Teaching with Technology

THE NALANDA PROJECT

Nalanda - Teaching with Technology Project

Introduction

The Nalanda project in Nashik kickstarted in August 2019 with a 3 year goal of leveraging technology to improve student learning outcomes in Mathematics. In order to make this possible, we believe teachers should be empowered to integrate technology effectively in their day to day teaching. Hence, in partnership with Nashik Zilla Parishad our team worked closely with 20 teachers from 10 Semi English Medium schools catering to 846 students in the first year of Nalanda project implementation in Nashik.

Each school received a Nalanda hardware kit consisting of 40 tablets, 1 laptop, 1 charging cabinet, 1 dongle for LAN connection. The Kolibri platform was preinstalled in each of the tablets and laptops for students, teachers to access level based, curriculum aligned quizzes. Nalanda tab classes were conducted by our 20 teachers with the support of our team through training workshops and classroom observations conducted throughout the year .

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 one year. Due to their support and strong determination of our Tantrasaarthis, the Nalanda project started off with a focus on structures and procedures to use technology and ended the year with differentiated learning of students using technology.

In this section we are outlining the journey of our project for the last one year with details about the key components of the project, milestones achieved and learnings.

Overview of the project

10 Semi English medium schools were selected from a pool of 30+ schools with a focus on improving Math learning outcomes of students from grade 3, 4, 5 & 6. Image below helps to see the spread of 10 schools across 5 different blocks of Nashik district.
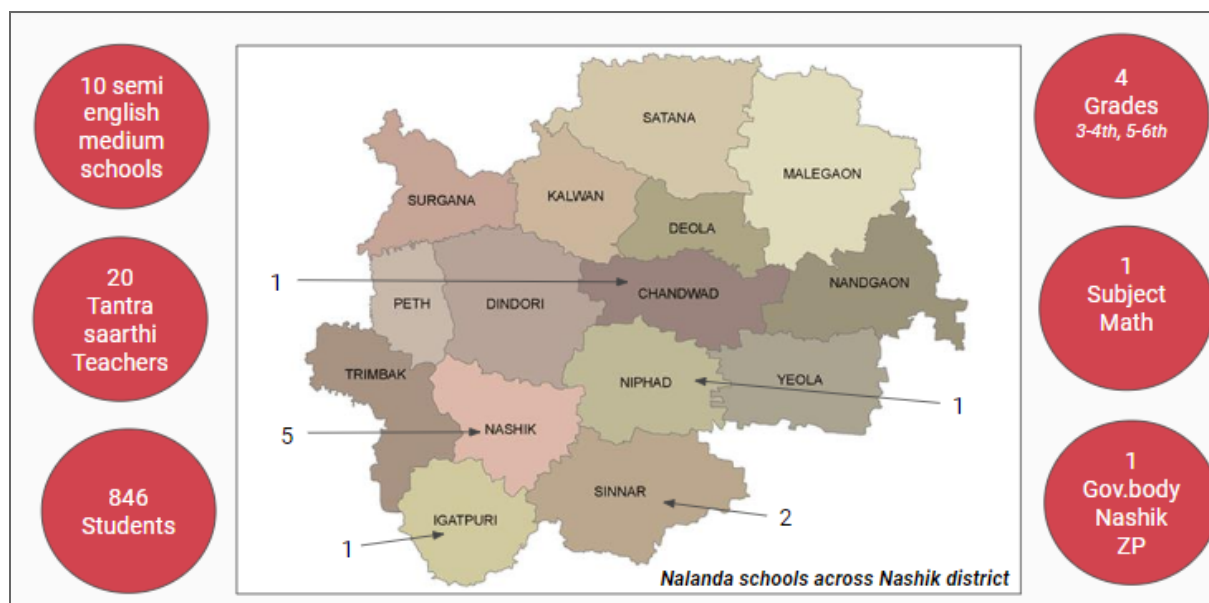
Pic: Nalanda project overview

