

Mid-Year Report 2019-20

Shikshadi & DIKSHA Content

Student Learning Development

30th November | Pune



TABLE OF CONTENTS

List of abbreviations	2
Executive Summary	3
Background	4
DIKSHA Content	5
Current State of DIKSHA Content	5
Content Creation	6
Jnana Prabodhini & Balbharati	6
Content Aggregation	7
Content Management	8
Textbook Data Clean Up	8
EVS 3rd Standard	9
English language books	10
User Queries	10
Shikshadi	11
Proposed Solution: An Overview	12
Scope	12
Planning & Execution	12
Workshop: Scope and Sequence	12
Content Review Checklist	13
Mapping of LOs and textbook chapters	13
Culture Strands	13
Selection Process	13
Timeline	14
People	15
Partnerships	17
Learnings	17
Looking Ahead	18
Appendix	19

List of abbreviations

Acronym	Expansion
LFE	Leadership For Equity
MSCERT	Maharashtra State Council of Education Research and Training
DIKSHA	Digital Infrastructure for Knowledge Sharing
JP	Jnana Prabodhini
BoS	Board of Studies
EVS	Environmental Studies
LO	Learning Objectives
AY	Academic Year
Balbharati	Maharashtra State Bureau of Textbook Production & Curriculum Research
SSC	Secondary School Certificate
LOBE	Learning Object Evaluation Instrument
ITSA	Information Technology Subject Assistants
dept	Department

Executive Summary

The two words with which we can describe the first half of the academic year 2019-2020 are **planning** and **co-creation**.

Our team works to provide quality digital content to students and teachers of Maharashtra. To do so we are working on 2 major aspects - DIKSHA content and Shikshadi. The former is about uploading new content and maintaining the existing content on the QR coded textbooks. The content is hosted on the DIKSHA app. The latter one deals with building capacity of teachers of Maharashtra to create high-quality digital learning objects. We have been working with the government (MSCERT and Balbharati) extensively on both the projects.

We have been working on DIKSHA for the last one and half year. This year our main focus was on maintaining the portal and app up-to-date and to make all textbooks & content easily accessible via QR codes. We have uploaded content which is created by partner organizations and the content aggregated by our team (including interns) and Information Technology Subject Assistants (ITSA) in various districts in Maharashtra. We have uploaded 367 contents in the last 6 months, out of which 170 are through creation and remaining 197 are through aggregation. To keep the DIKSHA portal up-to-date we have uploaded around 150 textbooks and resolved around 40 user queries.

Shikshadi is a new intervention that we started in collaboration with SCERT and Balbharati in May 2019. In the last six months, our team has focused on strategizing and planning the project. One of the most interesting things about the project is that SCERT and Balbharati are collaborating for the first time on such a project. This gave us an opportunity to better understand the administrative processes of both organizations. By the end of this term, we held a selection conference and concluded the selection process for Shikshadi.

Background

In the academic year 2018-19, Leadership for Equity (LFE) along with Maharashtra State Council of Education Research and Training (MSCERT) and Maharashtra State Bureau of Textbook Production & Curriculum Research (Balbharati), Pune worked to provide access to digital content aligned to the SSC school curriculum. The accessibility was provided through Digital Infrastructure for Knowledge Sharing (DIKSHA). DIKSHA is a national platform to provide access to free of cost and curriculum-aligned digital content. More than 5000 content pieces have been added on the DIKSHA platform for Maharashtra in AY 2018-19. The available content is either created by teachers or aggregated from YouTube and other content partners. While these were significant strides, owing to the vastness of the curriculum (10 mediums, 13000+ QR codes), not all QR codes were covered in AY 2018-19.

This year, as students and teachers are using the existing content on the portal, high demand for more content as well as high-quality content is emerging a lot from our interaction with students & teachers and DIKSHA support queries. These were the two main themes on which our team has worked in the past six months.

To tackle these issues we have been working with Balbharti and Jnana Probodhini to get more and more content on DIKSHA, also to improve the quality of content on DIKSHA we have started a new initiative - Shikshadi, in collaboration with Balbharati and SCERT.

