Strengthening Data Ecosystems for Education in India

Executive summary

In the last two decades, India has made a considerable effort to provide education for all but its learning outcomes are consistently low. It is hoped that new technologies like AI will help at various levels from making lessons more student-centric to analysing big data for better resource allocation. But the road ahead is long — or let's say, exciting — for problem solvers. There is scope to develop more socially-considerate digital software, hardware, and infrastructure.

For our project, we have picked an equally vibrant opportunity: how might we strengthen education data ecosystems to meet the needs of our students and their communities better?

Edtech has seen a sharp uptick in the recent years with the public, private, and social sectors working towards context-specific challenges. It is an all-consuming effort that leaves no bandwidth for the question of data. There are very few interventions on this matter. Through this project we therefore want to start a conversation on consent, privacy – and agency – that can skew or straighten our dynamic with technology.

The need to reflect on data governance in education shines with a different urgency when held against our unfolding past. India had the world's longest shutdown of schools due to the pandemic — leaving in its wake, dire consequences. An initial study by Azim Premji University found that 92% of children on an average had lost at least one language ability by 2021.[1] This is to say India's students have regressed academically; they will scramble to make up for lost time as schools reopen. But in doing so, if they (re)turn to edtech, they should not be short-changed.

> **How might we encourage responsible data stewardship in education? How might we empower those affected by data-based decisions to advocate for themselves, using their data?**

1. Azim Premji University, *Loss of learning during the pandemic*, February 2021

This report summarises learnings from a collaborative research project by Quicksand and Mozilla Foundation, that sought to understand the landscape of data ecosystems within public school systems in India, to inform both Indian and global stakeholders and to start a conversation around data benefits and harm in this context. This project is in partnership with USAID.

moz://a festival 2022

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Our research process

We have focussed on India's public schools for our foundational research because of their reach, heterogeneity, and complexity.

- **Interviews with experts** from various backgrounds to develop a deep understanding of edtech in India.
- **Workshops at MozFest 2022** to gain a global perspective on what we learned from the above conversations.
- **Secondary research** to substantiate our insights from the interviews, and workshops.

The main findings from this research have been synthesised into design opportunities that will be taken forward by Mozilla Foundation's Working Groups.

This deck is meant to support their work by providing additional context and resources for education, technology, and data governance in India.

See the appendix for more details on our research process.

Table of contents

How to read this deck?

These sections are semi-autonomous. You can read them in any order of your choice. But we urge you to make connections between them. We have included (i) cross references, (ii) additional media, and (iii) case studies to encourage lateral thinking.

1.

Public education in India

School Building by Rasama studio from NounProject.com

From the start of this millennium, India made a concerted effort towards universal education with the result that its schooling system is one of the largest in the world today.

1. Central Square Foundation, *School education in India: Data, trends, and policies*, 2020
2. Ibid.
3. Ministry of Education, *National Digital Education Architecture (NDEAR)*, July 2021

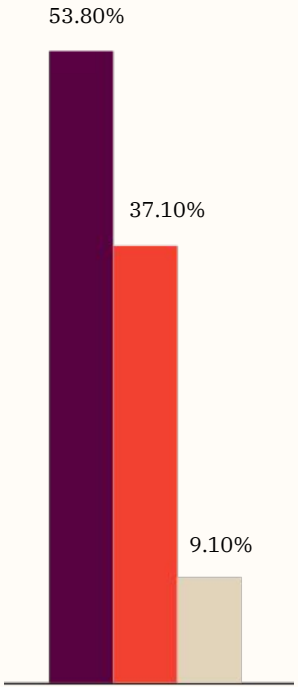
And the good news is that the registration rate for girls has also improved. Their gross enrolment ratio in primary education grew to 100.7% in decade's time, by 2015-16.[1]

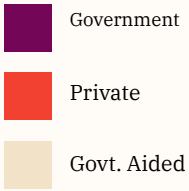
1. Central Square Foundation. *School education in India: Data, trends, and policies*. 2020.

Image credit: globalcitizen.org

Public schools

70% of the country's schools are government-run. They mainly cater to children from lower income groups in rural areas, and employ a majority of India's teachers.[1]





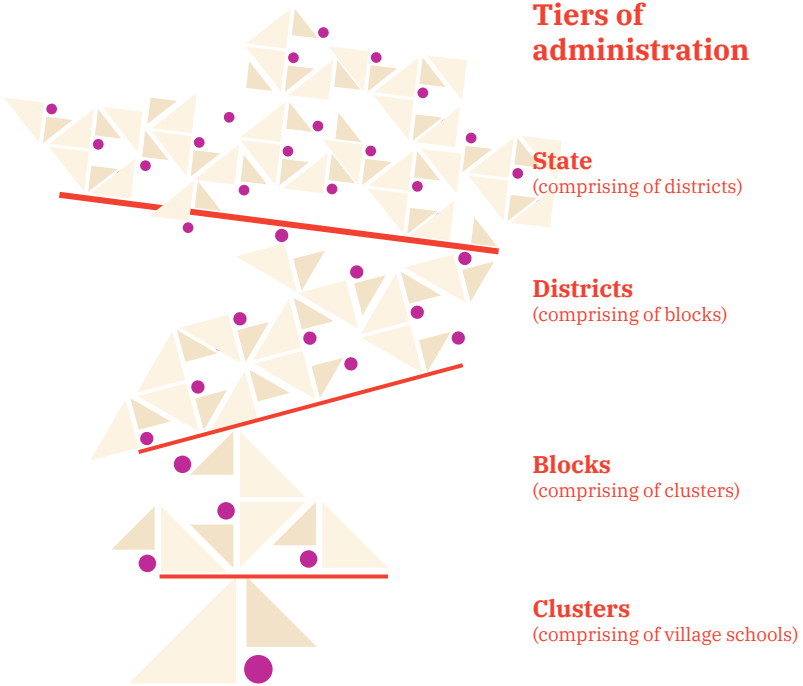
Percentage share of teachers by management type[2]

1. Central Square Foundation, *School education in India: Data, trends, and policies*, 2020
2. Ibid.

How are public schools administered?

Education is a state responsibility in India so its quality can greatly vary across the country. In each state, public schools are clustered, and governed in a tiered way. This implies that the top ministry officials may be far removed from the ground reality in their constituency.

Read more on policymakers and frontline administrators in the last section.