After the school selection process, key components of the project implementation were defined along with timeline and broken down objectives for each component.
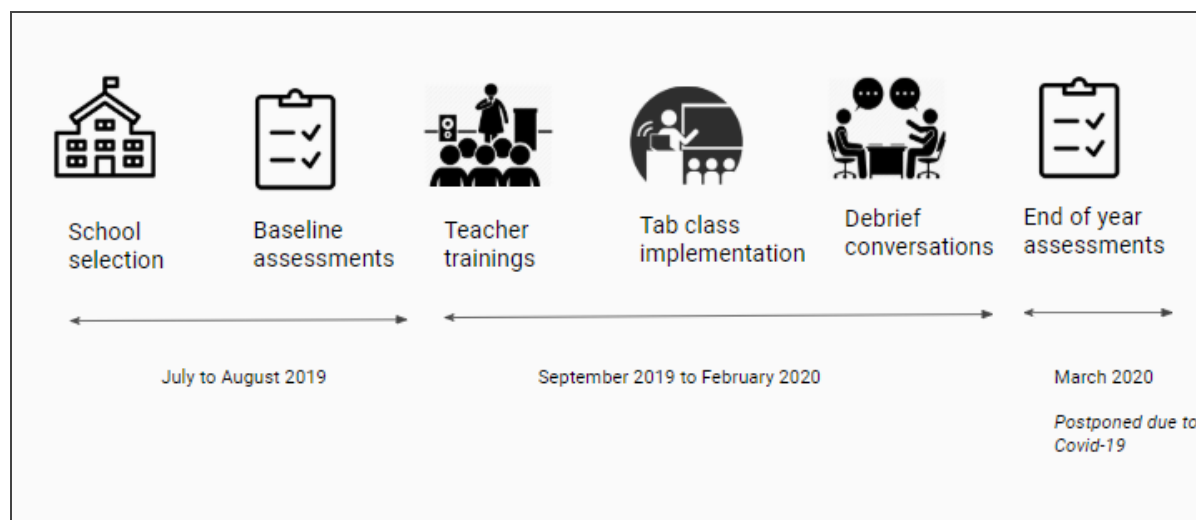
Pic: Nalanda project implementation key components

Inputs and Activities

A. School selection

A three step school selection process was carried out to finalise the 10 intervention schools for the project. A school selection rubric was also developed in order to rate schools on parameters which are essential for successful implementation of the project. The three steps of school selection are as follows:
1) Orientation and interviews of HMs to create first shortlist of schools
2) School visits to interact with teachers and rate the school as per selection rubric
3) Final shortlist of schools as per the ratings and communication with schools

The HM orientation was conducted with 28 schools out of which 25 schools were shortlisted for second round of school visits. The team visited these schools, conducted teacher interviews and scored the schools as per the school selection rubric. The school selection rubric can be accessed here. Based on the scores, 10 schools were finalised for project implementation. The 10 finalised schools are as follows

Sr. No	School Name	Block
1	ZP School, Lakhalgaon	Nashik
2	ZP School,Sansari	Nashik
3	ZP School,Vilholi	Nashik
4	ZP School,Dugaon	Nashik
5	ZP School,Pimpri-Sayyad	Nashik
6	ZP School, Gonde	Sinnar
7	ZP School,Musalgaon	Sinnar
8	ZP School,Kherwadi	Niphad
9	ZP School,Wadiware	Igatpuri
10	ZP School, Mangrul	Chandwad

Table: final list of schools for implementation of Nalanda project

B. Baseline tests: process, raw data, data analysis

Process: Baseline tests were conducted at the beginning of the year in the months of July - August to assess the math learning level of the students. The question paper consisted of grade level competency based questions, which gave a clear understanding of the baseline of the student in terms of competencies mastered.

Raw Data and Data Analysis: The student answer sheets were further corrected and the data was analysed classroom wise to get an understanding of student learning levels in each classroom.

Sr. No	School Name	Class Average A	Class Average B	School : Average
1	ZP School, Lakhalgaon, Nashik	38	43	40.5
2	ZP School,Mangrul, Chandwad	40	53	46.5
3	ZP School,Sansari, Nashik	16	18	17
4	ZP School,Wadiware, Igatpuri	36	43	39.5
5	ZP School,Vilholi, Nashik	29	34	31.5
6	ZP School,Dugaon, Nashik	37	43	40
7	ZP School,Kherwadi, Niphad	39	39	39
8	ZP School,Pimpri-Sayyad, Nashik	59	55	57
9	ZP School, Gonde, Sinnar	56	60	58
10	ZP School,Musalgaon,Sinnar	53	55	54

Table: baseline score summary

C. Teacher trainings

Teacher training was one of the core areas of the Nalanda Project. The trainings were scheduled once every 2 months with a focus on upskilling teachers, imparting knowledge around integrating tech and building a sense of team culture.

Pic: Teacher training session conducted by LFE team members in unit meeting

In the past year, 3 teacher training workshops spanning over 6 days have been conducted focused on building skills and culture amongst the teachers.