In this report, we attempt to compile all the efforts by the LFE team to ensure an abundance of quality content on DIKSHA. The report has five sections:

1. DIKSHA Content
 - a. Current State
 - b. Creation Initiatives
 - c. Aggregation Initiatives
 - d. Management
2. Shikshadi: Prototyping a new paradigm of content creation

Note: DIKSHA portal can be accessed at <https://diksha.gov.in/explore>

DIKSHA Content

Current State of DIKSHA Content

This section gives you an overview of where we are with regards to content on the DIKSHA platform. Specifically, in the last six months, we have been working to get all the textbooks of Maharashtra state board on DIKSHA, create a repository of total QR codes which are printed in the textbooks and to reduce the gap between required content and linked (available) content. We have grown substantially on all the mentioned aspects. Efforts from SCERT, Balbharati, DIETs along with LFE have contributed to do the same.

Our efforts over the last six months have led to:

- **All 598 textbooks** that have QR codes are on the DIKSHA platform.
- Increase in the number of QR codes that have content resulting in **close to 100% coverage on English and Marathi medium**, which means there is at least one content piece for each QR code in these mediums.
- **Other mediums are at varying levels of completion**, sourcing and creating content for them continues to be challenging.

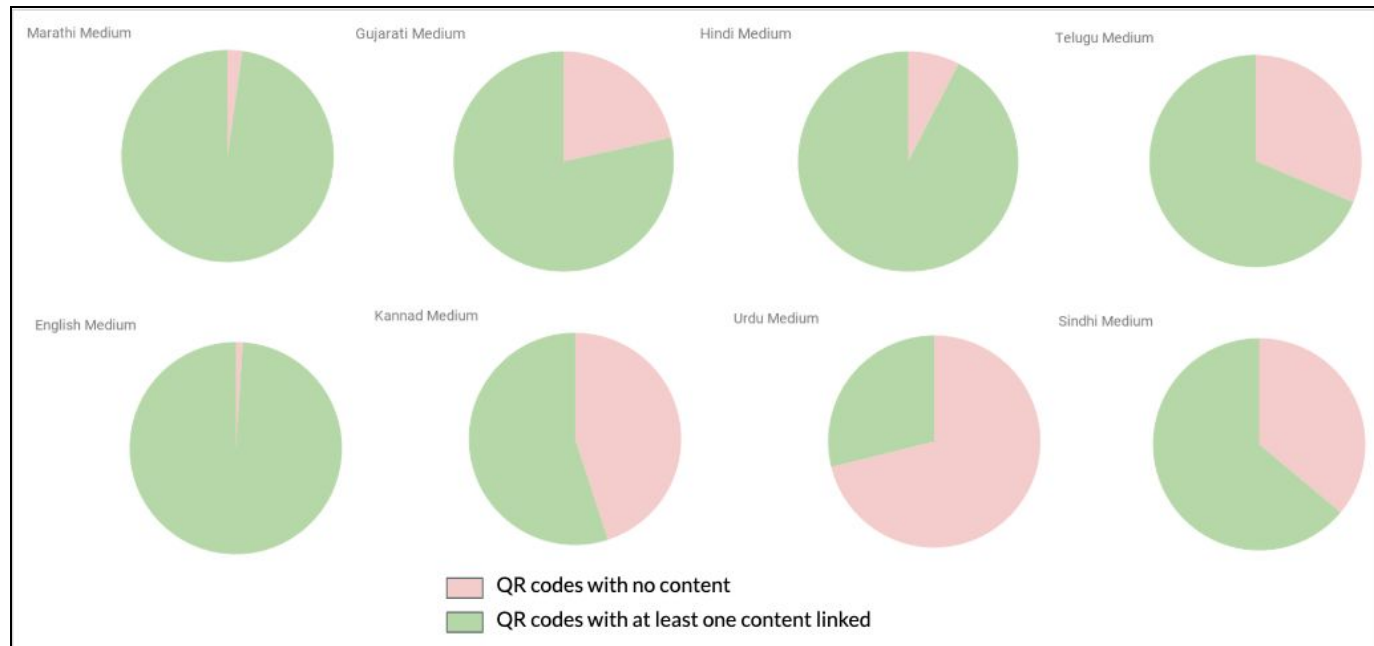


Image1: Medium-wise coverage of digital content by Nov 2019

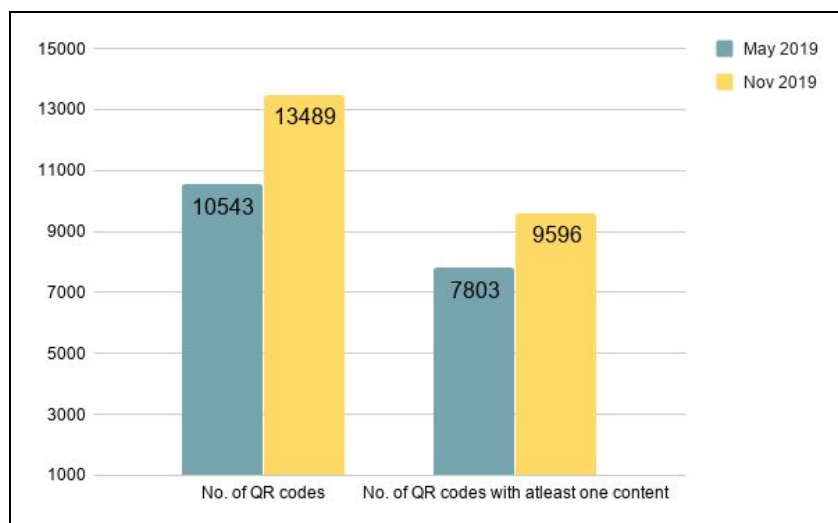


Image2: Total number of QR codes and Number of QR codes with at least one content linked in May 2019 and Nov 2019

The uptick in the number of books, QR codes and linked content is possible because of strategic efforts that we took in content aggregation & creation and content management. In the next 2 sections of the report, we will talk about the work in detail.