Main challenges of the public schooling system

The learning outcomes of the public system are suboptimal because India's expansion efforts were not holistic. By 2014 the government had enrolled 120 million children in schools but it did not proportionately invest in early childhood care and education (ECCE). This means that most students start with a weak base. According to a study for UNICEF more than 50% of the country's first graders do not have the basic skill sets upon which other learning relies – and their predicament is worsened by a deep crisis on the supply side.[1]

India's National Education Policy 2020 called this India's 'learning crisis.' In a first of its kind policy move, it stated that universal foundational literacy and numeracy in primary schools will be 'the highest priority of the education system' moving forward.[2]

1. Central Square Foundation, *Understanding and Solving India's Foundational Learning Crisis*, September 2021
2. Central Square Foundation, *School education in India: Data, trends, and policies*, 2020

Most teachers are absent, overburdened, or ill-equipped in public schools. They get less than 20% of their annual time to teach.[1] On most days, they are conscripted for a wide range of activities that are beyond academics from verifying ration cards to conducting cattle census. This begs the question: are they government employees first or teachers?

They are also assigned combined classes due to staff shortages, where students from multiple grades must be taught together. This adversely impacts education, as teachers can't give personalised attention to those who need it, further intensifying the learning gaps that already hold children back.

In the last decade or so, technology has stepped in to address these challenges in various ways.

As of 2022, 10-15% of schools in several Indian states were single-teacher institutions. The pupil-teacher ratio (PTR) at senior secondary schools is 47:1.

NO TEACHER, NO CLASS: STATE OF THE EDUCATION REPORT FOR INDIA 2021, UNESCO DELHI - Read full report here

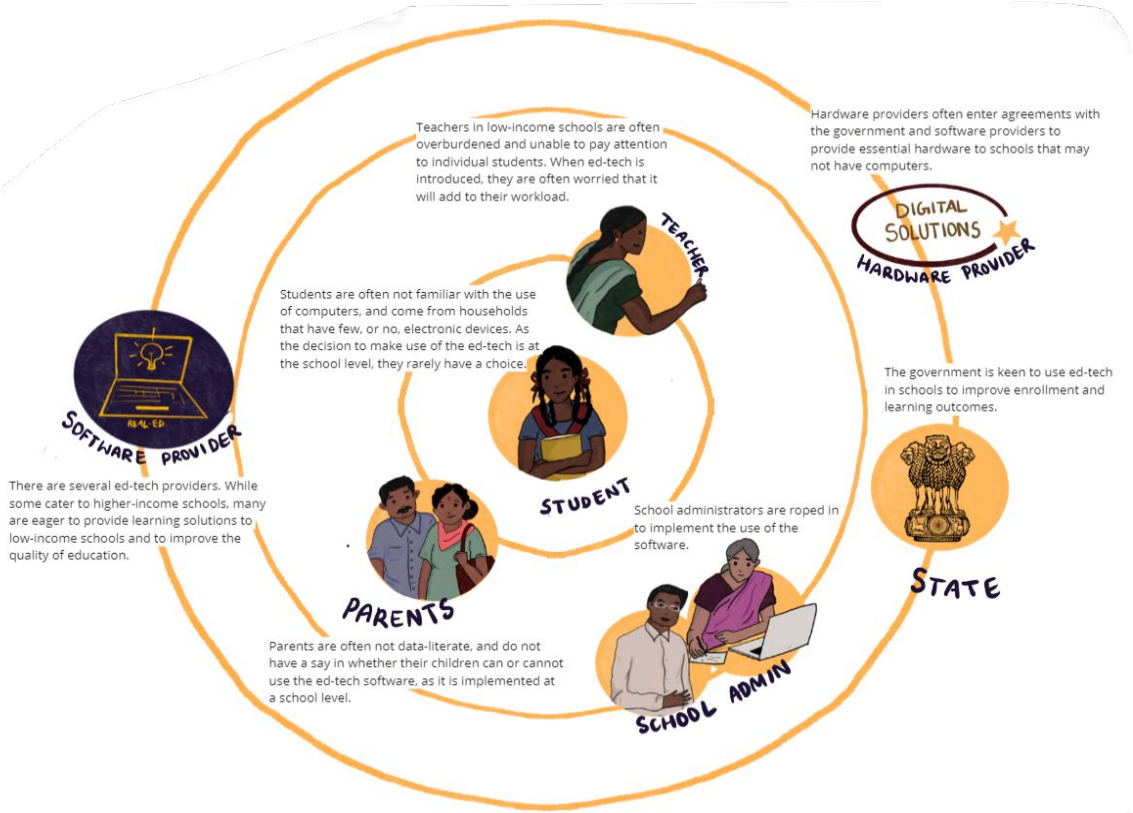
1. Deccan Chronicle, *Teachers spend only 19.1 percent time teaching*, September 2018

2.

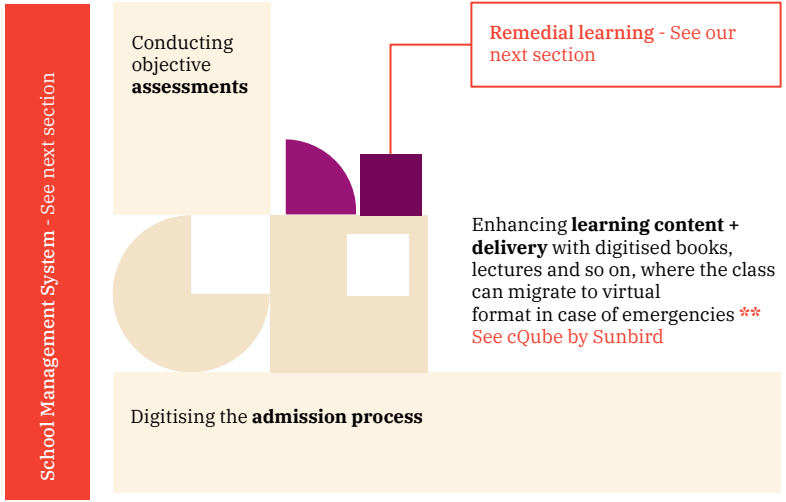
Edtech in India

Education Technology by Massupa Kaewgahya from NounProject.com

The edtech ecosystem in India



Key applications of edtech in schools



** **What did Covid teach us?**

Most states had to fast-forward their adoption of technology to provide remote learning at scale. Lo-fi tools like WhatsApp were also used to reach the last mile. Industry experts are confident that this has reduced the resistance to change: administrators are more willing to digitise their processes, having seen the benefits of edtech during Covid. But it is prudent to remember that India still grapples with an immense digital divide. Most people don't have access to proper connectivity and devices. 40-70% of the country's children don't have a smartphone or computer at home.[1] This needs to be taken into account while designing interventions.

1. BCG, *India needs to learn - A case for keeping schools open*, 2022

Broad outlook

The government's Digital India Campaign has provided great impetus to the adoption of technology in all sectors including education. The National Education Policy 2020 was positive that 'new technologies involving artificial intelligence, machine learning, block chains, smart boards, handheld computing devices and other forms of educational software and hardware will not just change what students learn in the classroom but *how* they learn [too].'[1]

This call for digital transformation is not supported by robust data policies though. See Slide 33 for further information.

