School Education and Literacy Department, Govt. of Jharkhand
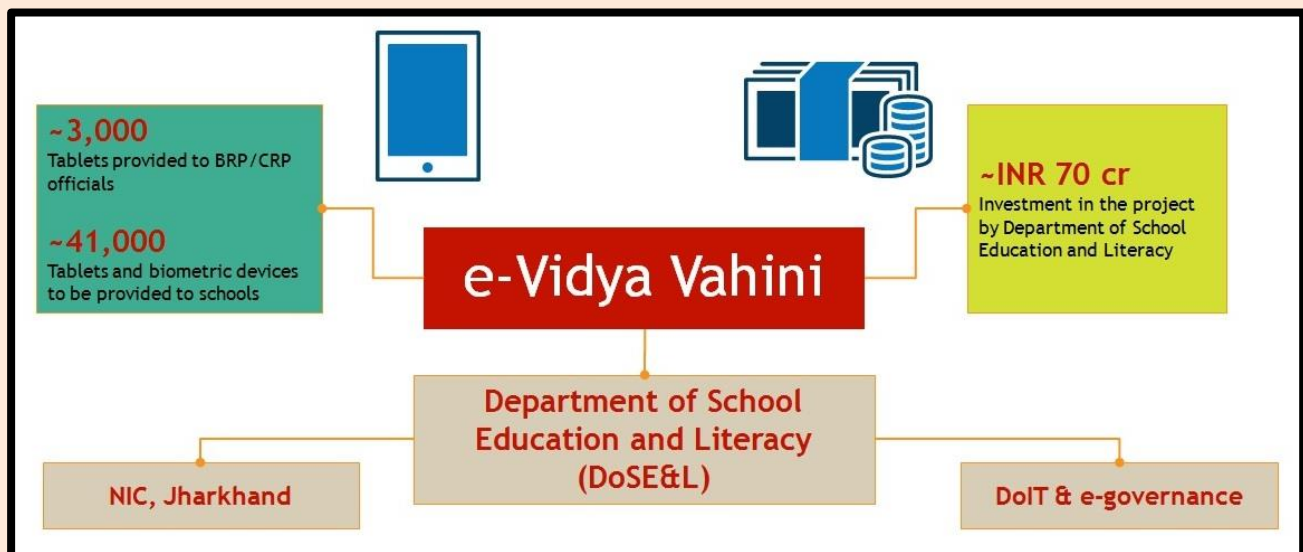
Jharkhand Education Project Council

Integrated MIS Platform: e-Vidya Vahini

Real time MIS for Schools of Jharkhand

Integrated MIS Platform: e-Vidya Vahini

Jharkhand has been instrumental in developing a comprehensive integrated education MIS platform called e-Vidya Vahini, which caters to multiple aspects of information gathering, processing, validation in the Department and facilitates data backed decision making at state, district, block and school level. E-Vidya Vahini was envisioned as an integrated platform acting as a single source of truth for all data requirements which in turn could accelerate effective decision making. There was limited progress in development and roll out of the platform till August, 2018 when the Department had only procured 41,000 tablets and biometric devices with no specific distribution strategy for the hardware. There was no long term view on operation and maintenance of the hardware in the field as well. Additionally, Jharkhand lacked updated databases of students and teachers which form the backbone of any such platform. Both the teacher and student databases were from 2016-17 and outdated for any effective use for policy decisions.

