Mid-Year Report 2019-20

Teaching with technology - Nalanda Project

Student learning development

Date | Nashik

lfe | LEADERSHIP FOR EQUITY

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List of abbreviations

Acronym	Expansion
SLD	Student Learning Development
SLO	Student Learning Outcomes
CPD	Continuous Professional Development
CH	Cluster Head
CRG	Cluster Resource Group
BEO	Block Education Officer
DEO	District Education Officer
CEO	Chief Executive Officer
ZP	Zilla Parishad
OD	Organisational Development
TPD	Teacher Professional Development
SMC	School Management Committee
GoM	Government of Maharashtra
IT	Information Technology
LFE	Leadership For Equity
MFE	Motivation For Excellence
KSM	Knowledge Skill Mindsets
DIET	District Institute of Education and Training
NGO	Non-Government Organisation
TWT	Teaching with Technology

Executive Summary

The Nalanda project in Nashik kickstarted in August 2019 with an aim to leverage technology to improve student learning outcomes in mathematics. As a path to achieve this we are working to empower the teachers from government schools to integrate technology effectively in their classrooms.

We are working with 20 teachers, 725 students across 10 Semi English medium schools from 4 blocks of Nashik district. The District Education Officer of Nashik, as well as the Block Education Officers, have supported us immensely to successfully work with our selected teachers and students over the last 4 months. The major highlight of the last 4 months has been the structures and procedures our teachers have imbibed and exemplified during their tab classes.

In this report we are outlining the journey of our project so far with a focus on key processes followed that enabled us for its successful implementation.

Introduction:

The Teaching with Technology team at LFE primarily works on empowering a select few ZP teachers to use technology in their classrooms. The targeted improvements for this project are
- KSM of teachers with respect to blended learning in class.
- Increasing the math SLO
- Creating a cadre of Tantra Saarthis (Tech Savvy teachers) to help scale the project.

This approach taken by the team is in alignment with LFE's organisation aim of improving the effectiveness of the government school systems to deliver quality education at scale. The goal of TWT's Nalanda Project is to - *Institutionalise (provide resources, funds and use the model) models of using tech in a differentiated and blended way of leading to improve teaching practices and SLO.*

LFE envisions to empower the teachers and students of Zilla Parishad schools by increasing the math outcomes. The programme has integrated the two existing learning tools - New way of teaching and learning i.e Technology and the traditional method of teaching and learning i.e - Notebooks and blackboard. This project uses low-cost offline technology to enhance teacher performance and increase student learning. We allow students to learn and practice math objectives on low-cost tablets and teachers to create high rigour content and analyse data on laptops.