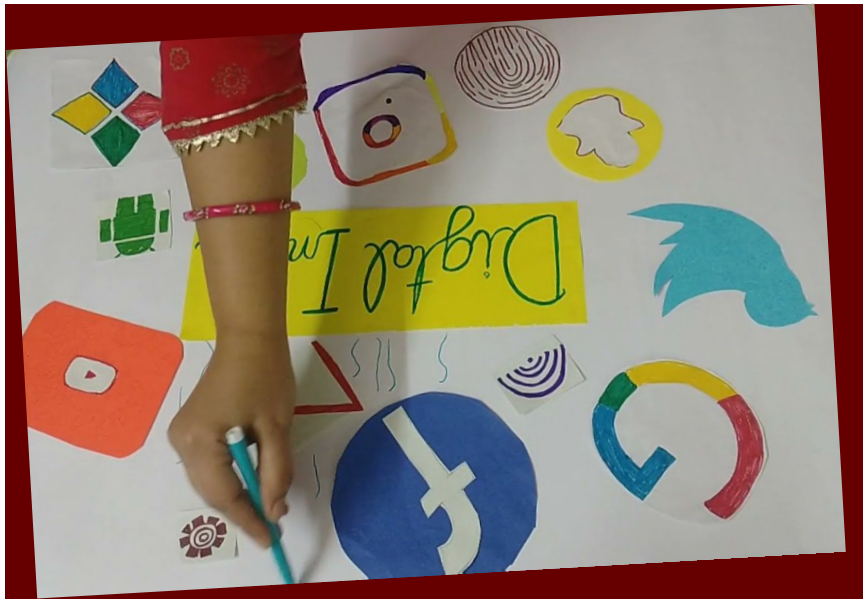


Image credit: youtube.com

1. Ministry of Human Resource Development, *National Education Policy 2020*

Free and open source software

Most states procure edtech from not-for-profits, start-ups, or big tech. But in the recent past, some like Kerala have moved away from this vendor model to develop their own digital solutions with free and open source software (FOSS). FOSS can be installed on multiple computers without a license fee. It is also easy to customise the end product for specific needs. *This enables decentralisation, where the FOSS application can be used throughout the supply network, right upto the end educator in far flung villages.* During emergencies, the government can also respond faster, because it is not dependent on an external partner.

Read our case study on KITE to know more.

Image credit: indiaeducationdiary.in

CASE STUDY

KITE

Kerala established KITE to digitise its education sector in 2001. Over the years this project has grown to include a school management system that covers the entire state, with auxiliary programmes. KITE reached 93% of Kerala's children during the pandemic – a feat others struggled to achieve. What did it get right? Here are a few lessons from KITE's journey so far.

- KITE **uses FOSS** that is cost-effective, customisable and therefore scalable. It functions as a special company under the state, which allows for **agency with alignment**.
- KITE's learning **content is developed in-house** with a strong pedagogical base, to rhyme with the state vision for education.
- Right from the start, selected teachers were trained to implement IT interventions in their schools following the philosophy of **'empowered, not specialised'**. KITE took **a systems approach to capacity building** and also educated the state's students and their mothers on cyber security and etiquette. This is particularly relevant given that parents have a big say in the edtech ecosystem. Scroll to our last section for further information.
- KITE has **a streamlined process for data sharing**. Administrators only get to see what is useful for their role. In some cases they are simply provided a synthesized report to protect raw data.
- Indian bureaucrats are generalists. They move from one sector to another throughout their career. But KITE is different. It started out with a ten-year mission statement that has been carried out by **a dedicated team that accrued expertise over time**. The company's old guard has kept itself abreast with the latest developments in the sector, which increases their bargaining power.

> 'We had to partner with Google during the pandemic, we made our stand very clear. No personal details of any student can be collected. We also demanded master control over the platform (which is not easy to get in a partnership with big tech). And the agreement was vetted by a solicitor from the Supreme Court.'
>
> SENIOR OFFICIAL FROM KITE

EXAMPLES

Personalised Adaptive Learning (PAL)

In this section, we will focus on two examples of edtech that are pertinent to the Indian context starting with Personalised Adaptive Learning (PAL). PAL uses artificial intelligence to address the challenges mentioned on Slide 11 & 12.

Students are given a series of tests to determine their current level of subject-knowledge based on which the software presents customised content to them. Most companies invest heavily in the user experience to ensure stickiness. Interactive games, multimedia, and real-time feedback are used to also counter rote learning. *More importantly though the algorithm dynamically adjusts its outputs according to the child's progress. They can therefore learn at their pace: a privilege that the conventional system doesn't accord.*

Image credit: reddit.com

CASE STUDY

Mindspark

The computer lab at Churu's public school in Rajasthan was set up recently. You can tell because the hand painted sign at the entrance is still fresh. It is a simple room; a neat row of laptops is set up against the wall with small stools. The windows are shut, and the keypads are covered in plastic to protect the machines from dust-laden heat. (The hardware has to be handled with care for it is publicly procured. It does not belong to the school.) Someone has written "Mindspark'' in a fancy style on the blackboard.

Mindspark is a grant-funded project on adaptive learning that was sanctioned by the state government in 2017. Each child is allotted a laptop where they learn Math and English on an AI-enabled software that provides lessons at their level. The school has benefited from Mindspark – the students are more confident now – but implementing it is not without challenges.

Mindspark conducts an orientation for teachers at each project site, to introduce them to data-informed decision making. *They are expected to integrate new technologies into their routine but the government does not have a requisite capacity building programme for them. Furthermore, data is viewed with apprehension: it can be used for punitive purposes, to blame and shame the staff. This, amongst other reasons, makes teachers wary of edtech.*

> "I used to be at the head of the class; all my students would look at me. Now, they don't ask me anything - they look at the walls [where the computers are] and learn. I don't even have a desk for myself at the lab."
>
> TEACHER FROM A MINDSPARK SCHOOL

EXAMPLES

School management systems

As explained in the previous section India's learning challenges are linked to resource constraints. The staff and infrastructure in public schools are stretched thin. And the situation has not improved, partly because of data gaps.

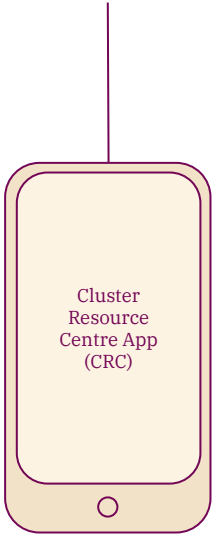
The public system generates copious amounts of data on schools. But this information is prone to errors, delays, and corruption because it is manually collected and digitised. It is also fragmented, which deters timely analysis. For example, a student's attendance is kept separate from their performance record. By the time this data is compiled and translated into a report it becomes redundant. To make matters worse it is rarely returned to those on the ground: educators don't benefit from the datasets they help create.