In order to fast track the development of e-Vidya Vahini, Department worked on a comprehensive framework to design every single aspect of MIS platform as provided in the figure below.
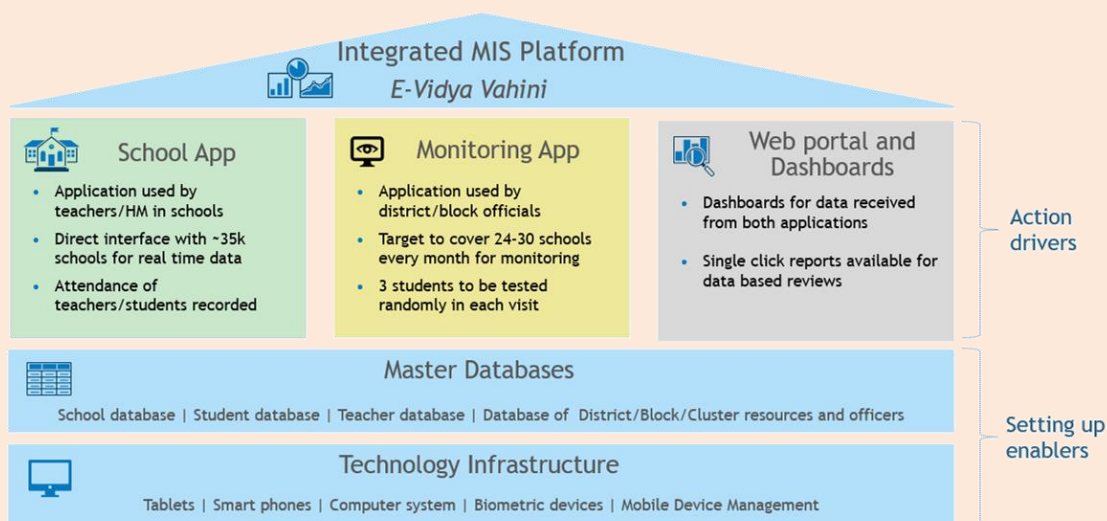

Figure 1

The enablers for e-Vidya Vahini were identified as the technology infrastructure which were the tablets (and smart phones in long term) and biometric devices and the master databases of schools, students, teachers and all the officials of the Department.

Technology Infrastructure: In September, 2018 a detailed plan was prepared along with an SOP to distribute 41,000 tablets and biometric devices along with biometric registration of ~1.5 lakh teachers in all the government schools. The work was started in a campaign mode with a ~50 member strong PMU set up in parallel from October, 2018 with teams at state and district level

to facilitate this large scale exercise. Targets were provided to districts and reviews were held with SPD on a weekly basis. As a result of these initiatives, we have a strong technology infrastructure in the field today with ~88% of the schools having a functional tablet and a biometric device which is being used on a daily basis for multiple activities. Taking a long term view on sustaining the hardware in the field, O&M camps were held across all 24 districts to repair/maintain the devices during the month of November, 2018. Also, warranty tenures were extended and additionally procured for ensuring a 2-3 year sustainability of the infrastructure in the field. Usage of personal smart phones has also been encouraged for all stakeholders to maintain the continuity in the flow of information from field to e-Vidya Vahini.

__Master Databases__: The development of e-Vidya Vahini struggled due to lack of updated teacher and student databases. In order to address this, a web portal was developed with base of 2016-17 data of students and teachers where schools could update the profile of students for academic year 2017-18 and 2018-19 simultaneously. Detailed training sessions were conducted at state and district level. 31 district fellows were deployed as part of the PMU team to concentrate on this herculean task of updating the profile of ~77 lakh students and ~1.5 lakh teachers on e-Vidya Vahini. Targets were provided to the districts and a weekly evaluation was conducted of the performance of districts. Field visits were conducted by SPD and MIS officials to ensure timely completion of targets. Progress was tracked at block level and almost on a daily basis and show causes were issued to blocks showing zero progress in any time period. This was done to ensure continuous progress in the exercise. As a result of all of this effort, student profiles have been ~87% completed for 2017-18 (~97% completion for government schools) and ~70% completed for 2018-19 (with ~82% completion for government schools). This is an effective data which provides correct details of students in terms of their grades, receipt of free uniform, school kits, textbooks etc. which in turn helps us correctly identify the enrolment of the school and dropout rates. Similarly, teacher data has been correctly updated for ~92% of government schools which facilitates correct identification of surpluses and vacancies in the system.

