

Case Study

Padhe Dantewada Likhe Dantewada

A technology based initiative to measure, track and monitor the learning and healthcare needs of students of the district.

**District Administration, Dantewada
Government of Chhattisgarh**

URL- <https://www.padhedantewada.com>

TABLE OF CONTENTS

	Contents	No.
I.	Executive Summary	3
1.	Introduction	4
2.	Overview of the Champion and the team	5
3.	Situation in Champion's State/District	5-6
	3.1. Problems Identified	
	3.2. Strategy Adopted	
	3.2.1. Implementation model	
	3.2.2. Communication and dissemination strategy and approach used	
4.	Modalities of the New System (Solution)	6-8
	4.1. Technology Platform Used	
	4.1.1. Description	
	4.1.2. Interoperability	
	4.1.3. Security Concerns	
	4.1.4. Issue with the technology used	
	4.1.5. Service Level Agreements (SLAs)	
	4.2. Citizen Centricity	
	4.2.1. Impact on effort, time and cost incurred by user	
	4.2.2. Grievance Mechanism	
	4.2.3. Audit Trails	
	4.2.4. Interactive platform for service delivery	
	4.3. User Convenience	
	4.3.1. Service delivery channels	
	4.3.2. Completeness of information provided to the users	
	4.3.3. Accessibility	
	4.3.4. Distance Travelled to Access Points	
	4.3.5. Facility for online/offline download and online submission of forms	
	4.3.6. Status Tracking	
	4.4. Efficiency Enhancement	
5.	Impact on the Stakeholders/Beneficiaries	8-9
	5.1. To organisation/Government	
	5.2. To citizens	
6.	Teaching Notes	10-12
7.	Abbreviations and Acronyms	13

I. Executive Summary

Dantewada is the worst Left Wing Extremism (LWE) affected district in Chhattisgarh. It is prone to sickle cell anaemia disease and observed that one of major causes of death of children is less haemoglobin. So it became necessary to monitor and track the health and education of the children in order to keep them healthy and improve their education. Padhe Dantewada Likhe Dantewada (PDL) is an initiative towards improving, measuring, digitally monitoring and tracking important health and educational parameters of the children in the district.

The Padhe Dantewada Mobile Application helps in obtaining accurate data of each child, which can be accessed through the website: www.padhedantewada.com thus making monitoring process easier for officials. This programme tracks the progress of every child based on the the photograph and the performance in baseline and midline tests is displayed on the web portal. In view of this, the administration has become more accountable to people as every common person can view the data and raise their voice in case the data is found forged.

Due to this program, the number of students who were unable to identify letters has considerably reduced from 50.3% to 20.08%. Same has been the case for students who were unable to identify numbers. Percentage of such students has come down to 22.2% from 41.8%. Also this year the results of students of class 10 & 12 have been really good when compared with the results prior to this program. In the academic year 2015-2016, the pass percentage of the overall district was only 63% but after this programme it has increased to 84% in the Academic Year 2016-17.

1. INTRODUCTION

Dantewada District is completely covered by forests. Its natural beauty makes it beautiful while it is dangerous because this place is affected by Maoists activists and is always under threat of violent activities. Padhe Dantewada Likhe Dantewada is being implemented in the Dantewada District of Chhattisgarh. It was in these difficult conditions that the District Administration of Dantewada embarked upon the mission to uplift education and thus designed a tool for monitoring it. This was done by making interventions in the form of various projects, woven together to provide a holistic vision towards changing the educational landscape of the District.

Being a backward district, providing good healthcare facilities was also a big issue. Dantewada district is prone to sickle cell anaemia. It was observed that less haemoglobin count has been one of the major causes of death of children. So it was need of the hour to have a mechanism to track individual child growth so that person centric health interventions could be designed. For improving education scenario in Government schools, it was found that data detailing proficiency level of students and teachers was needed in order to evaluate the potential level of grasping knowledge. Technology would slash time and energy in implementing the right approach to cross barriers in schools across the district. Digitalized tracking of students' performance from class 1 to class 12 has been initiated to improve learning level and health care through Padhe Dantewada Mobile Application and www.padhedantewada.com website. Padhe Dantewada Mobile Application helps in generating accurate data of each child, which can be accessed through the website: www.padhedantewada.com making monitoring process easier for officials from bottom to top level.

2. OVERVIEW OF THE CHAMPION AND THE TEAM

Since April 2016, Shri Saurabh Kumar is serving as Collector of Dantewada, one of the worst Left Wing Extremism (LWE) affected districts in the country. He has been working relentlessly to transform this digitally devoid district into a well-connected, digitally empowered district, with special emphasis on creating livelihood opportunities and improving health, education and nutrition outcomes. He has been awarded the prestigious Prime Minister's Award for Excellence in Public Administration in the year 2017 for creating a cashless-enabled village, Palnar. He has also served as Chief Executive Officer, Chhattisgarh Infotech Promotion Society (CHiPS) and expanded its operations throughout the State for which he was awarded the National e-Governance Gold Award in the year 2014.

