



## Digital Initiatives in Education by Punjab 6th June 2022



#### **Overview of Education System in Punjab**



Districts: 23

Population: 2.77 crores Literacy Rate: 77.8%

**PGI Score: 929/1000** 

Grade I++ (2019-20)

**SEQI Score: 59.06** 

Rank: No. 9 in large states

(2016-17)

NITI Aayog SDG Index Category: Front Runner

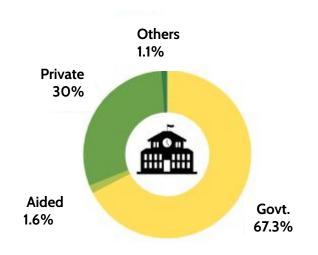
Composite score: 68

(2020)

#### **Overview of Education System in Punjab**

#### School by Management Category

**28,775** Schools





~2.8 lakh teachers

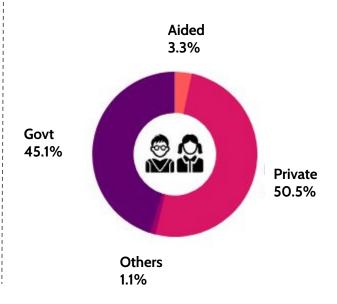
**Teacher to School Ratio** 

~3.5 in Primary

~12 in Upper Primary, Secondary & Higher Secondary

#### **Enrolment by School Management**

~63.2 Lakh Students



Source: UDISE (2019-20)

### **Guidance from the New Education Policy 2020**

Objective 1. "The thrust of technological interventions will be for the purposes of improving teaching-learning and 23.5 & evaluation processes, supporting teacher preparation and professional development........" 23.6 2. **Teaching-learning e-content** will continue to be developed by all States in all regional languages, as Platform ..... will be uploaded onto the DIKSHA platform 4. It is important that the use of technology for online and digital education adequately addresses concerns of equity Equity and 24.2 & Further, unless online education is blended with experiential and activity-based learning, it will tend to Pedagogy 24.3 become a screen-based education with limited focus on the social, affective and psychomotor dimensions of learning 6. .....the results of these pilot studies will be publicly communicated and used for continuous improvement. **Pilot Studies** 7. There is a need to invest in creation of open, interoperable, evolvable, public digital infrastructure in the education sector that can be used by multiple platforms and point solutions 8. .... will be extended to provide teachers with a structured, user-friendly, rich set of assistive tools for Digital Infra monitoring progress of learners. Tools, such as, two-way video and two way-audio interface for holding 24.4 online classes 9. Teachers will undergo rigorous training in learner-centric pedagogy and on how to become high-quality **Teacher Training** online content creators themselves using online teaching platforms and tools .....appropriate bodies shall set up standards of content, technology, and pedagogy for online/digital teaching-learning.... **Quality Standards** 

# Digital Education

## STATE INITIATIVES

### **Digital Education in Punjab: Some Key Current Initiatives**

- The use of digital technology for teaching and learning processes at home and in school aims to improve teaching-learning and evaluation processes, supporting teacher preparation and professional development
- Digital education is not an end in itself, it is means to an end

**Administration Driven** 

Digital Infrastructure

Capacity Building on Digital Education

**Device Distribution** 

TV Slots (DD Punjabi; Swayam Prabha) **Teacher Driven** 

Content Creation and Curation

**English Booster Club** 

Capacity Building DIKSHA

PPPP and School heads Capacity Building **Student Facing** 

Punjab Educare App

**WhatsApp** 

Convegenius

**Khan Academy** 

**Parent Facing** 

Reaching out to Parents (Virtually)

Social Media Campaigns

### **Digital Education initiatives - Summary**

- 13,844 out of 19,101 schools are Smart Schools
- Smart Classrooms: close to 56,000 Smart Classrooms have been established in all Govt. Primary, Middle, High and Sr. Sec. Schools.
- Smart Phones: Smart Phones have been provided to over 175,000 students of class 12<sup>th</sup> studying in government schools.
- Tablets have been provided to students and schools to facilitate e-Learning.
- Department has provided over **33,000 Computers to all 13000 primary schools** in order to provide Computer Education to students of primary classes.
- Computer labs are established in approx. **6,300 Govt. schools** including Middle schools.