Content Creation

The idea of undertaking content-related work is to ensure that we are keeping the platform rich by adding new interesting digital content which is helpful for students and teachers in learning and teaching. For the same, we have been working on two strategies - creating content from scratch as well as aggregating existing content. This section focuses on the first.

Jnana Prabodhini & Balbharati

Jnana Prabodhini (JP) and Balbharati are the two prominent organizations which are creating content for Maharashtra state board syllabus this year and making it accessible to students and teachers through DIKSHA app.

JP has uploaded more than **110 content pieces** on DIKSHA in last six months. JP is uploading content for Marathi, English and Hindi medium mainly for Science subject of higher grades. We have a process in place with JP whereby they submit content on a weekly basis and it is uploaded on DIKSHA by our team.

Balbharati has taken on the scope of creating content for Grades 2 and 11 for this AY. This amounts to a total of 244 content pieces. Till now **Balbharati has created around 60 content pieces**. The content is created by vendors as well as subject departments (dept) and reviewed by the Board of Studies (BOS). Our role in this work has been to train and support people at Balbharati to upload the content on DIKSHA and link it to the respective QR codes. We also supported Balbharati in working with the vendor to create project timelines and design a process whereby content can be reviewed by BOS members efficiently.

Overall, in the last six months, JP and Balbharati have created content for 4 mediums - Marathi, English, Hindi and Gujarati and mainly for six subjects Marathi, mathematics, English, Gujarati, Science and Sanskrit. In total, JP and Balbharati have together created and added 170 content pieces. The graph below shares more details.