Other team members of the project include Shri Gaurav Kumar Singh, CEO Zila Panchayat; Shri Somayya, District Education Officer; Shri Ram Charan Rana, District Mission Coordinator.

3. SITUATION IN CHAMPION'S STATE/ DISTRICT

3.1. Problems Identified:

- Poor learning levels of children: It was observed in most of the children that even though they were in higher classes they were unable to read and write, unable to do basic Mathematics.
- Increasing dropouts: As the students were not able to read and write and were unable to cope up with the studies in higher classes, therefore, net enrolment ratio was very low in classes 9th to 12th.
- Lack of child tracking mechanism: There was no system to track the individual academic growth of the children.
- Lack of child friendly pedagogical practices: Children were not finding education interesting, so they were not showing any interest in studies.

3.2. Strategy Adopted:

3.2.1. Implementation Method

Digitized tracking of students performance from Class 1 to Class 12 has been initiated to improve learning level and health care through Padhe Dantewada Mobile Application and www.padhedantewada.com website.

Citizens can now track the progress of all schools in the District. This has increased accountability of teachers. The progress of every student in the District is available on Padhe Dantewada website along with their photograph. These operations can also be done through an android app with 2G connectivity.

Block-wise WhatsApp groups were created to inform and engage the people in the mission. Information regarding seminars, meetings and new products were sent to teachers through an automated SMS system.

3.2.2. Communication and dissemination strategy and approach used

Special training was conducted for teachers to address the issues of children with low learning levels. Separate time was assigned during school time for this program. Tests were conducted at regular intervals to assess the growth of the children. Low performing schools were provided with special training. Collector and District Administration conducted review meetings at regular intervals.

4. MODALITIES OF THE NEW SYSTEM (SOLUTION)

4.1 Technology Platform used:

4.1.1 Description - The web based application has been developed using Hypertext Preprocessor (PHP) framework with backend database of Microsoft Structured Query Language (MS SQL) server. Android app is provided for use on their smart phone. Aadhaar authentication is used for taking consent from beneficiaries.

4.1.2 Interoperability - Databases are interconnected and the responsible authorities can access them.

4.1.3 Security concerns - Manual Testing has been done using AppScan (a web security testing & monitoring tool) and the application is free from top 10 Open Web Application Security Project (OWASP) risks.

4.1.4 Service level Agreements (SLAs) - 99% server uptime is maintained.

4.2 Citizen Centricity

4.2.1 Impact on effort, time and cost incurred by user - Mobile application is only helping in making the process of service delivery in education and health sectors more effective. Low learning level is a universal problem in our country, especially in rural and tribal areas. This application has been made to work in one of the most remote areas of India, devoid of internet connectivity and mobile network. As a result of the project, all the data is now available on www.padhedantewada.com and anyone from anywhere can identify a specific school and track progress of their child/children. Now teachers are more accountable to parents and society.

4.2.2 Feedback/grievance redressal mechanism - Web site and App both have provisions to give feedback and institutional arrangement has been made to address the grievances and review the feedback.

4.2.3 Audit Trails - Logs are maintained for audit trail.

4.2.4 Interactive platform for service delivery - Web application and Android app are the only communication media to interact with the Govt. in this project.

4.3 User convenience

4.3.1 Service delivery channels

- All the data is in public domain and is accessible to anyone on Padhe Dantewada website along with photograph of each student. Citizens can now track the progress of all schools in the District. This has increased accountability of teachers.
- All these operations can also be done through an android app with 2G connectivity.
- Block-wise WhatsApp groups have been created to engage and inform. Information regarding seminars, meetings and new programs are sent to teachers through automated SMS.

4.3.2 Completeness of information provided to the users - All relevant information is available to everyone on Padhe Dantewada Website along with photograph of each student.

4.3.3 Accessibility (Time Window) – It is available 24 X 7.

4.3.4 Distance required for travelling to Access Points – It is practically zero.

4.3.5 Facility for online/offline download and online submission of forms - The system is fully online.

4.3.6 Status tracking - The tracking of status is available.

4.4 Efficiency Enhancement

4.4.1 Volume of transactions processed - 38,299 transactions have been processed as on 19.11.2017 which are the number of students enrolled.

4.4.2 Coping with transaction volume growth - System can cope up with any expected growth in the transaction volume.

4.4.3 Time taken to process transactions - Data Collection & Upgradation is a constant process which takes a few minutes.

4.4.4 Accuracy of output – There has not been even a single complaint so far on lack of accuracy. The data is in highly secured format. This application has made tracking of education and health of children of the district simple.