#### **Digital Education in Punjab - Summary**

- Nearly, 16 lakh students are getting benefit of Computer Education annually.
- 100% Internet Connectivity with unlimited data facility is provided in all computer labs.
- **E-content (over 10,000 episodes)** of various subjects of primary and upper primary classes has been developed for benefits of teachers/students.
- Edusat (ROT/SIT) already established in all High & Senior Secondary Schools and Multimedia based Educational Content being telecast on 3,289 ROTs.
- 100% utilization of Edusat during schools hours. As per the school time tables classes are held through Edusat (daily 7-8 lecturers as per schedule).
- 2,600+ videos lecturers have been provided on YouTube Channel named 'Edusat Punjab' and 960 newly developed episodes of various subjects have been provided through Mobile App named 'iScuela Learn'.

## **SMART Schools**

Images of various Initiatives by Department of School Education, Punjab

## **Students Learning in ICT Labs**









### **CCTV** cameras have been installed for safety and security of students





## Listening labs in more than in 10,000 schools



## **Teachers: BRC - cum - Smart Training centres**











### **Digital intervention right from Pre - Primary**



- Objective: To strengthen the foundation of learning from an early age
- Punjab is the first state in the country to initiate Pre-Primary classes on November 14, 2017, which is celebrated as 'Bal Divas'.
- Enrolments in Pre Primary over the years:
  - o 2018-19: 1.93 lakh
  - o 2019-20: 2.25 Lakh
  - 2020-21 witnessed unprecedented increase i.e. 3.92 lakh students. Same trends have been seen in 2021-22.

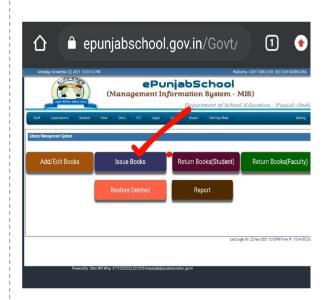
### **Digital Infrastructure: MIS**



Process
Re-engineering and
E-governance in the
working of the
Department

- All data related to schools, students and teachers has been digitized and uploaded on 'E-Punjab School'.
- Various e-initiatives of the departments:
  - ☐ E-office has been started for Diary/Dak/File Movement
  - ☐ Online Leave management system
  - Online clearance of extension in service and pension clearance
  - ☐ Time barred bills
  - Online tracking of disciplinary actions of employees
  - Online Grievance Redressal System
  - ☐ Biometric attendance system
  - ☐ Student Tracking for out of schools students
  - ☐ Aadhar card of students linked with various scholarships and other incentive schemes

#### **Library Management System**



**Library Management System** 

- An expert committee was constituted to review the books solicited both from the Govt. and Private publishers from across the country through public notice published in different newspapers.
- The list of books recommended by expert committee was sent to schools along with guidelines.
- The funds were disbursed to schools to place order for books through their respective SMCs.
- Library Management software has been developed by the department and linked with State MIS System(e-punjab).

#### Teachers: Transfer Policy and online Portal

- Objective of Policy:
  - o to distribute human resources in an optimal manner
  - to maximize job satisfaction amongst employees
- **Software** has been developed for implementing policy.
- Close to 30,000 teachers/employees have been transferred on the basis of online transfer applications till now in a fair and transparent way
- Decision of allotment is based on the total composite score of 255 points earned by a teacher
- Teacher earning highest points is entitled to be transferred against a particular vacancy
- Length of Service (total length of service, age) is the prime factor for decision of transfer

#### **Online Admissions**



#### **Online Admissions**

- Each school has created Online Performa as directed by state HQ for online admissions.
   School heads and teachers individually interact with parents/ students and motivate them for online admissions.
- Dedicated nodal officers have also been deputed at state level for all districts for this purpose.
- With an aim to ease the process of enrolment in government schools, the state education department had launched five helpline numbers to address the queries of parents and students.