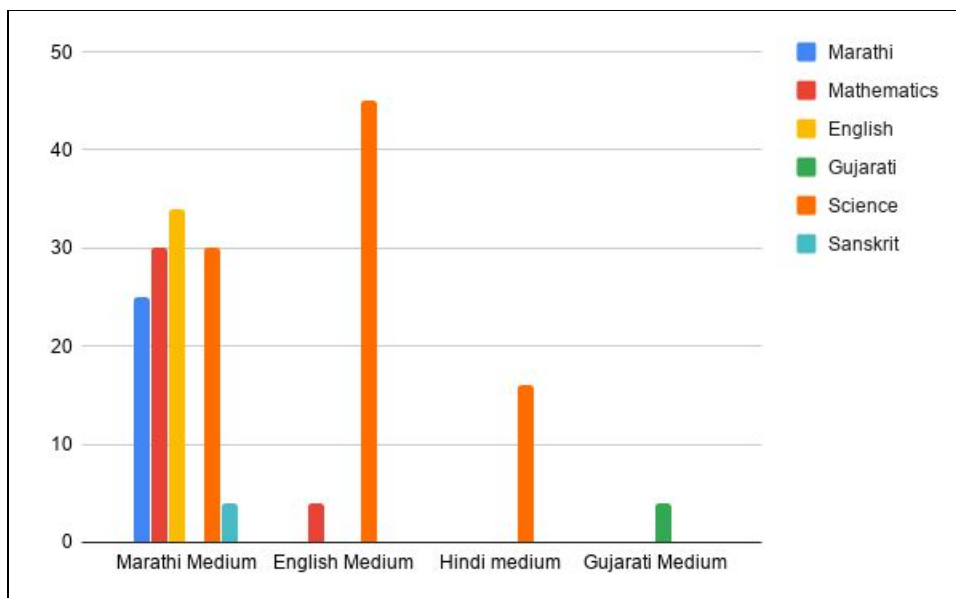


Image3: No. of contents created (Medium wise)

Content Aggregation

Digital content creation from scratch takes a lot more time than collating content from existing sources. Considering this fact and our scope of the year as well as limited resources, we used this strategy to fill the content gaps in the English medium content of 2nd grade as well as Marathi & English medium content which was not created but was in high demand by teachers and students. The content was aggregated from the internet, this includes activity pdfs, assessment pdfs and YouTube videos. Attributions were provided whenever needed. In total, 197 content pieces were aggregated.

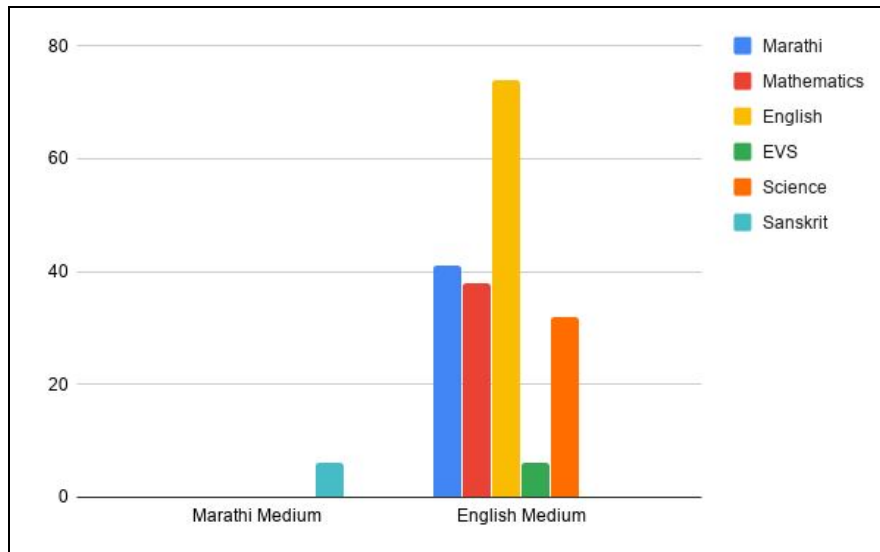


Image4: No. of content aggregated (Medium wise)

Content Management

The content management work includes activities that we do to make sure existing content on the platform is easily accessible to users (students and teachers) and resolving queries from users. The tasks that we do in content management includes keeping the portal up-to-date, investigating issues with the DIKSHA technical team as well as making recommendations on improvements for the future.

Textbook Data Clean Up

The scope of QR coded textbooks in Maharashtra is huge which includes around 10* mediums. When we started the year, there were some discrepancies in printed textbooks and textbooks on the DIKSHA portal. Focused efforts on identifying which were these books with Balbharati and making the necessary changes in the portal has led us to a point where now all textbooks that have QR codes are on the platform (except Grade 2 and 11 that are being added as content is added).