The Nalanda Project equips math classrooms with curricula-aligned, student-friendly content that engages students and enhances their learning. We believe that our students deserve content that is relevant, individualized, and… fun! To this end, we partner with MagoGenie, a high-quality open-source content provider. Beyond the student level, we cater directly to teacher needs by mapping our technological materials to both the Maharashtra State Board and CBSE curriculum. We offer resources for 100% of the concepts covered by state and national curriculum. Further, Nalanda teachers no longer need to spend their valuable time correcting papers; our platforms provide teachers with instantaneous data on student progress. Together, Nalanda's high-quality content, data tracking, and one-to-one student-to-tablet ratio enable seamless differentiation and self-paced learning. Just step into a Nalanda classroom and you will see a group of curious students learning together, each being challenged at the appropriate level and a teacher who is able to give personalized support.
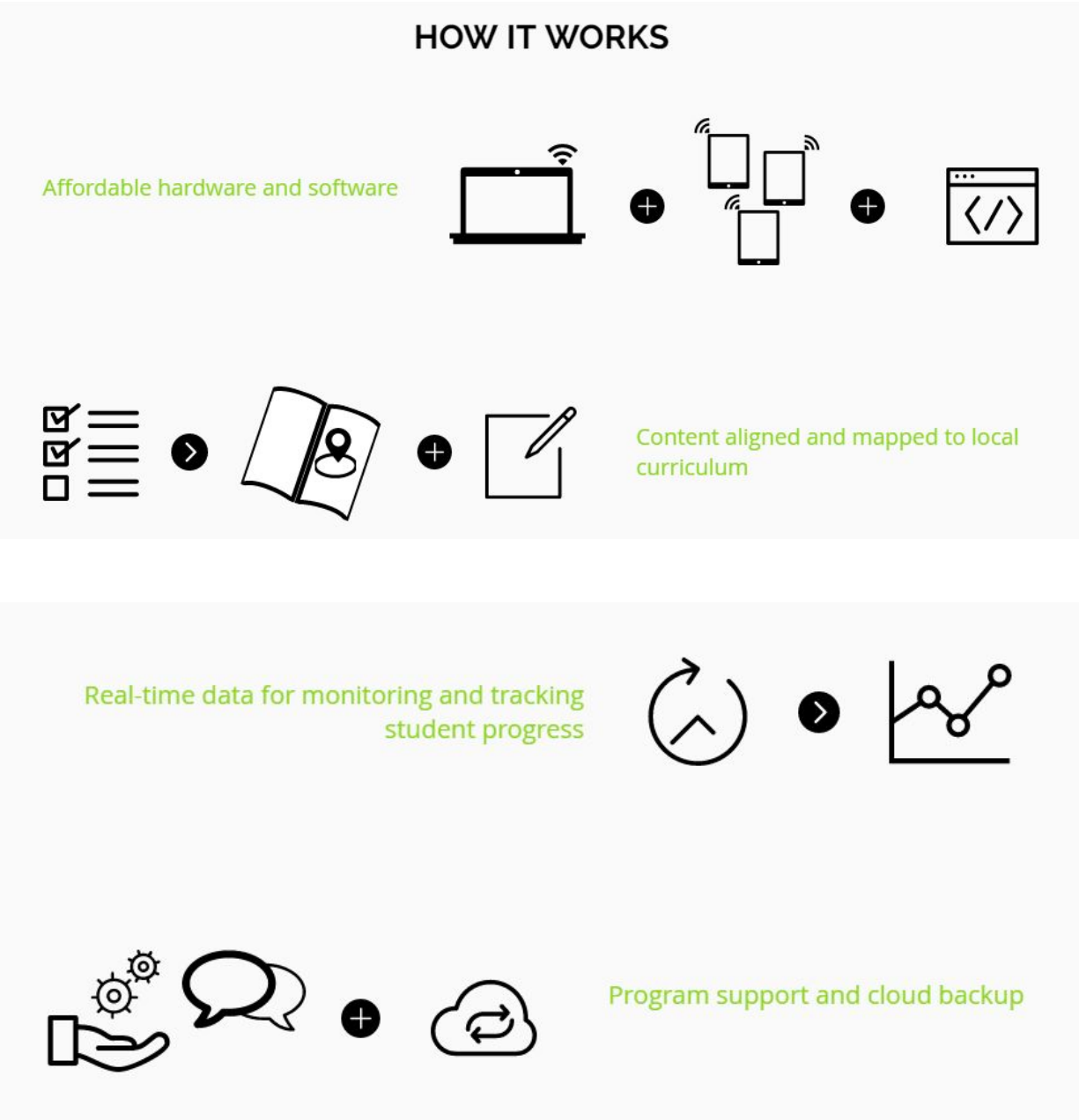
Image1: How it works

Past Six months

Month	July	August	September	October	November	December
Major	Envision	Launch	Implementation	Monitor and	Monitor and	Monitor and

Theme	and design			support	support	support

A brief description of how the various aspects of the team's work aligns with this.

Stage 1: Envision and Design

The team members first step was to select ten schools catering to a few parameters (Refer to Image 2 - *Rubric for School Selection*) The idea of selecting the schools on the basis of having few parameters was to maintain uniformity and have complete ease in execution, monitoring and evaluation. Once the schools were selected, the team focused on understanding the technology and modifying the content based on the context and the needs of the students. The team then dived into the core of envisioning and designing the project. The year long progression and the design of implementation were the core focus here.