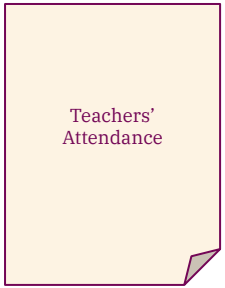
This is another ripe opportunity for edtech as Sunbird's case study shows.

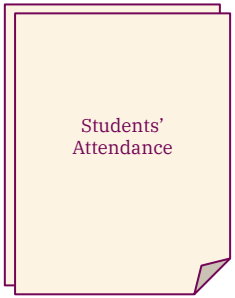
Image credit: Jan Banning's *Bureaucratics*

Some datasets currently maintained by the public system

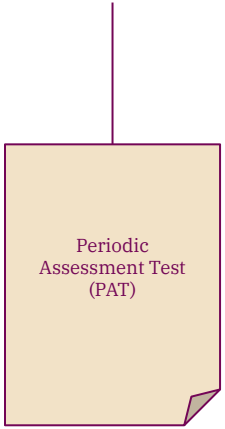
The Cluster Coordinator maintains a record of resource utilisation. For instance, how many sports kits were distributed and used at each school?





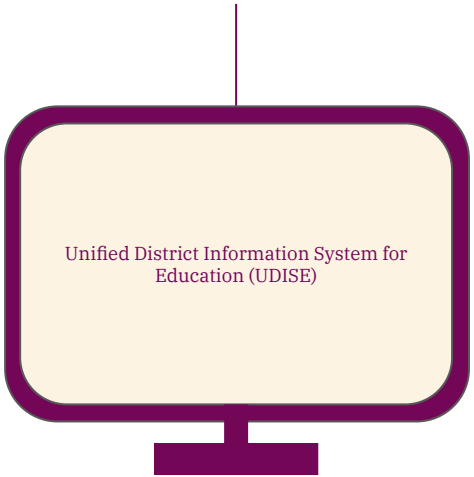


Some states conduct periodic assessments to track performance. This data too is captured by schools.



U-DISE is the central government's main portal for data collection and management. It is used throughout the country.

PROMPT: We have shared their form for data collection on the next page. What do you observe?



[redacted]

Click here to view the complete form

Image credit: Jan Banning's *Bureaucratics*

CASE STUDY

cQube by Sunbird

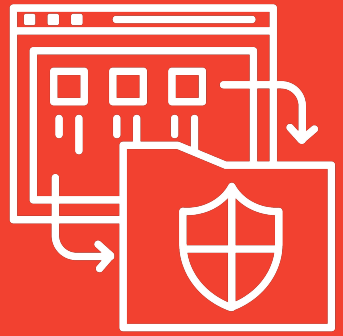
EkStep Foundation has developed a set of modular blocks called Sunbird that can be configured by any service provider to create technology solutions for different domains of education.

In 2017 the central government used Sunbird to build a consolidated platform for knowledge sharing called DIKSHA. Think of it as a one-stop shop for schools, where different states can upload e-content for students, and teacher trainings.

Internet search is not an instinctive habit for most Indians so the learning material had to be served in a more direct way. DIKSHA therefore uses 'energised textbooks' with QR codes to meet students where they are. The user journey is designed such that their parents can download and store content on low-end phones.

EkStep's follows a lean data policy for DIKSHA and otherwise. Children are not expected to provide any login details to use the above mentioned textbooks. This project has gained some traction because it is front-facing. But Sunbird's digital solution for the messier back office is equally noteworthy.

cQube, another building block in its repertoire, is meant for administrators. It enables better decision making by ingesting data from the existing, disparate sources. Each dataset is checked for errors and processed to provide the end user with neat charts and graphs that they can toggle around with. For instance, they can plot a school's staff attendance against its academic progress with a simple click. This kind of analysis can be done at the district, block, cluster, and school level. Analysts can also download raw files to conduct their own research.



3.

Data Governance in Education - Opportunities

Data Transfer by Vectors Point from NounProject.com

As illustrated in the previous section technology has created a dent in education but its advancement needs to be supported by responsible data practices. Otherwise our tryst with innovation will remain somewhat pale and anxious with the threat of digital harm always lurking.

This section starts with a commentary on how education, technology, and data are perceived in India to provide the larger milieu against which our provocations may be read. These provocations are organised stakeholder-wise to emphasize the importance of collective action in change.

- Policymakers
- Frontline administrators
- Parents
- Teachers
- Service providers
- Students

Vedantu's data breach risked 680,000 customers data

BENGALURU

Private schools complain of data security breach

Amidst COVID-19, Who is Watching Over Children's Data on Ed-Tech Platforms?

FEATURE

Inside India's booming dark data economy

Good education = Better life

Education is highly aspirational in India. People believe that it can lead to upward mobility. A good school provides all those soft, intangible assets, which get us ahead in life. Skills, etiquette, and the right friend circle. (This idea of education is prevalent in other stratified societies too. The Chinese think that a well-reputed university can get their children *suzhi* (素质), which denotes social class amongst other qualities.)[1] *But the pressure to perform well can be so intense that students often suffer from debilitating stress, and mental health problems.*

Add tech to the mix and it can get worse.

Released in 2009, *3 Idiots* critiques India's education system. In this scene the dean of an engineering college motivates new entrants with his infamous speech on competition, which encapsulates how Indians think of education.

1. TechCrunch, *The casualties of China's education crackdown*, September 2021

Most Indians have an optimistic view of technology. They are game for any new idea or innovation that helps them know more, upskill, and get an edge over their peers. In 2020 Google found that 4 out of 5 Indians use YouTube to learn with videos.[1] But the public understanding of data is naive.

CHALLENGES

People are unaware of the current discourse on digital rights because of linguistic barriers. Most information on these topics is available in English that does not cater to local needs and awareness gaps. This affects their ability to visualise data harm, which is anyway a vast and nebulous concept.

Even when language is not a barrier, the kitchen talk on data can be shallow. Some people acerbically joke that consent and privacy are not intrinsic to Indian culture, where one is expected to obey their higher ups without question.

Collecting personal data at scale has also been normalised with government schemes like Aadhaar. People think privacy is a collateral for state-driven digitisation. This undermines the freedom of choice in virtual transactions as journalist and activist Nikhil Pahwa explains in this interview.