In addition to these enablers, the key features of e-Vidya Vahini platform are the mobile application for teachers (called the school app) to facilitate reporting directly from school and a monitoring ecosystem driven by Block Resource Persons and Cluster Resource Persons (BRP/CRPs) (and incorporating all key officials at block and districts) and run through the monitoring application. Both of these feed to the analytical dashboards which drive critical policy decisions. (these are the action drivers in the framework above)

__School application__: The biggest impact of biometrically registering teachers of ~88% schools have been on their attendance in the schools. As reported from the field through multiple anecdotes as well as data observed on e-Vidya Vahini, there has been a significant improvement in the accountability of teachers within the school premises. ~60% teachers have marked their attendance regularly on monthly basis on the biometric devices. Bad network areas have been provided with an option to mark attendance in an offline mode to ensure smooth operations. An elaborate ecosystem of support has been created for the teachers in form of a call center (with a toll free number) and direct access to state MIS coordinator, NIC and UID development teams to

facilitate attendance of teachers regularly. An example of the teacher attendance dashboard is provided in Figure 2 and Figure 3. Further, school application has multiple features to capture students' attendance, learning levels of all students in the school, reporting for mid-day meal scheme, platform for teachers to send their best practices, feedback etc. An example of district wise student attendance data received from e-VV is provided in Figure 4.

Attendance Report

Attendance Report (Previous Report)

#	School Name	School Code	Attendance Marking Date	Attendance by Teacher	Attendance Mode	Action
1	UPG RAJKIYAKRIT M S DEYULTAND	20130100101	02-November-2018	Total: 3 Present: 2	online	View
2	RAJKIYAKRIT P S BUNDIYATAND	20130100102	03-November-2018	Total: 1 Present: 1	online	View
3	RAJKIYAKRIT M S KUMIRDOBA	20130100301	16-November-2018	Total: 3 Present: 2	online	View
4	RAJKIYAKRIT P S GOPINATHDIH	20130100302	06-November-2018	Total: 1 Present: 1	online	View
5	RAJKIYAKRIT P S SIGDAHIR	20130100303	06-November-2018	Total: 1 Present: 1	online	View
6	RAJKIYAKRIT P S CHAMUDIH	20130100307	19-November-2018	Total: 2 Present: 2	online	View

Figure 2

Attendance Report

Go Back

Attendance List
(UPG RAJKIYAKRIT M S DEYULTAND)

#	Teacher Name	Mobile No.	Attendance Status
1	BIPLAV KUMAR SINGH	9525148493	Absent
2	MANOHAR SINGH CHOUDHARY	9608891024	Present
3	SWAPAN KUMAR GORAIN	9708674089	Present