Category	Criteria	1	2	3	4
Infrastructure	Space for tech	- School has no safe and clean space to store 20+ hardware in one location - No place for charging	- School has a small space to store 15-20 hardware in one space - Convenient place for charging with continous monitoring.	- School has a cabinet to store 20-40 hardwares in one space - Convenient place for charging with little or no monitoring	- School has a space to store more than 50 hardwares in one space - Convenient place for charging with no monitoring.
	Electricity (availability)	- No electricty available in the school or Previous bill is pending	- Electricity available on selective days or hours and no pending electricty bill	- Electricity available during working hours/days and no pending electricity bills	- Working electricity supply in all classrooms, and no pending electricity bills
	Electricity (safety)	- MCB switches not in place - Broken switches or unsafe wiring	- MCB switches not in place - Well maintained wiring and switches only in the office/one classroom	- MCB switches are in place - Well maintained wiring and switches in 2- 4 classrooms	- MCB switches are in place - Well maintained wiring and switches are present in all classrooms
	Connectivity	- School does not have internet/network connectivity available	- School has internet/network connectivity available outside classrooms	- School has internet/network connectvity for only some service providers	- School has a strong functional internet/network connectivity (WiFi/mobile network)
Teacher Learning and teaching level	Teacher Skill	- Teacher is unable to use smart phone - Unable to use a computer	- Teacher is able to use basic features of a smart phone (Manuvering through various apps) - Knows basic features of a computer (turn it on and off, typing, using a CD, using basic apps)	- Teacher is able to download apps and use them - Teacher is able to browse through internet and download information. unable to use microsoft office	- Teacher has the ability to download and create accounts on all the apps. - Teacher is able to browse through the internet, download information and use microsoft office
	Teacher Will	- Teacher has never used technology in class. - Teacher has never differentiated in class. - Makes LP's once a month.	- Teacher has used technology few times (only to show videos) - Teacher differentiates only during revision. - Teacher Makes lesson plans once a week	- Teacher uses technology based on the resources available in school - Teacher differentiates during INM/Difficult topics. - Teacher makes lesson plans 1 - 3 times a week.	- Teacher uses technology to INM. (2- 4 times a month) - Teacher differentiates during GP. (2 - 4 times a week) - Teacher makes lesson plans everyday.
	English	- Instruction and explanantion done only in marathi. - Teacher makes the lesson plan in marathi.	- Instructions in english , explanation in marathi - Teacher makes lesson plans in marathi.	- Instructions in english, explanantion in marathi and english - Teacher makes lesson plans in english and marathi (based on the topic)	- Instruction and explannation done in English. - Teacher makes lesson plans in english
	Student strength	Less than 10 students/class	More than 60 students/class	Between 10-20 students/class Between 40-60 students/class	Between 20-40 students/class
	HM Support	- Does not observe teachers or monitor student learning progress - Does not support teacher in professional development	- Only observes teachers and asks about student learning progress once or twice a month - Does not provide feedback/support to the teacher	- Reviews teacher performance by observing classroom, debriefing the observation and providing feedback once a month - Identifies areas of development and supports/coaches the teacher on them	- Reviews teacher performance by observing classroom, debriefing the observation and providing feedback, also tracks students' learning progress - Identifies areas of development and supports/coaches the teacher on them - Follows a fixed structure and is consistent
	HM Participation	- HM has not initiated any projects in this school - No participation from external stakeholders, parents etc.	- HM has taken part in projects in schools nearby - Limits external participation only to parents and SMC members	- HM has initiated 1 - 2 projects in school - Has participated in activities led by external stakeholders and NGOs	- HM has inititaed 3 - 5 projects in school. - Invites external stakeholders/NGOs regularly
Travel	Distance	40+ Km away from Nashik ZP	30 - 35 Km away from Nashik ZP and easy commute accessible	20-30 Km away from Nashik ZP	Less than 20 Km away from Nashik ZP
	Accessibility	- No public transport available - Diffiicult to access by own vehicle	- Easy accessibility by own vehicle - Not accessible easily by public transport	- Easy accessibility by own vehicle - Only sporadic availability of public transport	- Easy accessibility by public transport or vehicle

Image 2 - Rubric for School Selection

Stage 2: Launch

Post the final list of schools, the team decided to focus on 10 Semi English Zilla Parishad Schools, in Nashik. The idea of running a tech-based project in a Zilla Parishad School needs to be analysed, acknowledged and appreciated by the higher authorities in the system. Hence under the leadership of Hon. ZP Adhyaksha Smt. Sheetal Sangle, Hon. ZP Shikshan Sabhapati Shri. Yatindra Patil, the Chief Executive Officer of Nashik ZP Ms Buveneswari and the Education Officer Dr Vaishali Zankar-Veer, this project was launched for execution.