> "In the early days of conversation around 'privacy' people used to say India is such a social country. If you are sitting with someone on a train they will know your life history by the time you are done with that journey. But we always have some information that we don't broadcast to everyone. Something that is private to us."
>
> NIKHIL PAHWA, DIGITAL RIGHTS ACTIVIST AND JOURNALIST

1. Google, *Year in search 2020 - India*

This creates a fertile ground for improper conduct by private players. Some startups 'persuade' parents to buy edtech products for their children lest they get left behind, thereby adding to a family's academic anxiety.[1]

These companies employ whatever tactics they can to expand their user base because their valuation depends on reach and engagement (not learning outcomes). *How many people signed up for their platform? How long did they stay on it for?* They must function like Uber, Amazon or any other tech provider. Attracting, acquiring, and profiling markets to further attract, acquire and profile.[2]

You can also read about India's dark economy, where all kinds of data is sold.

> "They told me my daughter doesn't even know basic things. How will a girl from such a small town compete in a national-level exam? The sales scheme [they] have going, scaring people – this is wrong."
>
> HARD SELLS AND 'TOXIC' TARGETS: HOW INDIAN EDTECH GIANT BYJU'S FUELS ITS METEORIC RISE, REST OF WORLD - Read full story here.

(Though this is a description of the B2C segment it helps in understanding how edtech is positioned – and pushed forward – in Indian society. The commercial sector has a greater presence in the public domain than some of the non-profits we spoke of in the previous section.)

1. Rest of World, *Hard sells and 'toxic' targets: How Indian edtech giant Byju's fuels its meteoric rise*, August 2021
2. IT for Change, *Platform capitalism and edtech*, January 2022

PROVOCATION #1

How might we improve the data literacy of all those who are directly or indirectly involved in public education?

PROVOCATION #2

How might we encourage a new metric for success in edtech? One that promotes the overall wellbeing of students – not just their academic growth? This necessarily means opening up the industry and society's imagination of education, technology, and data for the three are entangled.

Above the law

The question of data literacy is all the more crucial because India does not have a robust law for edtech yet.

The Personal Data Protection Bill, 2019 (PDP) places heavy restrictions on any “fiduciary” who collects and processes children’s data of any kind. *But the government – and its agencies – can exempt themselves from it. They can access de-identified data of any citizen (including minors) without declaring a specific objective. This essentially grants them immunity against regulation.*[1]

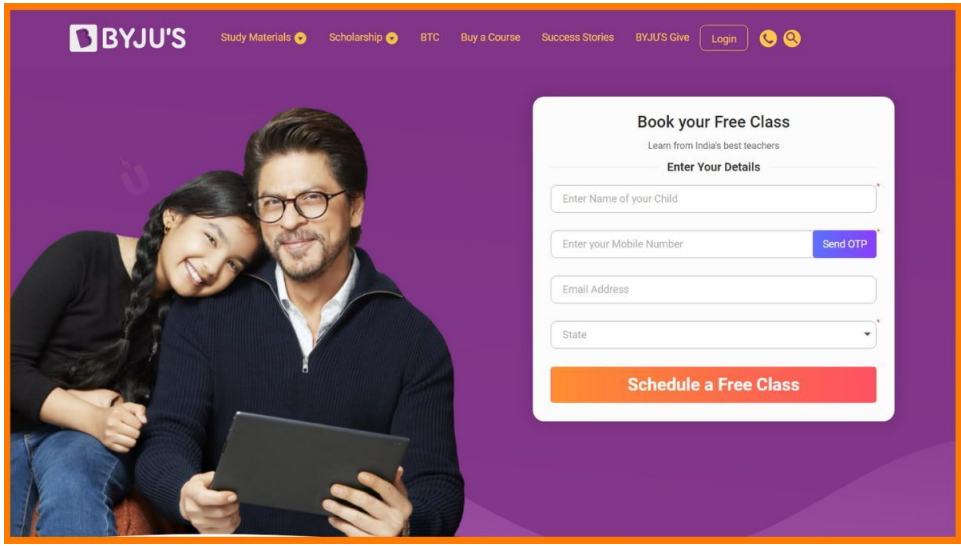
1. The Bastion, *As we may teach*, May 2020

PROVOCATION #3

How might we nurture a bottom-up movement for better data security? In particular, can we find new ways to involve those who are disillusioned by the public system?

Policymakers

Most edtech solutions are not rigorously tested for their efficacy. This leads to ad hocery, where policymakers tend to choose those products, services, or interventions that have a high token value to gain people's favour. And they are rarely questioned by their colleagues because the work culture in public education is highly hierarchical.



Mindspark conducted a research study on the effectiveness of their software with J-PAL thrice. This is considered a watershed moment for edtech in India. But most other startups use star power to sell their products.

Like the public, state officials too have a skewed understanding of data. *They consider it an economic asset like oil that can be collected now for future benefits.* [1]

> “Everyone [in the administration] wants data but they don’t know what to do with it. We get these requests all the time and we ask them if they will use it, but they never actually do.”
>
> - EDTECH PROVIDER (NON PROFIT)

1. Bangalore International Centre, *When public becomes private - w. Nikhil Pahwa and Mitali Mukherjee*, April 2022

PROVOCATION #4

How might we enable policymakers to evaluate and choose the right edtech solutions for their constituency? Within that, how might we get them to give appropriate weightage to data practices in their decision-making?

Frontline administrators

Cluster coordinators can get last-minute demands to submit data leaving them swamped with paperwork. They tend to collect the same information again and again because of poor synchronicity between the block and district offices. This leaves them with no time to support the schools under their purview, which is also their mandate, leading to resentment. A study by Accountability Initiative noted that cluster coordinators use terms like “postmen” and “clerk” to describe themselves – when in fact they are teachers by qualification.[1]

> Interactions with block officials are largely one-sided, top down, transactional and almost entirely around data requirements that are often initiated by the seniors – this is common across the states.
>
> - MAPPING WORKFLOWS OF FRONTLINE EDUCATION ADMINISTRATORS: CLUSTER RESOURCE CENTRE COORDINATORS IN BIHAR, ACCOUNTABILITY INITIATIVE

1. Centre for Policy Research, *Mapping work flows of frontline education administrators: Cluster Resource Centre Coordinators in Bihar*