* In the academic year 2019-20, two more mediums are added Bangla & Tamil medium

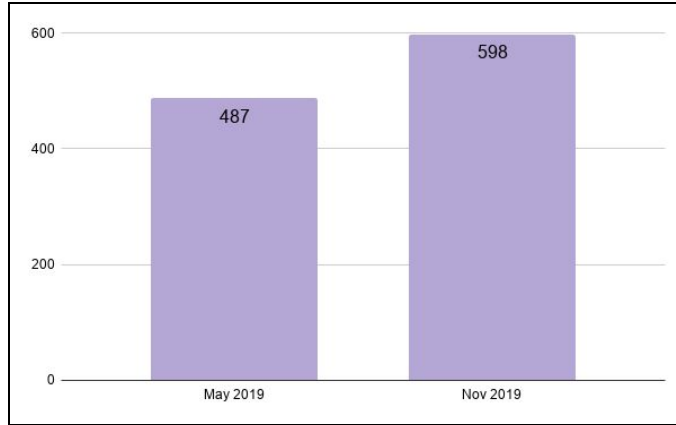


Image5: Number of textbooks in May 2019 and November 2019

EVS 3rd Standard

EVS of 3rd grade is also known as district geography subject. As the name district geography suggests, the book talks about the world of a 9-year-old student and to make it contextual information from their own districts is added. Because of this out of 26 chapters, 4 chapters are different in each textbook as per their district. Hence, each district book has 22 same QR codes but 4 different QR codes. Our team did the work to enable these being represented on the DIKSHA platform so that the textbooks on the platform match the printed textbooks.

The number of textbooks in each medium are as follows:

Sr. No	Medium	Number of EVS Books**
1	Marathi	35
2	English	32
3	Hindi	16
4	Gujarati	5
5	Sindhi	1
6	Telugu	3
7	Urdu	35
8	Kannada	3

Table1: Number of District geography books in each grade medium wise

** You would expect that all mediums would have 35 textbooks. In reality, textbooks are only printed for those districts if there is a school of that medium in that district.

English language books

There are two types of English language books: first language and second language. In all mediums except English, the second language book is used. Even though the 2nd language textbook is the same for all of these mediums, each of these books needs to be created separately on DIKSHA with their own unique set of QR codes. Here is the overview of the number of English books present in all these mediums.

Grade	No of textbooks in all mediums except English (2nd language)
1st - 5th	7 books per grade
6th -10th	1 book per grade

Table 2: Number of English language books in each grade medium wise

User Queries

We receive queries from the DIKSHA users of Maharashtra via DIKSHA tech team. Generally, users share about their experiences on the app, which is mailed to us by the tech team. We take less than 24 hours to respond to the queries. Depending on the type of query resolution time varies between a day to 2 weeks. The queries that we receive mainly come into 5 categories - textbook not available, content not available, wrong or not so related content is linked, content is not playing, not enough content available.

In the last six months, we have resolved around 40 queries. Most of the queries were regarding 'content not available'. This query was prevalent as the syllabus of 2nd and 11th grade was changed in the 2019-20 academic year and it took a few months to upload and link content to these QR codes. This was followed by 'textbook not available' this was due to a recurrent tech error because of which chapter names were getting deleted from the textbooks. In the last two months, however, this tech error has been resolved and not even a single query of this sort has occurred.