Stage 3: Implementation

Teacher trainings
Teacher training and support is one of the most important areas of work in our plan. This includes training and proximate support given to teachers in all the 10 schools. Apart from the technical support given by the LFE team, it has also occasionally been given by the Nalanda team. In the past 6 months, following activities were planned and executed.

1. **Large group sessions on pedagogy**

This project's core focus is to get the teachers to be comfortable using technology in the class along with being highly skilled with classroom management. During these trainings we help teachers understand the content and skill of a classroom management technique. The content of pedagogy is shared with them post which each teacher gets time to practice the skill. Once the teachers have a basic idea of these skills they move on to trying it in their classroom.

Considering the intervened grades are from 3 - 6, the following pedagogy techniques have been shared with the teachers, attention grabber, rules, make listening visible and countdown.

Along with this the LFE team trains teachers to teach the content in a structured form. This structure emphasises on *I do, We do, You do*. The structure is breakdown between the content and skills students need to learn in 3 stages.

I DO - The teacher explains the topic along with that shares how the topic needs to be studied/taken an assessment about on the tablet.
*We Do* - The teacher creates peer learning spaces for the students to share, learn and question the topic. - This stage does not require any technology.
You Do - The stage where technology is the focus. Now that the teacher has explained and given students time to practice and read the content, this stage is completely for and by the students. They take an assessment on the topic, analyse their responses and make corrections by themselves.

2. Focus on Blended Learning

As this project aims for personalised learning in class where each child gets a tablet and the child gets to learn according to his or her own pace. This project also aims to maintain the balance between using technology and the notebook in class. The child gets to choose for which mathematical operation the tab will be used and for which one the notebook. This process makes the child more aware of his or her skills and abilities. At the same time this also lets the teacher know which child needs more support.
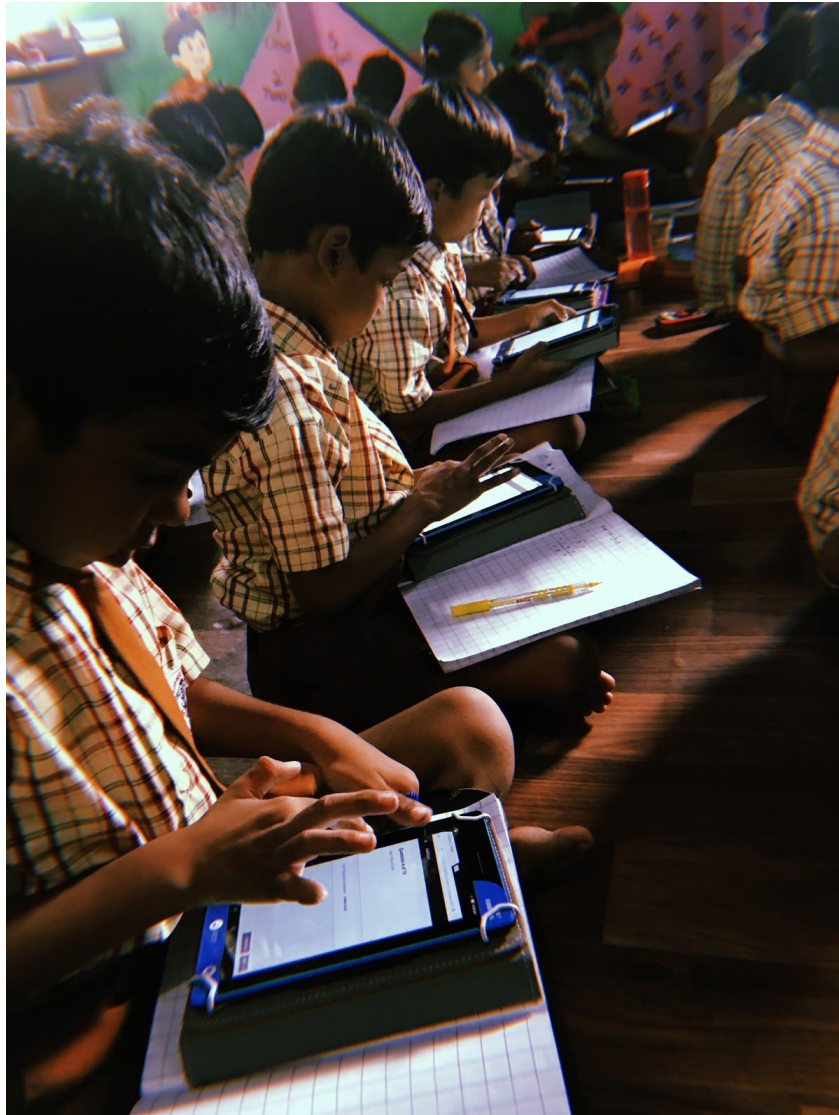
3. Large group sessions on Hardware and software.