CASE STUDY

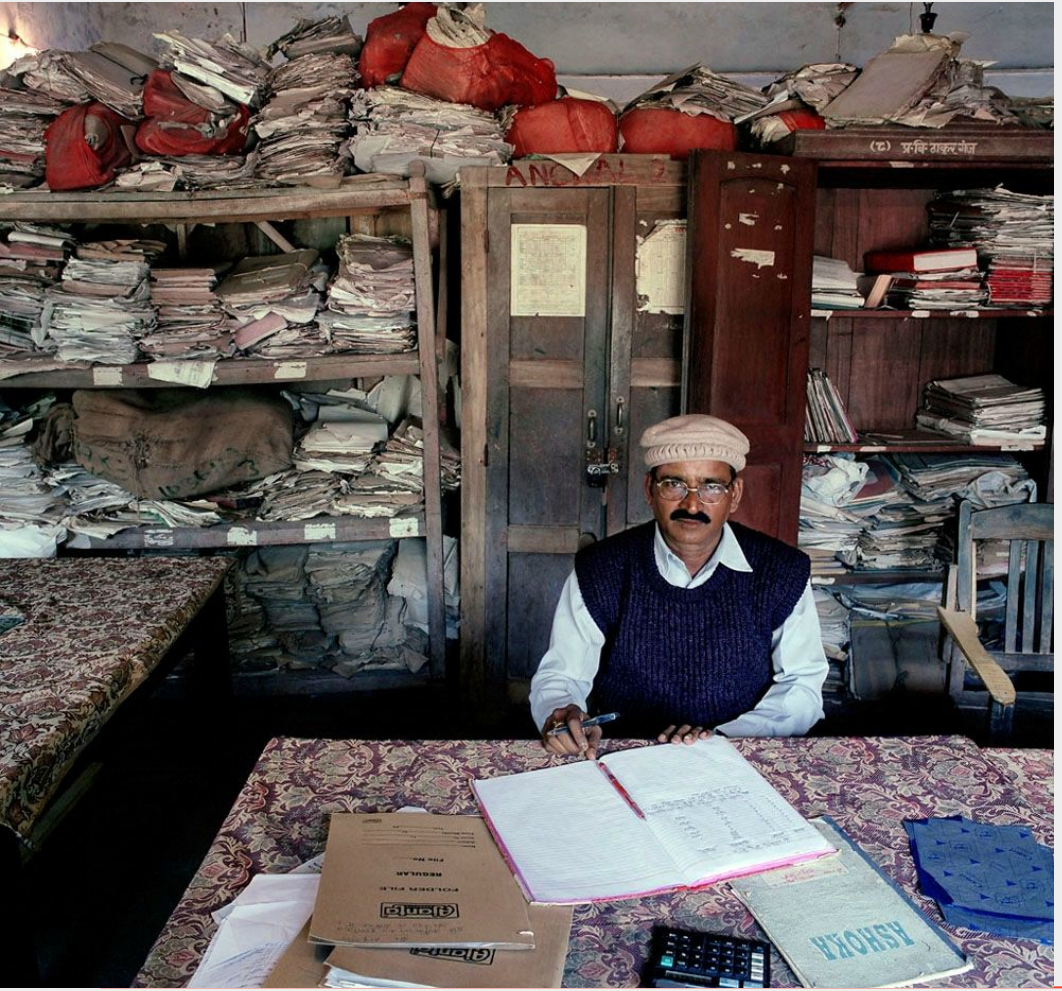
Edtech Tulna

The Central Square Foundation developed Edtech Tulna in collaboration with IIT Bombay to support decision-makers. This was done in light of the fact that most policymakers do not have the capacity to evaluate edtech tools in the procurement process. So they would end up going for hardware solutions alone given that hardware, being tangible, has a clearer evaluation criteria.

Tulna enables users to compare different edtech solutions and choose the right one for their institution/s based on the design of the product. But it does not have any indicator for data practices because it does not yet deal with the backend architecture of edtech, which is a distinct component of its own.

Edtech Tulna uses the visual metaphor of a marketplace, denoting consumer welfare – not digital rights, because it is currently focussed on reducing the information asymmetry around software products for education.

Tulna's evaluation criteria for edtech products



PROMPT

View Jan Banning's series on *Bureaucratics* that portrays the quotidian life of frontline administrators across the world. The paraphernalia in each picture tells us something about paper trails, and their broader work culture. What do you observe?

PROVOCATION #5

How can we make our data practices more meaningful – and effective – for frontline administrators?

Parents

Worldover, children feel that their parents are not well-equipped to protect them in the virtual world – and India is no different.[1] Here too the older generation does not know as much about privacy, data harm, and pay-offs to navigate digital products effectively.

Many of our experts observed how parents were apprehensive about e-learning during the pandemic. In most households, children don't have a device of their own. They tend to borrow one from the elders to chat, play, and watch content when they can. *So mobile phones symbolise leisure or entertainment, and parents find it difficult to imagine that they can be used otherwise. In addition to that they were not accustomed to gamification.* (The interface of many learning applications looks un-serious.)

> "Children from all parts of the world want parental involvement, but they feel that parents are hampered by a lack of knowledge and skills."
>
> - OUR RIGHTS IN A DIGITAL WORLD, 5RIGHTS FOUNDATION - Read full report here

1. 5Rights Foundation, *Our rights in a digital world*, 2021

So it was essential for an authority figure (like teachers) to broker trust and handhold parents through their tech journey.

The process of informed consent in particular is difficult due to language barriers and jargon. It needs greater care given that it is intrinsic to the idea of privacy.

> "We had to get their consent offline. We drew up a basic form and translated it into local languages. But our programme team felt it was too difficult for parents. They would get alarmed and not allow their adolescent girls to join the platform. So we went door-to-door to get their consent, offline... We still can't tell how many of them truly understood knew what they were signing up for."
>
> - EDTECH PROVIDER (NON PROFIT)

PROVOCATION #6

How might we work with communities to design more meaningful consent protocols? Perhaps: the first step is to study their conception of data harm, benefit, and privacy that can be different from the mainstream.

Teachers

Teachers can feel overwhelmed by the prospect of syncing their classroom instruction with edtech given how stressful their routine already is. In addition to that, they may not have a say in decision-making given the skewed power dynamics in public education. But their role is pivotal: teachers are the face of their institutions. As mentioned on the earlier slide parents look to them for confidence and guidance in enlisting their kids for edtech.

Read Slides 11 & 12 to get a better understanding of this topic.

> “Teacher training is very critical for they hold the student's experience of edtech. They can facilitate the dialogue around choice between parents, students, service providers, and the administration.”
>
> - MOZFEST WORKSHOP, PARTICIPANT

PROVOCATION #7

How might we empower teachers such that:

- they can use data more effectively and meaningfully in their routines?
- they can be better data stewards for their communities?

Service Providers

Edtech companies need a strong business case for good data practices because they operate in a highly competitive environment. They are more likely to change from within when they see that building resilient systems is good, sustainable *and* profitable. The edtech industry has earned bad press in the recent past for false advertising, puffery, and other malpractices. Some startups banded up to create a Consortium for self-regulation. But in this panel discussion by CNBC TV18 you may observe how this step was taken to avoid public action that is viewed as a "hindrance" or "roadblock" to growth.

Most of their decisions are driven by engagement. Edtech companies have to provide a stimulating experience to ensure that their users stay on after they have been onboarded.

But it is not easy to design for the Indian context that is replete with individual and infrastructural barriers. Small and shared devices, low storage, multiple languages, patchy Internet – the list goes on. With so much to take care of, data privacy takes a back seat.