Key topics that were covered in the trainings were around:

Topic	What was covered in the training
1. Pedagogy and classroom management	- Conducting a tab class in a structured way, "I do, We do, You do" - Using a) attention grabber b) rules c) make listening visible countdown etc.
2. Navigating through Kolibri, handling laptops and tablets	- How to use tablets, laptops, Kolibri confidently & independently - Maintaining the hardware with tips for resolving simple day to day queries encountered - Structures, procedures to ensure safety & safe usage of devices
3. Data interpretation - Using baseline data to form groups	- Simple data interpretation techniques - How to make sense of the baseline data to understand learning levels of students - Dos and don'ts of forming level based groups in class
4. Concept of differentiation and practices around it	- What is differentiation - Importance of differentiated teaching in classroom to cater to different learning levels of students - Differentiation techniques and managing groups in classroom

D. Classroom Observation

Pic: Students from Lakhalgaon school engaged in blended learning during a tab class

Classroom Observation is one of the most important support structures for Tantrasaarthis. During Classroom observations, LFE team members observe a tab classroom conducted by Tantrasaarthis, specifically the use of technology, the adaptability of the teachers, the comfort of the students and the pedagogical skills displayed during the class. Over 300+ tablet classes have been implemented by Tantrasaarthis across the 20 classrooms. The team has observed and has conducted 170 classroom Observations with Tantrasaarthis.

School-wise observation numbers captured as under:

School Name	Total no of classroom observations
ZP School Lakhalgaon	20
ZP School Pimpri Sayyed	15
ZP School Vilholi	19
ZP School Dugaon	14
ZP Sansari	25
ZP School Mangrul	15
ZP School Wadivarhe	20
ZP School Muslagaon	16
ZP School Gonde	14
ZP School Kherwadi	12
Total	**170**

E. Debrief conversations with teachers

Debrief conversations are conducted post the classroom observation where the team member who observed the class has a conversation about the class with the teacher. The debrief conversations serve as a space for the teachers to reflect on their class.The observation team refers to the Tantra Saarthi checklist to see if Before, During & After actions were done. The LFE team members then share the glows, grows and next steps with the teachers which can be implemented in their next tab class. The team has conducted over **170** classroom observations with Tantrasaarthis.

Pic: Checklist and the template for classroom observation used by the team.

We have been able to identify some common strengths, areas of development across all the observations conducted by LFE team members.

Please find below the list:

Areas	Description
Strengths	**Strong Pedagogical Knowledge** - One of the common strengths observed in the teachers of the project was the grip on the pedagogy. They exhibited a strong understanding of teaching methodologies and practises. **Strong will to integrate technology -** Teachers had a nuanced understanding of technology playing a pivotal role in improving learning and engagement in class.

	Driving effective classroom structures - Teachers effectively drove structures inside their class like class rules, passing procedures, Gradual release of responsibility, Data reflection etc which enabled seamless integration of technology and classroom instruction.
Areas of Development	**Handling devices -** based on our one year of implementing the project on ground, We have noticed teachers facing difficulty in handling and using the devices with ease. **Differentiation -** While in most of the classes, we saw teachers differentiating their instructions based on the student levels, Catering to all the student levels with ease and consistency was not observed in all classrooms
Contextual Support provided	Based on our last year's implementation, through our classroom observations and debrief conversations, we recognised that the teachers, who needed support, fell under the 2 large buckets. a) **Teachers who were technologically savvy but struggled with pedagogy** - Accordingly, the support provided to this group were Modelling out lessons in classrooms, Specific support conversations and sharing best pedagogy practices during debrief conversations etc. b) **Teachers who were sound with pedagogy but struggled with technology -** This group were proximately supported by assisting them to navigate devices inside classrooms, one on one proximate demonstration till their comfortness with technology increased.

Table: Strengths and Areas of development of our teachers

**School visits and investment of government stakeholders**

A monthly update meeting was held with the District Education Officer every month, These monthly meetings contained the project updates and milestones that were shared with the Education officer regularly. 6 update meetings have been conducted with the Education Officer, updating her on the progress of the project. The Nashik education officer personally visited 2 schools and observed the Nalanda tab class implementation and expressed her satisfaction

Pic: Dr. Vaishali Veer, District Education Officer visiting a Nalanda classroom for observation