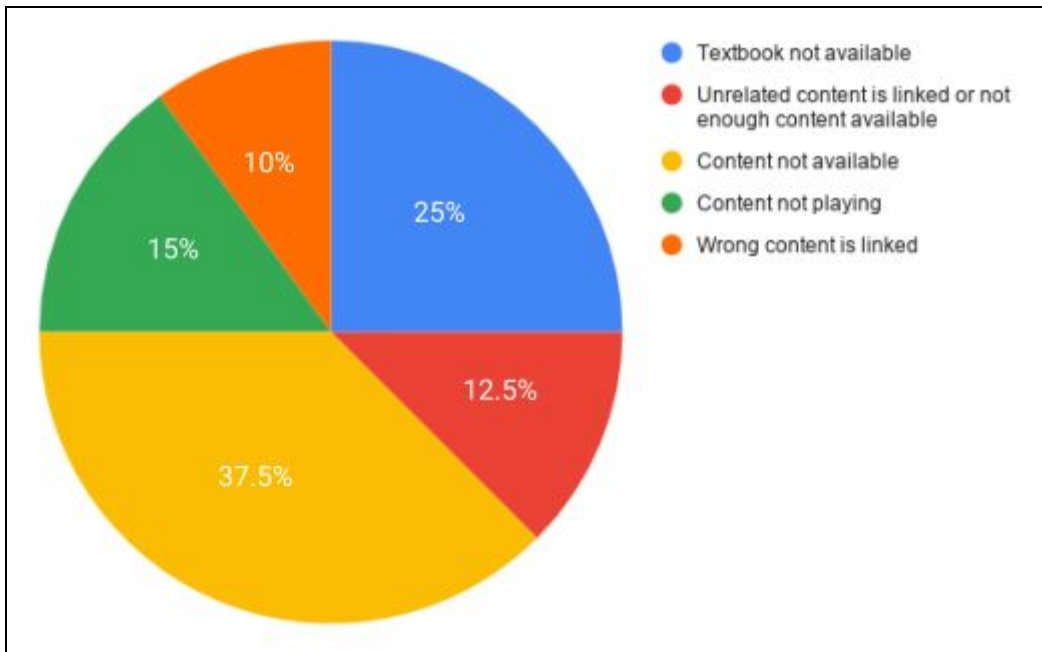


Image6: Percentage of prevalent themes in user queries

Shikshadi

The extensive work of content creation with teachers helped us to understand the requirements of the systems and the systemic obstacles in order to create digital content which is useful for teachers and students. The learnings were quite exciting for us and they pushed us to think about solutions which will build a community of teachers who are capable of creating high-quality content which can be used by students as well as teachers. During this process, we come across some of the challenges which are present in the system. Let's take a look at problem statements that we are trying to solve.

1. **Students** want but **cannot afford access to quality digital content** for self-learning. Currently, there is no government body responsible for creating quality digital content.
2. **Students** need **contextualized digital learning content (in local/regional languages) which is currently limited** in supply. There is more content available in English than in Marathi or other vernacular mediums. Even the content available is not contextualized (e.g. examples relevant to a tribal student vs. an urban student will be different).
3. **Teachers and schools cannot afford to pay for high-quality digital content** to facilitate learning in the classroom. As a result, teachers use sub-par content or do not use digital content to supplement teaching. Some have to spend time creating content specifically for their classroom.
4. **Teachers** who create content are able to create low-cost but not necessarily high quality, engaging content as they **do not have adequate training and support** to do so.

Content Review Checklist

One of the key areas on which we would like to work on with the selected group of teachers is a review of digital content with a critical point of view for self-created as well as peer content created by their peers or any other person. To support this we have created a checklist which can be used by teachers while reviewing content. The checklist reviews three main aspects of digital content - Content, Pedagogy and Technology. Each part is then assessed by posing 6 to 8 questions in each aspect. While creating the checklist we have referred to the Learning Object Evaluation Instrument (LOBE) framework and checklist created by Shikshalokam.

**The Content review checklist is added in the appendix.*

Mapping of LOs and textbook chapters

The first question one would naturally ask before starting a project, how will the output look like. We also asked a similar question - At the end of the workshop cycle what do we expect in digital content? To answer this question we wanted to map chapters of the textbook to the LOs of the same book. Followed to that we listed down what kind of activities a creator can do in order to fulfil the LO. List of such kind of mapping for first 3 chapters of 8th standard Marathi book is attached in the appendix.

Culture Strands

Apart from the high-quality training on content creation, having a strong culture in the team is something that we want to achieve from this project. We are aware that building culture in the team is not a task that we can finish in a workshop, hence we came up with the three main strands that we would like to work on.