Figure 3
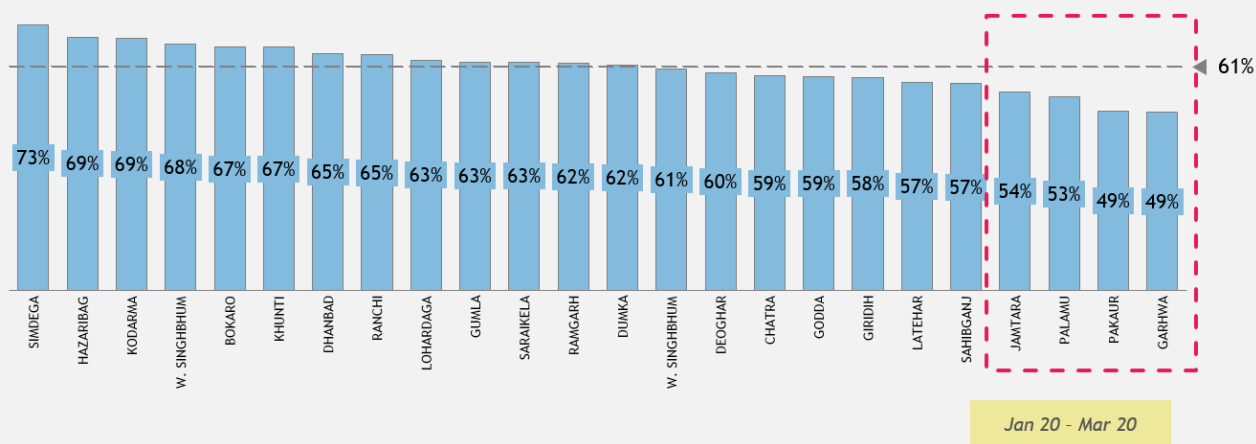
Figure 4

Monitoring application: On similar lines, a monitoring application has been built for the BRP/CRPs and officials at block and district levels (BEEOs, BPOs, DEOs, DSEs, ADPOs). This has been built as a tool to validate some of the reporting from the schools such as teachers' and students' attendance and their learning levels etc. Apart from that it captures multiple critical attributes such as infrastructure and facilities in school, impact of schemes including Gyan Setu, MDM etc. An example of infrastructure data received from e-Vidya Vahini is provided in Figure 5 and Figure 6. This has been implemented extensively among the ~3000 BRP/CRPs through multiple trainings starting from how to use an app in a tablet and ranging to best practices while monitoring a school. As a result of this extensive exercise, Jharkhand has ~99% of all BRP/CRPs active on ground every month visiting ~30,000 schools with an average ~21 schools visited by every BRP/CRP every month. This results in a comprehensive coverage month on month and thus provides effective data for critical policy decisions. ~2L students are tested for their learning levels by these BRP/CRPs every month which creates a unique opportunity to track improvement in learning levels on a monthly basis. The learning data captured by BRP/CRPs has been one of the biggest impact of this exercise. Adequate measures have been taken to ensure accuracy of data through geo-fencing of school coordinates to ensure BRP/CRPs are in school while reporting. All of this has resulted in a very strong monitoring ecosystem which in turn has changed the functioning of schools in Jharkhand

Dashboards: The data from both the applications are available in form of simple usable dashboards and reports which help in further analysis. This data has been regularly used for creating district scorecards and for multiple policy decisions including strengthening of schools' infrastructure, improving learning outcomes, focus on English language, consolidation and integration of sub-scale schools etc. Going ahead, it is being planned to use this data for