F. Communications

Monthly newsletter: The monthly newsletter was released every month beginning from December. The newsletter captured snapshots of the highlights of the month's activities, data on the no of school observations, project metrics etc and teacher experiences. In total 4 newsletters have been released till now. The newsletters were shared with the Motivation for excellence team, the CEO Zilla Parishad, Education Officer and Block Education Officers of the Intervened blocks.
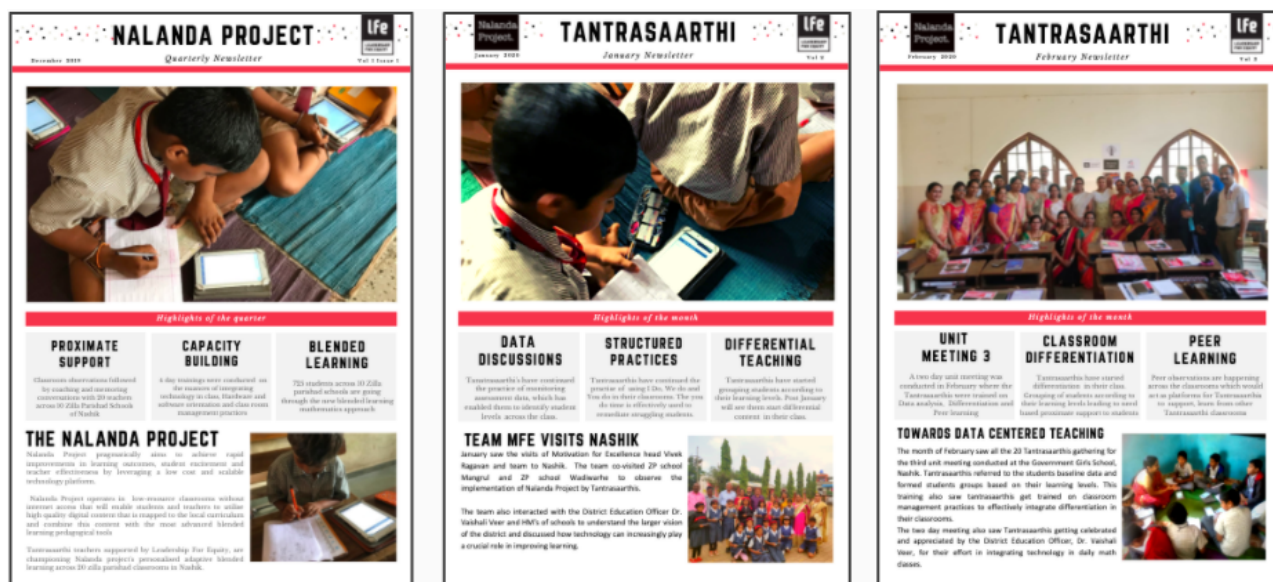
Pic: Monthly newsletters capturing the updates, best practises and stakeholder testimonials

Social media presence : With an aim to share the best practises of our Tantrasaarthis with the larger audience instagram was used as a platform. Over 14 Instagram posts and more than 50 stories capturing practises of classrooms have been posted on the Instagram Handle. Handle also has 132 followers and receives an average of 200 impressions per post.
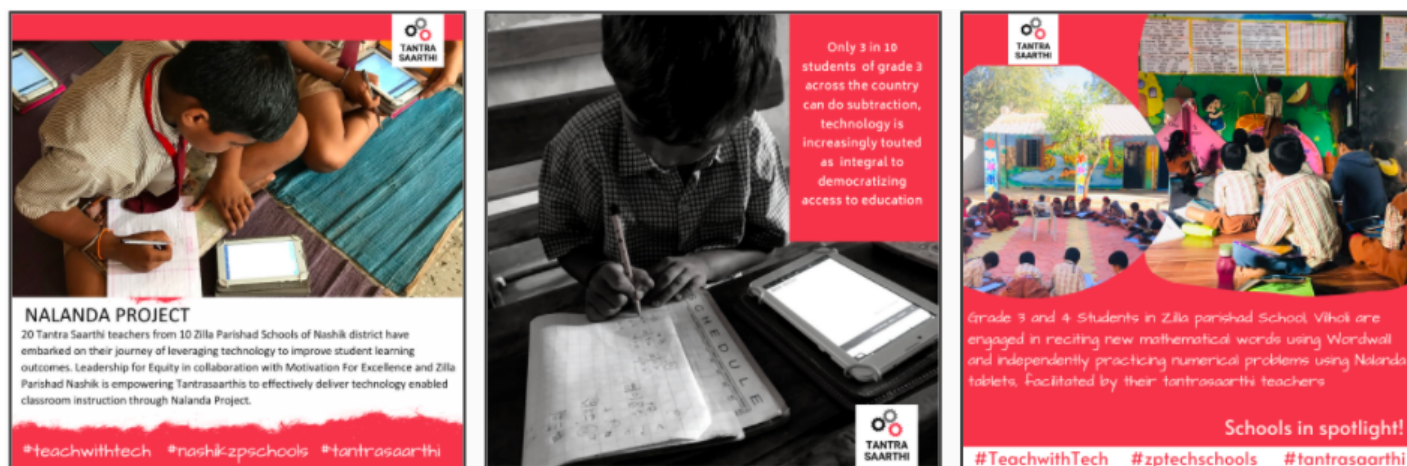
Pic: Three different types of posts published on the tantrasaarthishikshak instagram handle