Most developers also only have a notional understanding of digital rights and appropriate practice.

> "A lot of decisions are driven by UX. We need a checklist of five to six strong data principles for designers too, that they can bake into their work."
>
> - EDTECH PROVIDER (NON PROFIT)

PROVOCATION #8

How might we incentivise good data practices in education such that service providers prioritise privacy across all verticals of work?

Students

Many students in the public system are first generation learners (FGL). They are not accustomed to the state apparatus and therefore depend more on their school principal and/or teachers – whoever they favour. Even if that were not the case, it is a challenge to get children a seat at the table. They are often patronised or unconsidered by their parents, and policymakers. It is not customary to ask a child's opinion even when the matter at hand pertains to them. (We have covered this point in a different way on Slide 29 to explain how Indians view 'consent').

Yet students have their own way of helping each other. Most cohorts have a peer leader (often, boys) who share hacks and tricks to navigate authority better.

Image credit: aljazeera.com

PROVOCATION #9

How might we create an environment where students have a fair say in data-related decisions that affect them?

4.

Appendix

Clipboard by Start Up Graphic Design from NounProject.com

Interviews with experts

We spoke to people from the commercial and social sectors of edtech to get a rounded perspective on data governance in schools. Their work profiles ranged from project management and growth to impact evaluation. The interviews covered a wide range of settings as their companies operate in different states like Kerala, Karnataka and Rajasthan to name a few.

Our discussion guides were designed to gather information on:

- Popular understandings of data and technology in India
- Data harm and benefits
- Consent, privacy, and stewardship in the schooling system
- Data governance in education - challenges, and potential solutions

See next page for further details

Consent, stewardship, and privacy in a school system

1. What is a child's experience of data privacy in edtech for schools? What are the specific challenges of ensuring their privacy particularly because they are not the direct purchasers of the products and services they use? How does this differ from data security for the population at large?

2. Who are the data stewards of edtech in schools? What are the advantages and complications of this system?
   Prompts:
   - How does informed consent work in these settings? Whose consent is sought? Whose consent is missing?
   - What are the specific challenges of securing informed consent from students?
   - Some stakeholders of the education system are disenfranchised. They and/or their loved ones may have faced discrimination by the state and society, for generations. How does this affect their trust in the system? How do they perceive "stewardship" and "consent"? Do these perceptions have any bearing on their use of edtech?

Our questions framed to understand each element of data governance from a multistakeholder lens owing to the interdependence between students and their stewards.

11. Ask each expert to fill in the following prompt and unpack their responses together.

    "---------- [challenge/strength] is the biggest challenge/strength of data governance today.
    If this challenge/strength is/is not mitigated/leveraged ---------- [stakeholder] could use edtech to ---------- [potential value]."

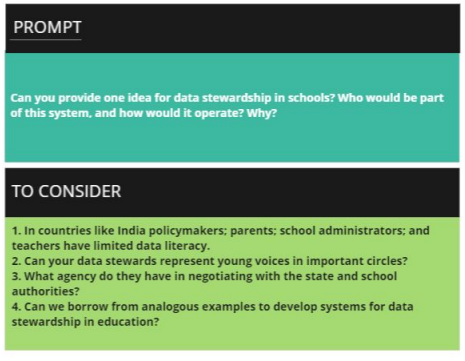
The experts were given a future-facing prompt at the end of our conversation to talk about the challenges and strengths of data governance in education.

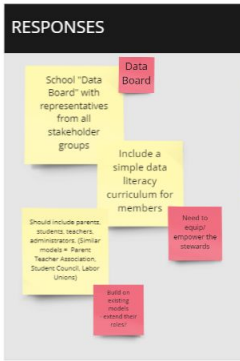
OUR RESEARCH PROCESS

Workshops at MozFest

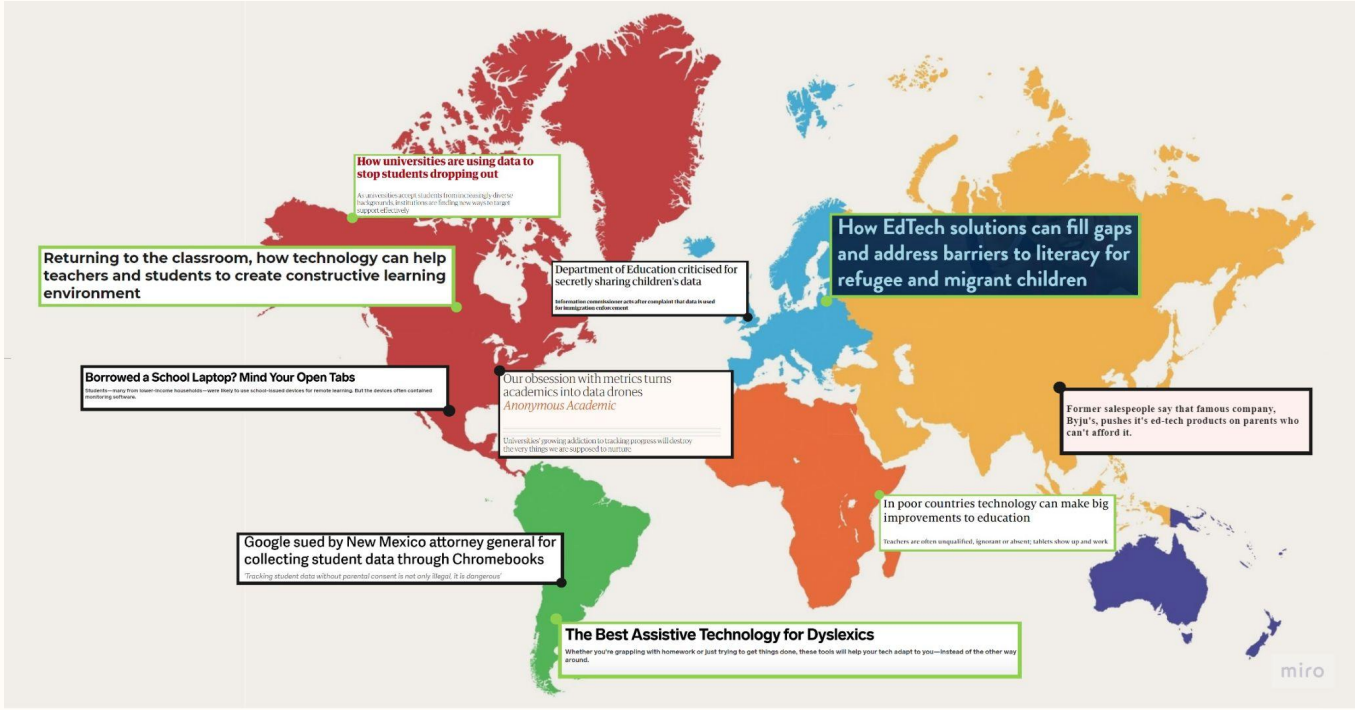
The preliminary insights from our interviews were translated into workshop- activities for a global audience at MozFest 2022.