rationalization of teachers through an easy to use module within e-Vidya Vahini. This will accelerate the exercise and make the process transparent and comprehensive. Reviews are now held on the basis of data exclusively from e-Vidya Vahini. This includes reviews at DC level in a district and CS level in the state.
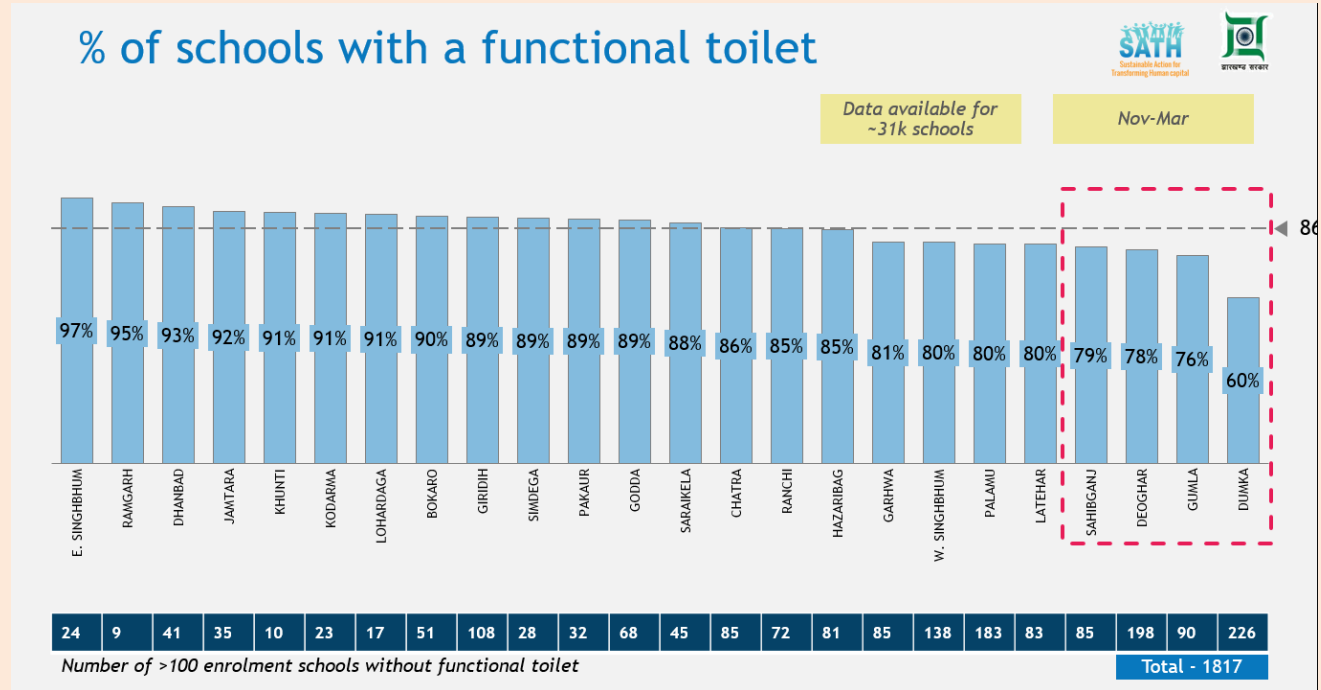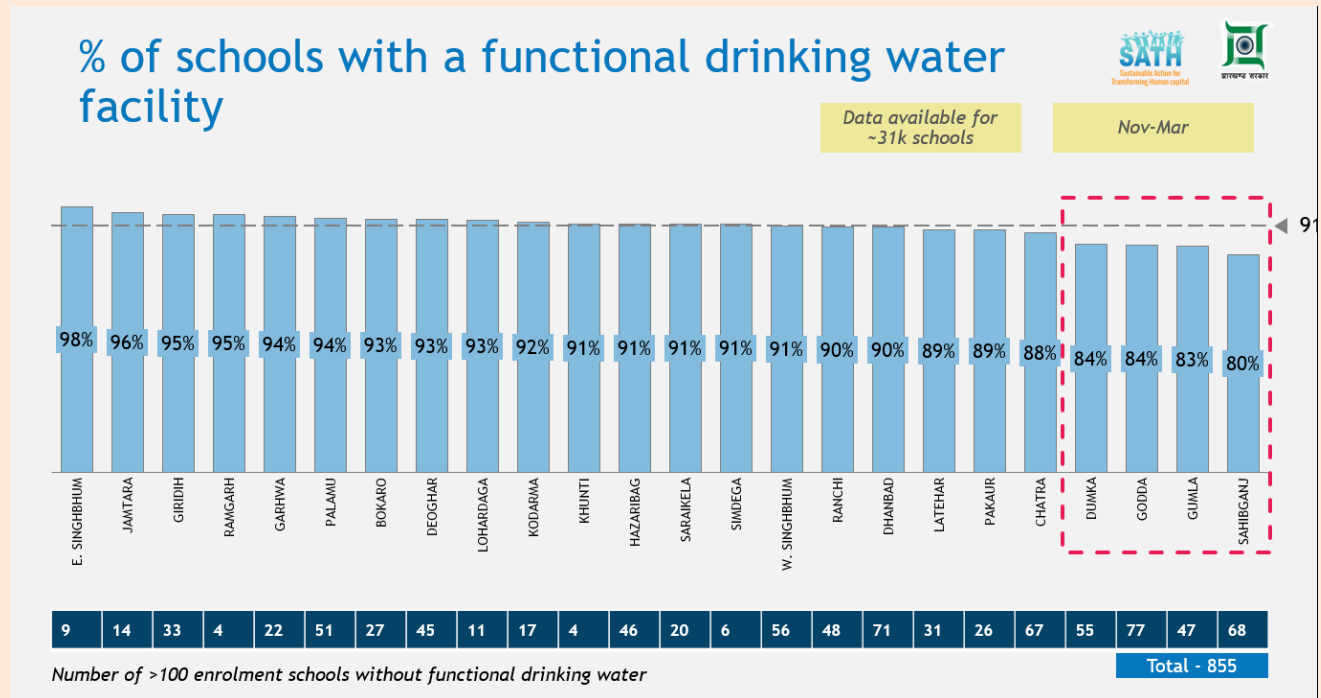

Figure 5

Figure 6

Going ahead, an external vendor has been on-boarded who has been given the responsibility to refine existing modules, create a set of additional modules and maintain the system for a period of 5 years. The plan is to develop a platform for teachers to apply their leaves, all their grievances directly on this application which can be directed to concerned authorities and addressed within a pre-defined time frame. Further, the idea is to work on the vision of making e-Vidya Vahini a single source of truth for all data requirements in the Department which in turn can facilitate data backed decision making.