Nalanda has been very generous in providing their hardware and software for this project. The project mainly runs on how the teacher is best able to adapt to this technology and use it most effectively. The resources provided to each teacher are 1 Laptop, 40 tablets, 40 earphones and a charging cabinet.

It is a crucial part of this project to know the How, What and Why of each resource. During these large group sessions we train the teachers on 2 things;

- ***Using the technology*** - Teachers and students coming from Zilla Parishad schools might or might not be aware of the nitty-gritties of using technology. Considering the software installed is also not a common platform, the trainings include everything from scratch. It is very important for the teachers to know the what and the how of using a piece of technology. Hence, these trainings sessions give them time to understand the technology and practice on the same. These sessions give the teachers a platform to dawn the teacher hats and use the laptop along with giving them a space to dawn the student hat and use the tablets.

- ***Maintaining the technology*** - Along with using the technology it is very crucial to maintain the technology. Each and every resource needs to be monitored and taken care of at all times. The teachers during these sessions are informed about the how and the why of maintaining each piece of resource. The teachers are also trained to resolve software issues in case of a breakdown.

4. Peer Learning support

As mentioned earlier, each school has 2 teachers who are a part of this project. As this project is technology centric there are bound to be learnings and unlearnings. Through this process of learnings and unlearnings, it is very important for teachers to have constant on field support and motivation. LFE team members visit the school every week, however, having someone on a day to day basis increases learnings and comfort with technology. To leverage the peers in school is why the peer learning support has been introduced. In this the teachers help, learn, teach and observe each others classroom. This becomes a space for the teachers to give contextualised support to each other and learn at the same time.
