through blended training.</i></p>

# Use of existing technology

Q1: Is the tech tool directly used by students or teachers?

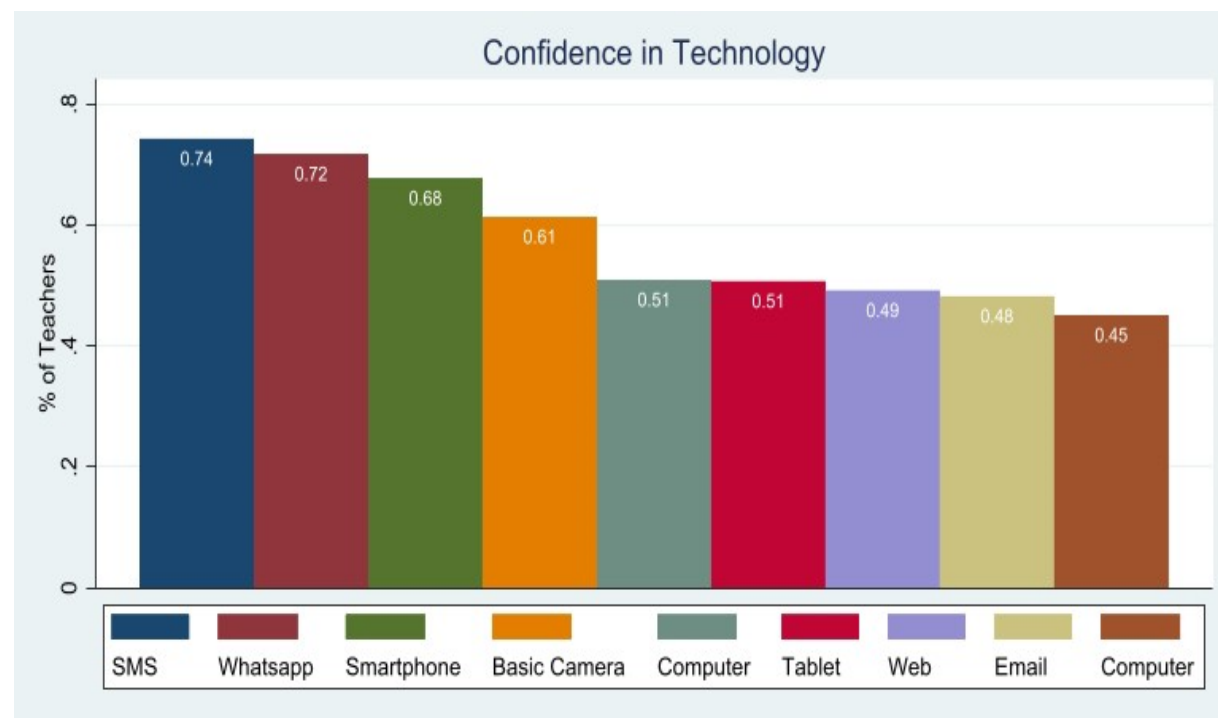
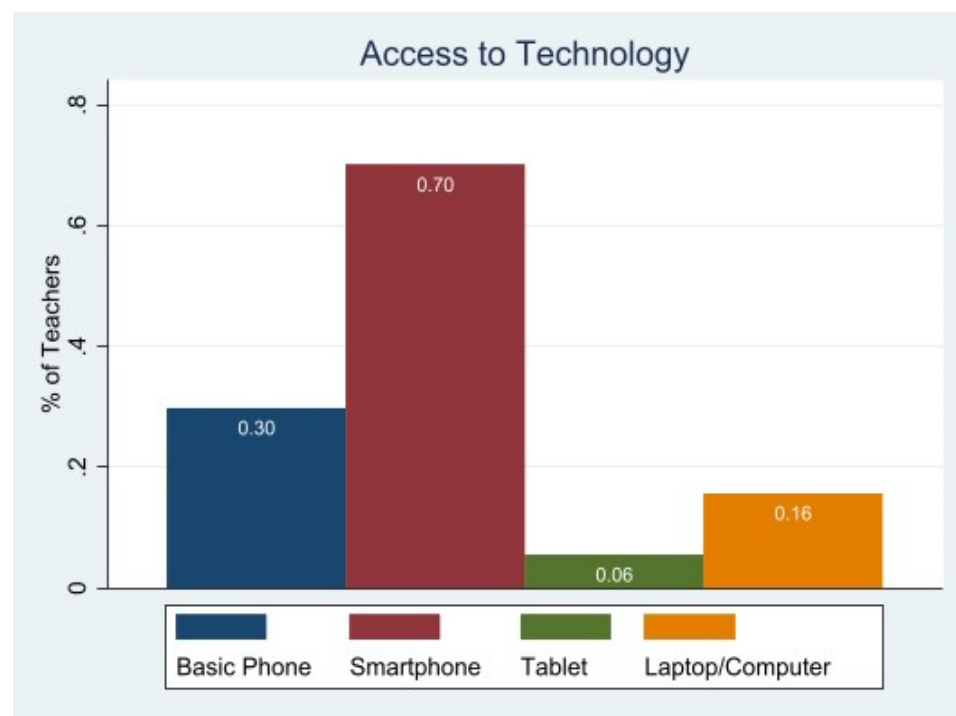
Q2: How is the tech tool designed for low-income settings where internet access may be limited?



# Alleviating *teachers' constraints* in TIP adoption

TIP is designed as a **scalable and sustainable solution for budget-constrained settings.**

- A low-cost technology software, built using WhatsApp UI/UX interface, that can be used offline once downloaded on **existing smart devices.**
- **Smartphones as the instrument of choice**, given its high prevalence and comfort among teachers as a personal digital device.



# Scalability and Sustainability

Q1: In a scaleup version of the program, who will replace the dedicated team of mentors? How are these mentors comparable to existing resources in the system?

Q2: What stage is the program at? When will the studies conclude?

Q3: What are future scalability and sustainability plans?

# Current Status of TIP

- **February 2023:** Completed 40 days of TIP classes in 1800+ public schools in KP and ICT
- **March-April 2023:** Endline summative student testing underway in KP and ICT
- **June 2023:** First look at impact evaluation results
- **Ongoing:** Discussions with Federal and KP education departments on:
  - ◆ Permanent integration/sustainability of TIP in the education reform agenda
  - ◆ Cost-effective version of TIP for scaleup across Pakistan

# Assorted Questions

Q1: Can you explain more how the tests were developed?

Q2: How are parents involved in foundational learning of students?

Q3: Are you also conducting any classroom observations as part of the program to gauge the quality of teacher lesson delivery?