#### **E-Books and Punjab Edusat Society**



E-Books and Delivery of text books

- Punjab School Education Board has uploaded **E-books** on its website.
- PDF files have been made available individually to the schools through various social media and on the website of the Department.



**Punjab Edusat Society** 

- Lectures are being delivered using edusat to share content with students
- Student interaction is facilitated with teachers, DEOs and other mentors through edusat
- Good and effective teacher training sessions are recorded and relayed through edusat to cover large number of teachers.

#### **Dedicated TV Channel and Radio Channel**

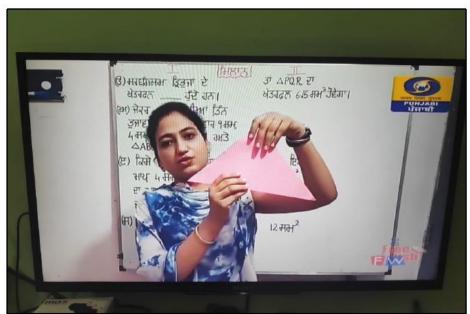


- TV channel DD Punjabi relay the five hours daily study programme for primary classes and Higher classes.
- For classes 6th 7th and 12th study programme are relayed on
   Swayamprabha Channel for four hours daily.



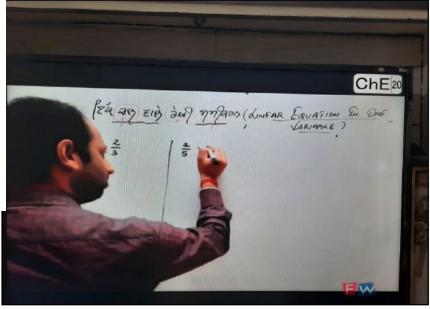
 Department of School Education has started streaming lectures on All India Radio, Patiala FM 100.2 daily 1-hour for Social Studies, Hindi, Science, and English from classes 6th to 12th.

#### Some snapshots of DD Punjabi and Swayamprabha Channel









#### **E-Content and Online Teacher Fest**



**E-Content** 



- Department has developed multimedia based quality
   E-Content for pre-primary to class 10th. Under this project,
   episodes of various subjects have been prepared as per Punjab
   School Education Board curriculum.
- This E-content has been provided to the students and teachers by various modes such as Pen drive, KYAN, Smart LED TVs, Projectors etc. and, recently through Mobile App namely iScuela Learn (available on Google Play Store) which is being utilized very effectively and highly appreciated by students and teachers.
- During COVID-19, a number of innovative teachers worked as a front warrier of education and innovated many new techniques, generated apps, links, educational games, for making Teaching-Learning process interesting and enjoyable during lockdown.
- To boost their enthusiasm and exchange of innovations, with other teachers, the department organized an online Teacher
   Fest and appreciated them by honoring them with certificates and cash prize.

#### **Video Lectures for Youtube Channel**

#### **Online Education**



Video lectures for Youtube Channel

- Teachers have been trained online to prepare video lectures.
- The Department compiles these video lectures and after being reviewed by an expert committee, these lectures are broadcasted through media.
- The Department has compiled and uploaded all the video lectures on its Youtube channel.

#### **Career Guidance and Coaching**



Career guidance and Coaching

To tackle the challenge of access to information among the school children and youth in Punjab https://punjabcareerportal.com/ has been created

- The Punjab Career Portal has been designed to facilitate learners with respect to a career domain as regarding:
  - Eligibility
  - Educational requirements
  - Colleges in different states and countries that offer the required courses
  - Scholarships and fellowships
  - Different entry-points to that field and various growth options in that career domain
- Login access created for all the 10 Lac+ students associated with government schools of Punjab from class 9th to 12th.
- Login access has been created for the 12th graduating students.
- Orientation session for all the DEOs, DDOs, HMs and Principals and school counsellors are held from time to time held. District Admin ID and School Admin IDs were created to monitor the progress of students in their districts.