Learnings

Project Design Learnings
- Involving classroom pedagogical practices from the beginning helped the teachers manage the classroom better
- Dedicating first few tab classes where students are just engaging with tablets on their own would have led them being comfortable with hardware sooner
- Giving teachers a set of actionables (I do, We do, You do) instead of pushing for lesson plans resulted into effective classrooms
- Planning each training session keeping in mind teachers' context helped to boost their confidence to independently implement tab classes
- Student friendly content along with quizzes would have accelerated student learning

Project implementation learnings
- Modelling out classes for teachers and providing proximate support whenever they are stuck helps in better execution and stronger relations
- More investment from HMs could have led to smooth execution in some schools. Need to think of investing HMs from start of the year with clear expectations
- Training teachers on-the-go to resolve basic hardware and software issues could have led to quicker turnaround time for basic queries
- Should have taken a stock of Nashik school holidays and teacher training calendar in advance. It would have helped to avoid rescheduling of trainings

Monitoring and evaluation learnings
- Selection of control schools along with intervention schools would have helped to conduct baseline across both sets of schools
- Rubrics to be used for teacher skill evaluation and classroom observation needs to be finalised at the start of the year
- Data across three levels: Block level, school level, classroom level will be super helpful to present progress in the project objectively to all stakeholders
- For each student, presenting cumulative percentage score for every chapter could have helped them see their areas of improvement clearly
- Engaging with M&E team to streamline data collection and recording would have saved time spent in cleaning/streamlining data
- Provide a brief description of Key inputs/ activities/ workstreams during the year. You can show this with the help of a timeline from the previous year that shows your progress and phases. You can use pictures here to show what it looked like. Definitely add some data points to let your reader know not just 'what you did' but also 'how much'.

Outputs and Outcomes

Goal for the year : 2019-20	Additional information on goals	Progress made
100% of the teachers are at at least level 3 of the teacher skill rubric	As per teacher skill rubric shared at the start of the year	100% teachers on level 3
70% of the classrooms have mastered at least 60% of the set structures to be followed for smooth functioning of a tab class	Structures: Word wall Class rules, Tab passing procedure, Make listening visible, Attention grabbers	90% of the classrooms (9/10) have mastered 100% of the structures
All relevant stakeholders of the project get timely updates on the best practices captured during project execution	Sharing project updates via newsletters with Nashik DEO, Nalanda team	4 Newsletters shared so far 100 stories and 16 posts shared on dedicated instagram handle
100% compliance is achieved for all project related documentation (process documents, learning documents, Quarterly, MY and EoY reports)	Reports are created and shared on time with all relevant stakeholders	Mid year report shared with Nalanda team Learning document is in progress
30% Chapter time on Nalanda Tablets is achieved as per the defined measurement tool	N/A	Unsure of how to measure 30% chapter time, M&E shifted to tracking number of tab classes conducted

Table: Outputs and outcomes achieved through implementation of Nalanda project

Responding to COVID-19

Setbacks on the Nalanda program due to the nation-wide lockdown since March 2020.

- Tab class implementation, classroom observation and debrief conversations were affected.
- Endline tests could not be conducted due to the shutting down of schools
- End of year meeting and celebration event was affected.

Change in our approach

- **Running PLCs (peer learning circles) online and building the ownership among teachers to lead sessions with peers**

  Our Tantrasaarthis have been at the forefront of embracing technology in a way we haven't seen before! Our teachers came together as a team in a virtual setting with the same enthusiasm and rigour. We started with the idea of hosting virtual peer learning circles, **Tantramaanch.** Over a period of 5 weeks, it emerged into a platform led by Tantrasaarthis to upskill the tech skills of their peers. **4 Tantrasaarthis** led a total of 5 Tantramanch sessions - Virtual **Peer Learning circles** on topics such as:
    - Making quizzes using Google forms & Testmoz
    - Google sheet hacks and tips
    - Conducting virtual summer camps with students

  With the support of Tantrasaarthis, we managed to shift 100% of our capacity building interventions online *spanning over more than 450+ minutes of learning and reflections.*

Pictures: Posters created for TantraManch led by teachers