4.4.5 Number of delays in service delivery - No delays as on date.

4.5 Innovation

More than 38,299 students of Government schools are registered with the Android App. A Web-Console & Android Application has been developed by Raipur based Software Company 'BlueBanyan Technologies'. More than 4000 Government school teachers have evaluated writing, learning and comprehending skills of each student through this application. According to initial statistics fed by teachers into the app, the scenario was dull as around 1,000 tribal students from Class VI to Class VIII could not even recognize words of Hindi or comprehend texts. Subsequently, Government school teachers were trained for 10 days with innovative learning methods to be used as teaching aids for imparting education to students.

The following are the things that have been done:

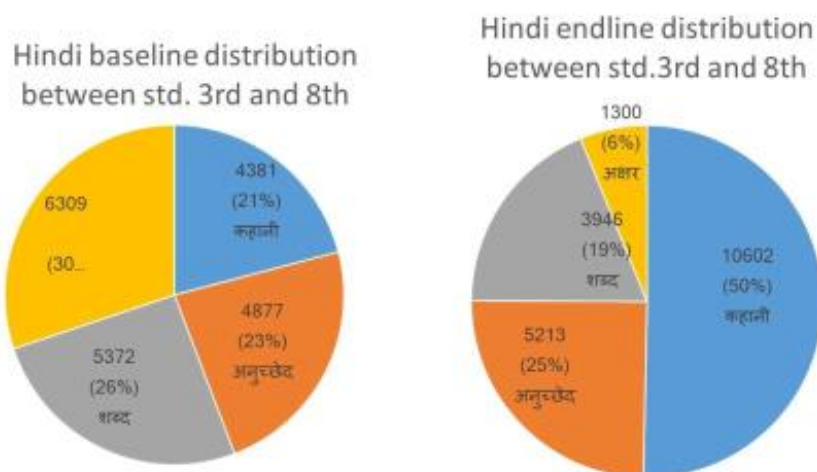
- Optimum Utilization of Technology for both Data Collection & Monitoring.
- Health Monitoring & Maintaining Blood Report of Students in cloud is more accessible.

4.6. Capacity Building and Organizational Sustainability:

- Special training was conducted for teachers to address the issues of children with low learning levels.
- Separate time was assigned during school time for this program.
- Tests were conducted at regular intervals to assess the growth of children. Low performing schools were provided with special training. Collector and District Administration conducted review meetings at regular intervals.
- Teachers were provided with details of up-gradation in android application.

5. IMPACT ON THE STAKEHOLDERS/BENEFICIARIES

Over 38,299 students from class 3 to 8 are the primary beneficiaries of this intervention, with teachers and Government functionaries as the secondary beneficiaries. Students have reached a level where they can now speak correctly & write with almost 70% accuracy.



- According to a base line exam carried out at the beginning of the program in 2016, 4,385 students (18%) of 23,903 students between class 3 and 8 were able to read Hindi fluently. Similarly, only 2,731 (11 %) students were able to perform simple division.
- This was extremely poor considering the standards set by National Council for Education Research and Training (NCERT) which mandates that class 3rd student should be able to read Hindi fluently and should be able to do simple division. By the end of 2017, the growth is approximately 50% and a total 36000 students are enrolled under this program.
- This application is also being used to track the health of students and also maintaining a record of the blood report, haemoglobin count and other important data for digitalized tracking for health monitoring.
- Also this year, the results of students of class 10th & 12th have been good as compared prior to the introduction of the program in the academic year 2015-2016. The pass percentage of the overall District earlier was only 63% but after this program, it has increased to 84% in the Academic Year 2016-17.

5.1 To Organization

- A great help of the system has been to track the educational improvement through innovative use of technology. In general, this application has made the work of data collection and tracking records easy. Image below indicates the data collection process.



5.2 To citizen

- After implementing this program, the number of students who can read Hindi fluently has grown to 10,610 (44%). Similarly, number of students who can perform division has grown to 8,768 (37%).
- As a result of this program, the number of students who were unable to identify letters has considerably reduced from 50.3% to 20.08%. Same has been the case for students who were unable to identify numbers. Percentage of such students has decreased to 22.2% from 41.8%.

Teaching Notes

Padhe Dantewada Likhe Dantewada

A technology based initiative to measure, track and monitor the learning and healthcare needs of students of the district.

1. OVERVIEW

Dantewada is the worst affected Maoist district in Chhattisgarh. It is prone to sickle cell anaemia disease and observed that one of major causes of death of children is less haemoglobin. So it became necessary to monitor and track the health and education of the children in order to keep them healthy and improve their education. Padhe Dantewada Likhe Dantewada is an initiative towards improving, measuring, digitally monitoring and tracking important health and educational parameters of the children in the district.