#### **Ghar Baithe Sikhiya and Online Classes**



**Ghar Baithe Sikhiya** 



**Online Classes** 

- Acknowledging the difficult situation the teachers were in, the
  Department had also launched this campaign called 'Ghar
  Baithe Sikhiya' to keep the teachers motivated during that
  time and appreciate their efforts that they have been putting
  to stay connected to students and parents.
- Department conducted orientation of teachers, heads & district administration through Zoom App.

 School teachers, wherever possible, took classes through various Apps where atleast 100 students can participate at a time.

#### **Educare App**



**Educare App** 

- Developed, maintained, tracked by teachers
- App has been launched to facilitate e-schooling of students.
- This App gives access to teachers as well as students for all kinds of prescribed syllabus-based study material, video and audio lessons, annual syllabus and exam structure,
- Entire content has been uploaded on Educare App

User base

Students, Teachers, Parents and Field Teams

Coverage

Users 65 Lakh + Sessions 3.47 Cr

Page views 34.7 Cr

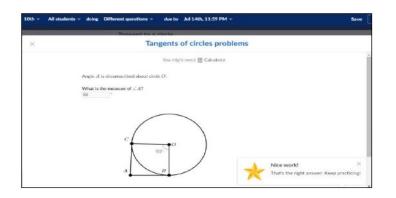
Downloads 24 Lakh

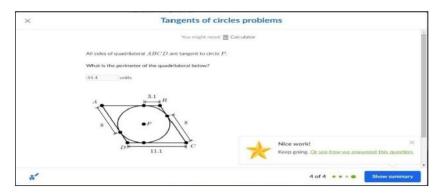
#### **Khan Academy**



## Personalised Practice collaboration with Khan Academy

- The Department has engaged M/S Khan Academy which is providing video lectures and other learning material for Mathematics free of cost to the students.
- The Schools have been provided access to the Khan Academy's lectures and other material.



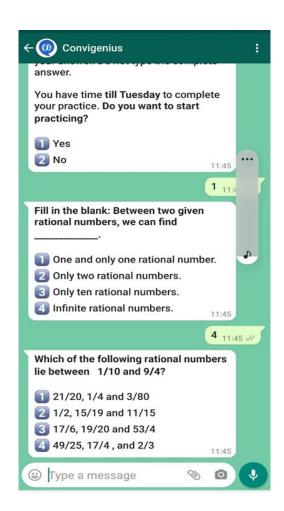


#### Screenshots from Khan Academy App

#### **ConveGenius**



- The Department engaged with ConveGenius to provide a convenient assessment platform for all students
- The student engages with the chatbot on WhatsApp and the learning assessment data is made accessible to the teachers and the department
- Around 10 lakhs students have participated in assessments from class 1 to class 10 using this chatbot.



### **Harmonizing Learning**

Structuring of content dissemination. There are three key processes those were adopted to make the content streamlined and coherent, and are owned by different teams:

- •State Resource Team: Creation of TV lessons
- •**Digital Sikhiya Team**: Creation of supporting resources like audio-visual content, quizzes, activities, and assignments
- **Digital Sikhiya Sahayak Team**: Review of, and feedback on TV lessons as well as other resources being created.

An important part of the process is continuous feedback from stakeholders on the content and resources being shared. This review is aided by a review form on **Darpan** — an app which is used state-wide to capture and make sense of various kinds of data, all the way from support being given to teachers, to challenges faced by parents, to review of content.