Selection Process

To select teachers for the project we came up with a 2-step selection process - Application form and Selection conference. We wanted to select teachers as content creators and teachers as mentors. For both the jobs specific skill that they needed were shortlisted and then the application form was created based on those skills. 1400 teachers applied to be content creators and mentors. Seventy-five were invited to a selection conference from which we were to select 25.

The main skills that we looked for in content creators and mentors are as follows:

Content Creators	Mentors
Academic knowledge in a specific subject	Expertise in a specific subject
Positive and aligned mindset regarding digital content in Education	Experience creating quality scripts and storyboards i.e. instructional design
Basic skills in computer or technology required for	Able to use basic features of Word/Excel and email

content creation	(at least willing to use tech in work)
Willingness and responsible to work	Willingness to learn about the process of digital content creation
Awareness about own capacities and strengths	Mentorship qualities

Table3 : Content creator and mentor skills that we looked for in selection process

The process that we followed is written in the selection process document which is attached in the appendix.

Timeline

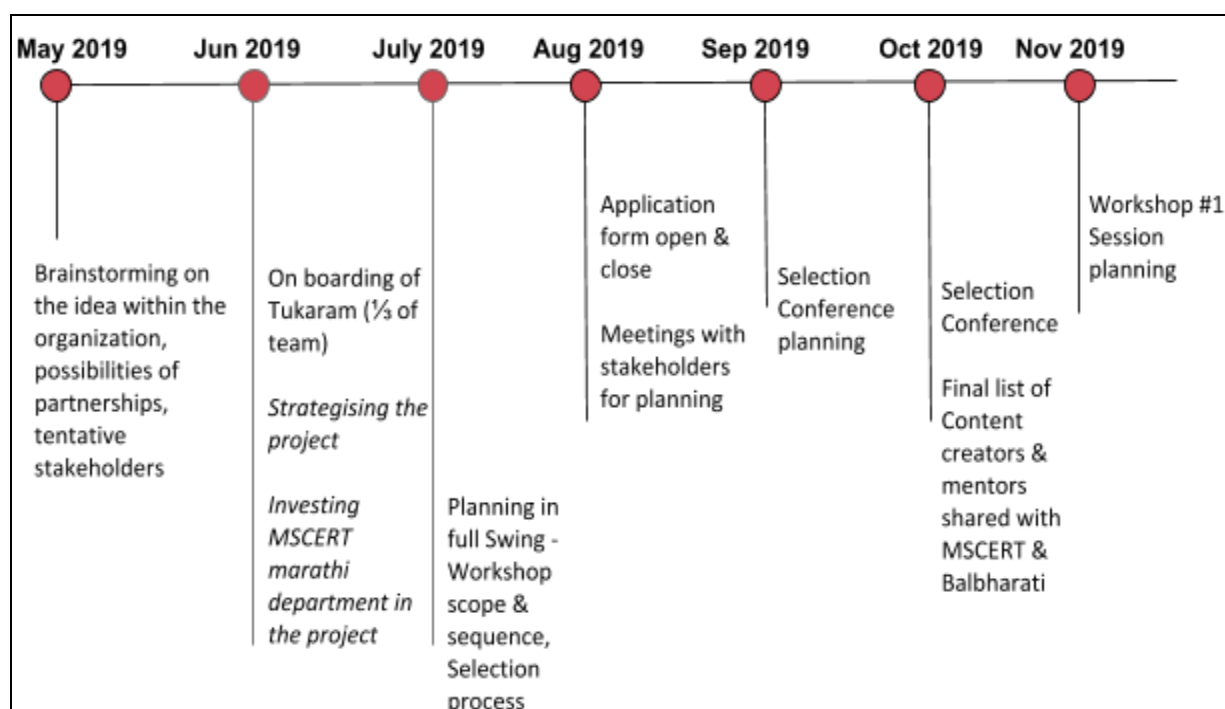


Image8 : Timeline of the events happened in Shikshadi project

People

DIKSHA and Shikshadi work is possible only because of two strong organizations in Maharashtra - SCERT and Balbharati. Their constant support and quest for quality work has pushed us to do the work which can help students and teachers of Maharashtra in their day to day teaching & learning process.