In the first workshop we used storytelling to discuss different aspects of data governance like consent, stewardship, and interoperability to name a few. You can use this kit to conduct a similar conversation with different stakeholders in your context.





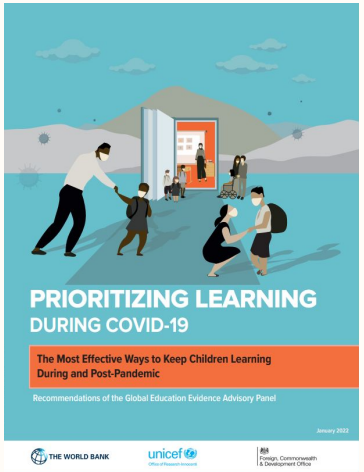
In the second workshop we asked young people to draft headlines from the future to unpack their hopes and fears about data governance. You can conduct the same activity with students in your context using this kit.



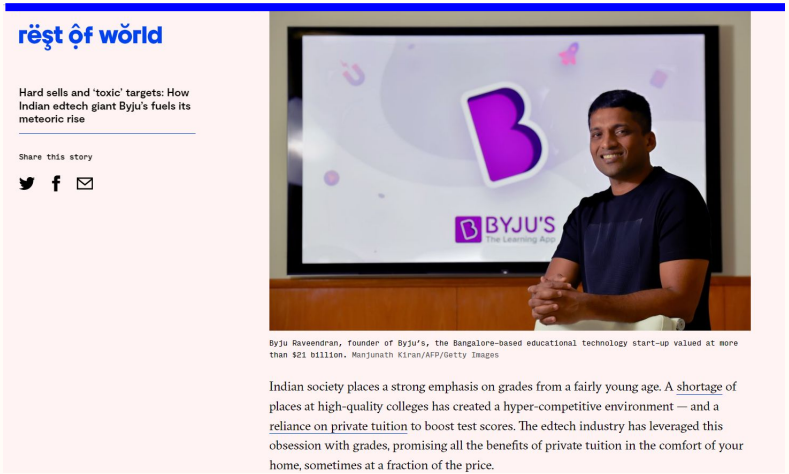
OUR RESEARCH PROCESS

Secondary research

We conducted secondary research to further substantiate our interviews and workshops.



Reports



Web articles

Podcasts

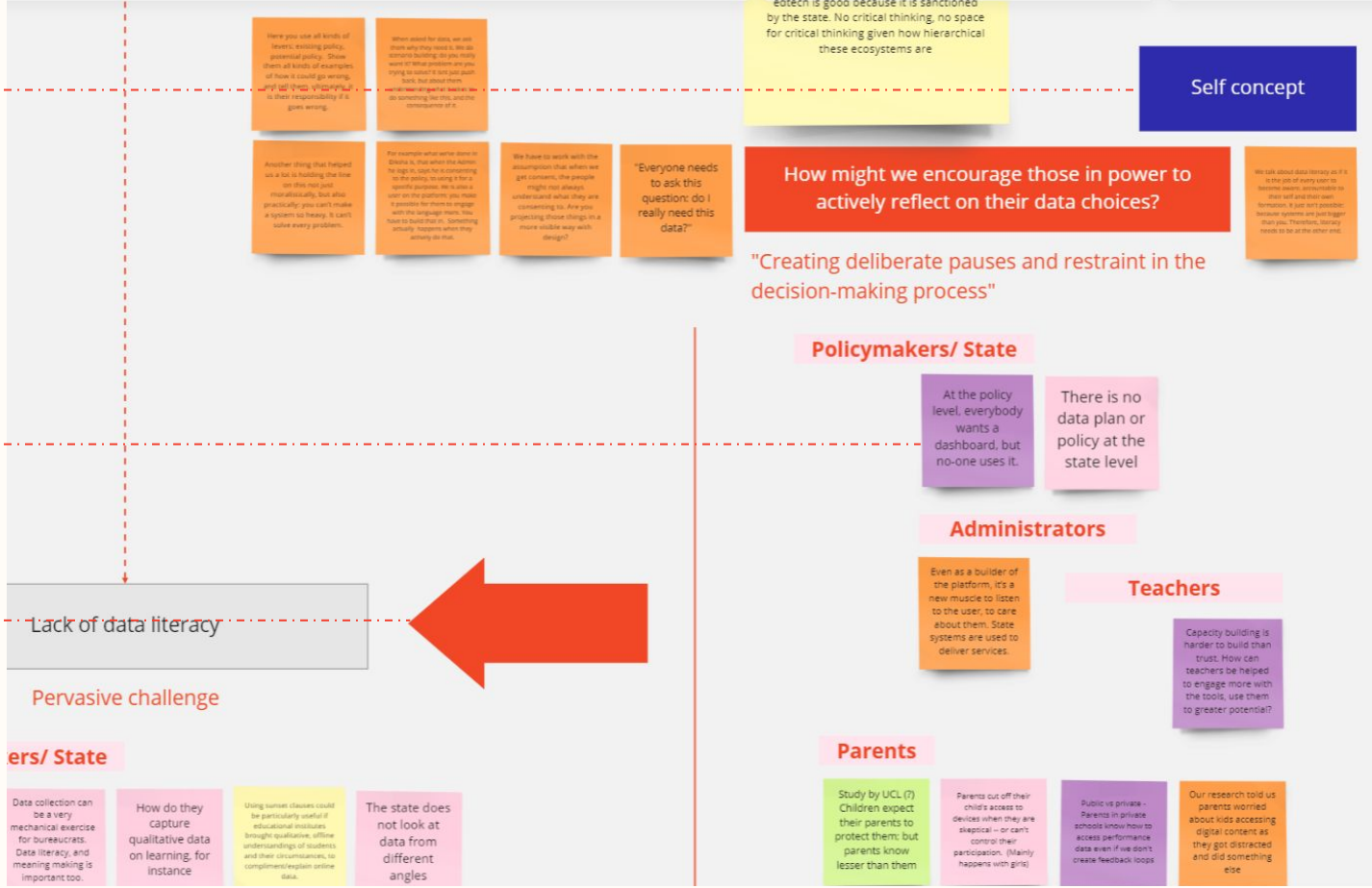
Tags and reflections to build our analysis

OUR RESEARCH PROCESS

Synthesis

Colour-coded responses from the interviews and workshops

Finding connections between topics to build a narrative arch



5.

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Rhea Handa, Project Manager, Edtech, Central Square Foundation
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