ਪ੍ਰਸ਼ਨ– ਰਣਬਮਬੌਰ ਨੈਸ਼ਨਲ ਪਾਰਕ ਕਿਹੜੇ ਪ੍ਰਾਂਤ ਵਿੱਚ ਸਥਿਤ ਹੈ? (ਰਾਜਸਥਾਨ)
ਪ੍ਰਸ਼ਨ– ਜੰਗ-ਏ–ਆਜ਼ਾਦੀ ਮੈਮੋਰੀਅਲ ਕਿੱਥੇ ਸਥਿਤ ਹੈ? (ਕਰਤਾਰਪੁਰ, ਜਲੰਧਰ)
ਪ੍ਰਸ਼ਨ– ਉਲੰਪਿਕ ਖੇਡਾਂ ਦਾ ਚਿੰਨ੍ਹ ਕੀ ਹੈ? (ਪੰਜ ਚੱਕਰ)
ਪ੍ਰਸ਼ਨ– ਪੰਜਾਬ ਦੇ ਲੋਕਾਂ ਦੀ ਮੁੱਖ ਖੇਡ ਕਿਹੜੀ ਹੈ? (ਕਬੱਡੀ)
ਪ੍ਰਸ਼ਨ– ਪੰਜਾਬ ਦੇ ਲੋਕਾਂ ਦੀ ਮੁੱਖ ਖੇਡ ਕਿਹੜੀ ਹੈ? (ਕਬੱਡੀ)
ਪ੍ਰਸ਼ਨ– ਸਾਨੂੰ ਸਾਹ ਲੈਣ ਲਈ ਆਕਸੀਜਨ ਕਿੱਥੋਂ ਮਿਲਦੀ ਹੈ? (ਪੌਦਿਆਂ ਤੋਂ)
"ਆਓ ਬੁੱਝੀਏ"
ਹਵਾਲਾਤ ਭਾਵੇਂ ਬੰਦ ਹੋਵਾਂ, ਫਿਰ ਵੀ ਬਾਹਰ ਪਾਓਗੇ,
ਬਿਨਾਂ ਪੈਰਾਂ ਦੇ ਸੈਰ ਕਰਾਂ ਮੈਂ, ਬਿਨ ਮੇਰੇ ਮਰ ਜਾਓਗੇ.. (ਹਵਾ)

Words for practice- 1) nature 2) stars 3) cloud 4) moon 5) rainbow

### ਸਕੁਲ ਸਿੱਖਿਆ ਵਿਭਾਗ ਪੰਜਾਬ

#### (Daily slide-Primary)



(Daily Slides  $-6^{th} - 12^{th}$ )

### **Project based - Experiential learning**





- Weekly projects activities of all subjects are being assigned to students which can be easily prepared at home.
- These activities are being prepared in an interactive way on an online platform.

#### **Department of School Education - Social Media Usage**

#### Over 10 Lakh likes on the Facebook Page

With the aim of reaching out maximum students through various mediums Department of school education Punjab is using **Facebook** and **YouTube** to disseminate information, learning material.

- (Words of the day, Udaan on GK program and other learning resources, Tv schedule, Daily slide (Timetable)
- Subject wise Daily Slides of each Grade (Primary and Upper primary)
- Video lesson, Link to Online lectures.



### Whatsapp Groups and Buddy Groups



Whatsapp Groups



**Buddy Groups** 

- Students' WhatsApp groups for each grade have been created.
- Organized classes and daily assignments shared over these whatsapp groups.
- Quizzes using google forms and automated reports for participants.
- Buddy System helps to promote friendship, better support, course work, behavioral and social needs
- It inculcates a greater sense of belonging and a more inclusive school community.
- A child gets paired with another child, usually one that is older and of higher ability.
- Study material is shared on daily basis and shared on whatsapp to the child after giving corrective measures by the teacher