The Padhe Dantewada Mobile Application helps in obtaining accurate data of each child, which can be accessed through the website www.padhedantewada.com thus making monitoring process easier for officials. This program tracks the progress of every child based on the the photograph and the performance in baseline and midline tests is displayed on the web portal. In view of this, the administration has become more accountable to people as every common person can view the data and raise their voice in case the data is found forged.

2. TEACHING OBJECTIVES

➤ Learning Objectives

- As-is situation analysis and identification of pain points in the existing delivery process.
- Importance of innovation and technology to aid monitoring, tracking and keeping the stakeholders informed.

➤ Challenges/Issues Faced

- Poor learning levels of children: It was observed in most of the children that even though they are in higher classes they are unable to read and write and also unable to do basic Mathematics.
- Increasing dropouts: As the students are unable to read and write and are not able to cope up with the studies in higher classes so net enrolment ratio is very low in classes 9th to 12th.
- Lack of child tracking mechanism: There was no system to track the individual child growth.
- Lack of child friendly pedagogical practices: Children were not finding education interesting, so they were not showing any interest in studies.

➤ Ways to Improve the Situation

Major Features-

- Optimum Utilization of Technology for Data Collection and Monitoring.
- Health Monitoring and Maintaining Blood Report of Students in cloud to make it more accessible.

Strategy Adopted-

- Digitalized tracking of students' performance from Class 1 to Class 12 to improve learning level and health growth
- Tracking the progress of all schools in the District
- Also tracking the progress of every student in the District
- Innovation in technology so that mobile app is accessible in areas with low connectivity.
- Block-wise WhatsApp groups created to engage and inform.
- Information regarding seminars, meetings and new programs sent to teachers through automated SMS.

3. SUGGESTED QUESTIONS & ANALYSIS

a) **What are the data points that must be taken into consideration for the launch of initiatives like Loan Charge Creation Project?**

- Previous years' records of the students and insights drawn from them
- Infrastructural and technological capabilities
- List of beneficiaries and stakeholders
- Training of stakeholders to understand how they will be leveraging the benefits from the initiative

b) **How this project has helped in increasing efficiency and effectiveness in the system?**

Mobile application is only helping in making the process of service delivery in education and health sectors more effective. Low learning level is a universal problem in our country, especially in rural and tribal areas. This application has been made to work in one of the most remote areas of India, devoid of internet connectivity and mobile network. As a result of the project, all the data is now available on www.padhantewada.com and anyone from anywhere can identify a specific school and track progress of their child/children. Now teachers are more accountable to parents and society.

Due to this program, the number of students who were unable to identify letters has considerably reduced from 50.3% to 20.08%. Same has been the case for students who were unable to identify numbers. Percentage of such students has come down to 22.2% from 41.8%. Also this year the results of students of class 10 & 12 have been really good when compared with the results prior to

this program. In the academic year 2015-2016, the pass percentage of the overall district was only 63% but after this program it has increased to 84% in the Academic Year 2016-17.

c) What are the distinctive features or accomplishments of the project?

- According to a base line exam carried out at the beginning of the program in 2016, 4,385 students (18%) of 23,903 students between class 3 and 8 were able to read Hindi fluently. Similarly, only 2,731 (11 %) students were able to perform simple division.
- This was extremely poor considering the standards set by National Council for Education Research and Training (NCERT) which mandates that class 3rd student should be able to read Hindi fluently and should be able to do simple division. By the end of 2017, the growth is approximately 50% and a total 36000 students are enrolled under this program.
- This application is also being used to track the health of students and also maintaining a record of the blood report, haemoglobin count and other important data for digitalized tracking for health monitoring.
- Also this year, the results of students of class 10th & 12th have been good as compared prior to the introduction of the program in the academic year 2015-2016. The pass percentage of the overall District earlier was only 63% but after this program, it has increased to 84% in the Academic Year 2016-17.

4. CLASSROOM MANAGEMENT

➤ **Group Discussion**

Divide the participants in groups of 4 -5 and discuss the case on following aspects. Each group should take one aspect:

1. Discuss Change management and Communication as some of the key factors for project success.
2. Challenges, issues and risks if the project is to be rolled across other States.
3. What is next step for the project?

Please have an open brainstorming session regarding how this project can be evolved and replicated in other States. Each group should present their findings in a short 5-10 minutes presentation afterwards.

➤ **Summary- Key lessons learnt (15 minutes)**

Each participant shall write down a summary in not more than 500 words highlighting key learning from the case.

Abbreviations and Acronyms

Abbreviation	Explanation
LWE	Left Wing Extremism
PDL D	Padhe Dantewada Likhe Dantewada
PHP	Hypertext Pre-processor
MS SQL	Microsoft Structured Query Language
OWASP	Open Web Application Security Project
NCERT	National Council Of Educational Research And Training