Shital Ugale
IT, Balbharati

In the last 3-4 months, Shital has worked on DIKSHA portal with great enthusiasm. She has learned almost everything about how the DIKSHA portal works. Her questioning ability and quick turnaround time for each task makes her a wonderful person to work with.



Neeta Jadhav
Marathi, MSCERT

Neeta ma'am's guidance while designing, planning Shikshadi project and executing the selection conference has helped us to make this program inspiring for teachers. Her attention to detail and ability to connect to the audience while facilitating sessions at selection conference was amazing to observe and learn from.



Yogesh Limaye
IT Manager, Balbharati

Limaye sir's constant desire to provide useful digital learning material to students of Maharashtra is worth the praise. He has identified a highly capable vendor, defined the high standard of quality and made sure that they deliver on them. The work was possible because he ensured the required conditions like funding support.



Jayaram Bhatkar
Head of Department, Marathi, MSCERT

Bhatkar sir's immense experience in education, strong ground knowledge and excellent written and verbal communication skills gave us the support that we needed while handling various aspects of the project.



Vikas Garad
IT HOD, MSCERT

Garad Sir's constant support and advising on the DIKSHA content and outreach strategies has helped the project to achieve great success.

Rajiv Patole

Special officer, Science, Balbharati

Rajiv Patole Sir's support and initiative to maintain the coordination between the DIKSHA team and Balbharati Subject departments was incredible. His inputs on the strategies to link at least one content to each QR code reduced any further delay in providing the digital content to students and teachers.

Saraswati Suryavanshi

Head of Department, IT, MSCERT

Suryavanshi ma'am's initiative and communication with the ITSA made it possible to aggregate and review the content. She is solution oriented and this amazing trait of hers has significantly reduced the amount of time spent in getting approvals and sending out communication to districts.

Partnerships



महाराष्ट्र राज्य शैक्षणिक संशोधन व प्रशिक्षण परिषद (विद्या प्राधिकरण), पुणे

Maharashtra State Council of Education
Research and Training, Pune



Maharashtra State Bureau of Textbook
Production & Curriculum Research, Pune



**CENTRAL SQUARE
FOUNDATION**

Central Square Foundation, Delhi
Funding partner



Jnana Prabodhini, Pune
DIKSHA Digital content partner
Contributed 110 contents

Learnings

1. Shikshadi project was started with two of the very prominent organizations in Maharashtra, SCERT and Balbharati. This was the first time these two organizations agreed to work on one project. Considering their vast amount of workload and administrative processes, we had to re-adjust on our timelines multiple times.
2. While planning for prototyping any idea, choose a model with minimum dependencies. Check only one or two key areas in quicker ways. Based on the areas which you couldn't prototype

keep the pilot flexible. For example, choosing to run the selection conference with teachers from various districts in Maharashtra made our prototype quite expensive and logistically challenging to start with.

3. Most of the applications for the selection conference came in the first 5-6 calendar days. Even for a state-wide conference, then it is sufficient to have an application link open for 1 calendar week.
4. Involving our government stakeholders as facilitators in the selection conference made the experience of working together much more enjoyable and collaborative.
5. On the DIKSHA portal, we update the textbooks very frequently. In such a dynamic work we recommend to get the updated data of the portal every day. Currently we get the DIKSHA portal data update every week.
6. Learning and improving from user queries is one of the most important parts of any digital solution that we develop.

Looking Ahead

For the remainder of the year, we aim to:

1. Train 2-3 more people from the government to own the content management of DIKSHA
2. Complete the DIKSHA content management documentation module and consolidate the processes so that it is easy to onboard anyone on DIKSHA content management
3. Double down our focus on content aggregation so that we can further meet demands for high quality content
4. Conduct 4-8 content creation workshops for 60-80 teachers to create high quality digital content

Appendix

- Selection Process Report
- [Digital Content Review checklist](#)
- [Workshop Scope and sequence](#)
- [Culture Building in the Shikshadi team](#)
- [Data used to generate graphs in Image1 to Image6](#)