#### **TOP(Teacher orientation Program - Punjab)**

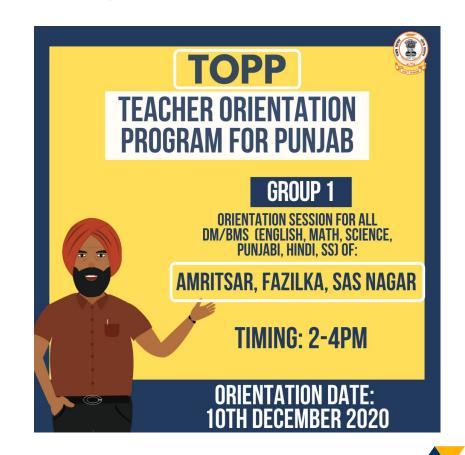
Capacity building program for teachers of Punjab

Department of School education started TOP-Punjab a series of Capacity building programs for teachers on Diksha and Online methods.

- Blackboard to broadband
- Nistha
- 3. Nishtha 3.0 (FLN)
- 4. PAS
- 5. Capacity building programs for PPPP

Under this program state level content creation and curation team were created.

- Regular training on the features of Diksha are being done
- Regular capacity building programs going on under TOP



#### **Blackboard to Broadband**

- ICT modules have been created on Diksha and shared with all teachers in order to enhance their skills on Technical tools.
- Modules have been created on Various topics like virtual classroom, Animation in Lessons, Effective ways to engage with students etc.





#### **NISHTHA FLN 3.0 Teacher Training**







- Department of School Education has launched NISHTHA FLN 3.0, an integrated training program for Teachers and School Heads at Pre - Primary and Primary Stage of Education by NCERT on the online platform DIKSHA.
- Over 95% teachers have completed all 12 courses
- All courses have been tracked using digital tools such as google forms, sheets and status report have been shared periodically with field teams for follow up

### Integrating technology: Punjab Reading Campaign 2022







- 100 days Reading Campaign was launched in the first week of January 2022
- The department partnered with **Story Weaver by Pratham Books** to provide free of cost access of storybooks
- Levelled books are provided to students with Readalong feature
- Tracking has been done through DASHBOARDS, giving visibility across all levels to plan and monitor

#### Integrating technology: Punjab Reading Campaign 2022

## Google Form and Google Data Studio has been used used to ensure participation of students and schools



100 Days Reading Campaign - School Status Dashboard 100 ਦਿਨਾਂ ਪੜ੍ਹਨ ਮੁਹਿੰਮ - ਸਕੂਲ ਸਟੇਟਸ ਡੈਸ਼ਬੋਰਡ

The district, block and type can be selected using these buttons ਜ਼ਿਲਾ, ਬਲਾਕ ਅਤੇ ਟਾਈਪ ਦੀ ਚੋਣ ਇਨ੍ਹਾਂ ਬਟਨਾਂ ਰਾਹੀਂ ਕੀਤੀ ਜਾ ਸਕਦੀ ਹੈ

	District → B	lock	•	School <sup>-</sup>	Гуре	<b>*</b>	
	School Name •	School Type	UDISECode	Week 1	Week 2	Week 3	Week 4
1.	gps mulla kalan	Primary	3030514301	Completed	Completed	Completed	Completed
2.	gps mulla bahan	Primary	3030514201	Completed	Completed	Completed	Completed
3.	gps khane ke ahal	Primary	3110707901	Pending	Completed	Completed	Completed
4.	gps kamal wala	Primary	3110703001	Pending	Completed	Completed	Completed
5.	gps farid saria	Primary	3030504701	Pending	Completed	Completed	Completed
6.	gps bhaur	Primary	3030502101	Completed	Completed	Completed	Completed
7.	Sutantrata Sangrami Hajora Singh GMS Mattran	Middle	3160404602	Completed	Completed	Completed	Completed
8.	Sutantarta Sangrami,Surain Singh Govt. pri school Veela Teja	Primary	3010303701	Pending	Completed	Completed	Completed

## Tangerine: Improving Collection of Assessment Data at Scale at Early Grade Levels

## What?

Tangerine is a learning assessment data capturing platform. It has been created by RTI - International, a global NGO. They work in the domain of education and support learning programs globally.