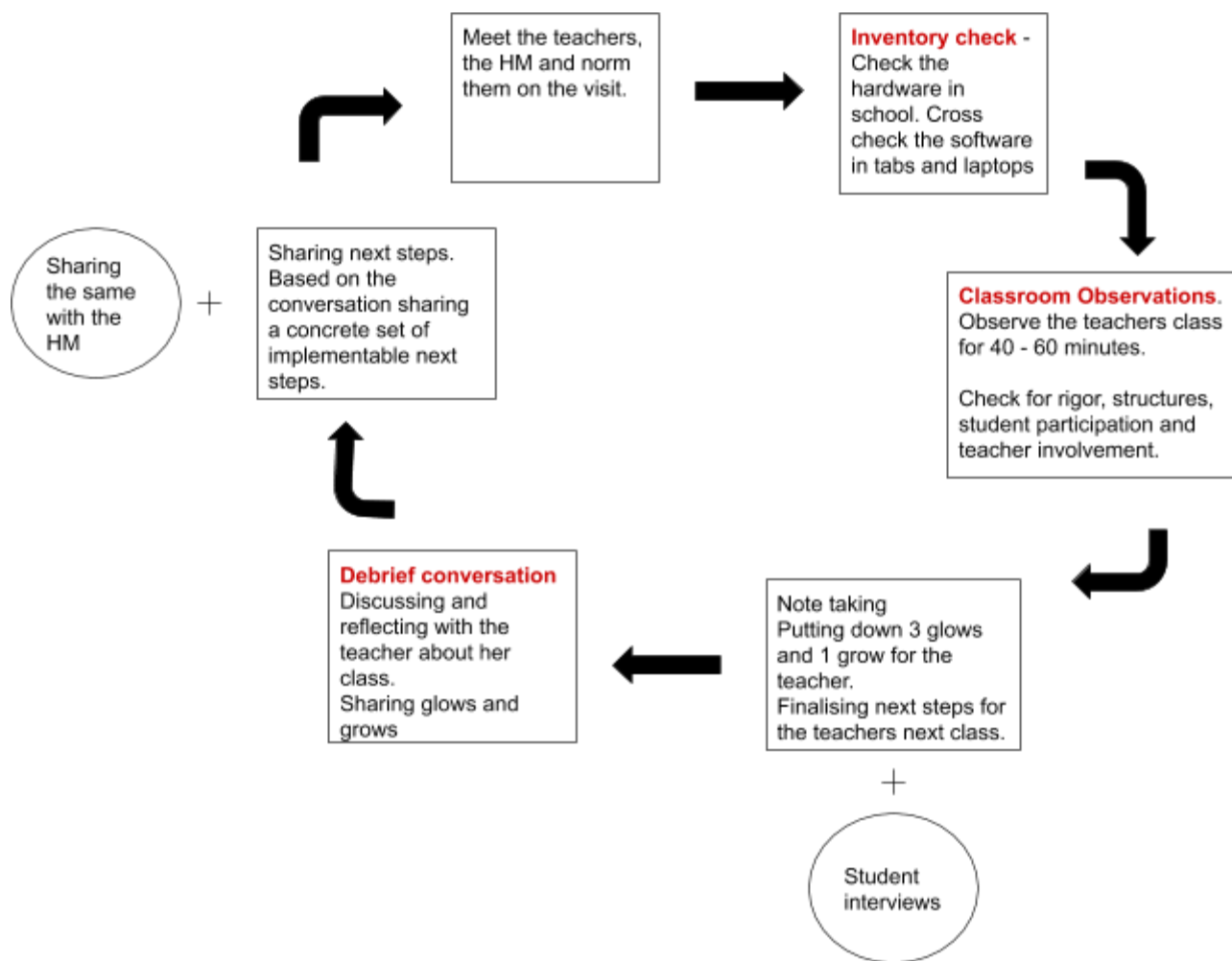
5. Data Analysis

Through this process of the project moving forward, it is important for the teachers to keep analysing and taking next steps based on the results. The Nalanda resources makes it easier for the students and the teachers to analyse data and assess themselves. However it is very important to know how to analyse data and make changes accordingly.

- **Classroom Observations**

Once the teachers have been trained on various on-ground activities, it is important to align them through the objective of the project at all times. Classroom observations include 6 major steps. (These steps have been given in image 3 below). During classroom observations the LFE teams major focus is to do 3 things;

1. **Inventory Check -** Check all the tech resources in school, understand and fix if there have been any breakdowns in the laptop or tabs. Help the teacher fix hardware and software issues, analyse data and check inventory.
2. **Classroom Observations** - This is the most important support structure for the teachers and the project. During this LFE team members observe a tab classroom conducted by teachers, they observe the use of technology, the adaptability of the teachers, the comfort of the students and the pedagogical skills displayed during the class.
3. **Debrief Conversations -** In this stage LFE team members and the teachers have a conversation about the class conducted. This space is for the teachers to reflect on their class and how the objective was fulfilled using blended learning. The LFE team members then shares the glows, grows and next steps with the teachers which can be implemented in their next tab class.

Image3: Classroom Observation Cycle

Meet the teachers, the HM and norm them on the visit.

Inventory check - Check the hardware in school. Cross check the software in tabs and laptops

Classroom Observations. Observe the teachers class for 40 - 60 minutes.

Check for rigor, structures, student participation and teacher involvement.

Sharing the same with the HM

Sharing next steps. Based on the conversation sharing a concrete set of implementable next steps.