## Why?

This platform is being used for for making data collection easier, reducing the burden of paperwork and more reliable data collection and subsequent analysis. This platforms can work without an internet connection. It is aligned to global best practices of Early Grade Mathematics and Reading Assessment Framework.

## How?

There are three ways of capturing data

- Android application on phones
- Progress Web Application for laptops only
- Online forms for iOS users

### **Tangerine: Planning and training**



Planning workshop



Master trainers' training



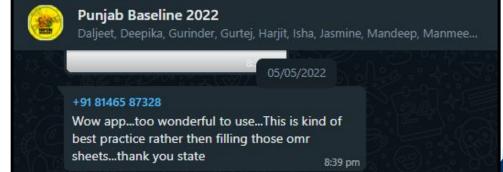
Baseline conducted in schools

### Tangerine: being used in the field





**Testimonials** 



#### TicTac Learn: enhancing the digital resource depository





- SCERT Punjab in partnership with Central Square Foundation (CSF) launched TicTacLearn (TTL) Content.
- This repository of learning content and videos has been developed by Central Square Foundation and Google.org.
- High-quality digital learning resources that aims to solve three critical aspects of online learning i.e.
  - Quality content,
  - engagement and access.
  - Assessment , Tracking and sharing of data
- Multiple Platforms
  - Youtube
  - Facebook
  - Portal
  - Whatsapp Sharing

#### **Monitoring and Review**

#### Periodic Review Meetings on online calls



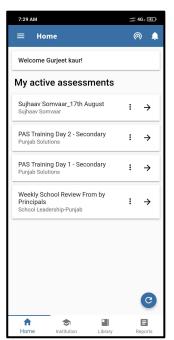
- Periodic session have been conducted to review the progress. These sessions are chaired by Hon. Secretary / Director General School Education.
- All the Component Heads at the state level present the progress of their respective components
- Entire District Teams including DEOs, Dy DEOS, DIET Principals, PPPPDCs, BPEOs attend the meeting.
- Feedback/Suggestions are invited for innovation/making the system further better

#### Use of technology for Effective support and transparency

#### Objective

- To strengthen effective data collection from the ground.
- To provide an effective tool to mentors to capture qualitative inputs
- Check the implementation and progress from trainings or projects initiated by the Dept.





"The Darpan App has helped bring discipline and routine to the school visits conducted by the BMs and DMs, and has made supervision much easier. Sending feedback to the state department about the strengths and weaknesses of the school and the areas where they might benefit from the department help can be seamlessly communicated with Darpan."

District Mentor, Science, Punjab

90%

DMs and BMs recording School Visits

60000+

Of classrooms visited in Last academic year.

97% schools were covered during school visits by the Mentors

## Maape Adhyapak Milni Improving community Participation















Non-participation

They don't know. They can't help'

*Inform* 

'I think it's important for you to know this'

Consult

'Their feedback helps us improve' 'What are you facing issues with'

Partner

'Let's do this together'

#### **VIRTUAL PARENT TEACHER MEETING** 23-25 MAY 2020

5,00,000 +

Congratulations on making this a success!



























## ANALYSIS OF PTM DATA FILLED BY SCHOOL HEADS

9,89,976

Total parents spoken to

81%

Average parent attendance

10,556

Number of Schools which filled the data

8,41,760

Total students spoken to

**Primary** 

86,986

Total SMC members spoken to

97%

Schools reported conducting staff meeting before PTM

## 6,71,053

Total parents spoken to

78%

Average parent attendance

3,433

**ANALYSIS OF PTM DATA FILLED BY** 

**SCHOOL HEADS** 

Number of Schools which filled the data

588,436

Total students spoken to

24,386

Total SMC members spoken to

99%

Schools reported conducting staff meeting before PTM

Secondary

## Thank You