Debrief conversation Discussing and reflecting with the teacher about her class. Sharing glows and grows

Note taking Putting down 3 glows and 1 grow for the teacher. Finalising next steps for the teachers next class.

Student interviews

- **Branding and Communications**

1. **Social Media.**
2. **Tantra Saarthis**

Stage 4: Monitor and Support

- Day in the school, structures being used (flowchart)
- Structures of the debrief conversations, observations, in-class creativity by teachers
- Baseline - Weekly summary sheet - daily observations - Trainings - classroom observations + school visits - add data

Key Learnings

Month	Major theme	Key learnings
July	Envision and design	
August	Launch	
September	Execute	
October	Monitor and support	
November	Monitor and support	
December	Monitor and support	

People

- Block Education Officer - Sunita Dhangar

"As our new education officer Dr Vaishali Zankar Veer has taken charge of our district education lead, many innovative ideas are taking place which is always welcomed and appreciated by us. One of the most appreciated practices which we think is proving very helpful for us is the helping hand of LFE Team".

LFE team's full of enthusiasm, charged with new ideas and practices is always proving very helpful to us. Team members are talented, enthusiastic, full of positive energy and the most appreciated quality is very humble and down to earth youth. Their communication skills are very remarkable.

They talk and communicate with all in a very simple and humble way. In my Deola block, all teachers always wait for their arrival in their schools. Their quality which we all like in them is, they always listen to all of us very attentively. What I always notice is that we officers in administration find way little time to go through the positive work of our teachers but the team always devotes their full time to observe the teachers so teachers feel very satisfied with them. They share all their experiences with the team very closely. So, it's very good for the teachers.

The digital classes with tabs, i.e., 'Nalanda Project' which is proving to be a milestone in our students and teachers. Learning with enjoyment, fun, technology is making our classes smart. All schools and teachers are waiting anxiously when the team will bring the project to all the

schools and classrooms. Thanks "LFE Team" for their precious and positive contribution to our district's successful progress and achievement in learning.

Sunita Dhangar
Block Education Officer,
Deola and Nashik

- Teacher -

I'm very glad to say that tablets provided by Nalanda and their team help us to understand the level of the student in Mathematics. Our students get confidence in handling tablets and it increases their technical knowledge. It improves their mental power in solving mathematical problems. It helps in improving some values like handling with care, time management, smartness, cleanliness. One more thing is that coordinators of Nalanda (Sagar sir, Shivani mam, Sai Prasad sir and team) are very helpful and they always inspire us for this project. We feel very proud that Nalanda and Zilla Parishad selected our school for this best project.

Thank you very much.

- Vaishali Sayalekar.
Z.P.primary school Musalgaon

- HM -
- Student -

Partnerships

- **Motivation For Excellence - Nalanda Project.**

The Nalanda Project is an in-class technology intervention that empowers students to take charge of their learning and allows teachers to efficiently deliver classroom instruction. The Nalanda Project equips math classrooms with curricula-aligned, student-friendly content that engages students and enhances their learning.

- Nature of Partnership - TWT project was funded by Motivation For Excellence(MFE), Nalanda Project - a subsidiary of Motivation For Excellence, provided hardware and training support for the team in Nashik.
- Hardware - Software Support - The Nalanda team-oriented the TWT team on hardware and software components of the project.
- Field visits - The team from Nalanda visited Nashik TWT project to monitor the progress of the project in the month of October and provided crucial inputs for the operations of the projects.

Looking Ahead

- **Differentiation** - Differentiation is being introduced in all 20 classrooms of Nashik. The training on the same will be done in the month of January. The Differentiated Lesson quizzes will help the teacher to cater to the students of different learning levels and competencies.

- **Bolo Pilot -** Google Bolo app will be piloted in selected schools in the months of January - March. Aimed at primary grade children, the **Bolo app** is optimised for native Hindi/Marathi speakers, and uses **Google's** speech recognition and text-to-speech technology. "**Bolo** is designed as a reading-tutor **app** that helps primary grade students to improve their reading.

- **PLC -** Peer learning circles will be piloted in selected schools with teachers with the aim of building effective contextual support structures to teachers within the school ecosystem.