Action Research Workshop Series Plan to Support Uptake of ICT and Interactive Pedagogy in Maharashtra Schools

ICT India Working Paper #7

Tara Stafford Ocansey, Anchal Sharma

April 2019

Center for Sustainable Development
EARTH INSTITUTE | COLUMBIA UNIVERSITY

Action Research Workshop Series Plan Report
April 2019

Written by Tara Stafford Ocansey and Anchal Sharma

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EXECUTIVE SUMMARY

Maharashtra State has identified the use of technology in teaching as a key area for helping to facilitate rapid improvement in learning outcomes for students across the state. Ready to invest further in this area, the state is interested in identifying the most effective tools and approaches for various types of learning environments within the state that can be scaled up. The research team from the Center for Sustainable Development and The Energy and Resource Institute launched a research initiative in Maharashtra to study efforts made in the area of ICT for improved education quality in December 2018. The research focus initially looked specifically at the rollout of DIKSHA (Digital Infrastructure for Knowledge Sharing platform), but is expanding the scope to look more holistically at how support and training for teachers and content creators can help facilitate development and use of more locally relevant content both on the DIKSHA platform and beyond for teachers across Maharashtra.

Based on the feedback from education stakeholders in Maharashtra, the research team identified a range of areas where further action research and training support could help contribute to increased uptake of ICT in education and with higher rates of satisfaction with the DIKSHA platform more specifically. These areas include:
1. Training on quality standards
2. Pedagogical training for integrating ICT and interactive pedagogy
3. Formalized feedback mechanism within the platform
4. Formalized content submission and review process
5. Disaggregated usage data

The first priority identified through conversations with SCERT and NGO partner Leadership for Equity was to do a workshop to co-create a set of Quality Content Creation Guidelines to help support teachers and content creators in producing more quality content for the DIKSHA platform and beyond. The first workshop was held in March 2019, with plans to follow-up with additional workshops to crowdsource and fine-tune the draft guidelines with input from more teachers. The expected outcome is to create a draft of simple-to-use, actionable guidelines that can be presented as recommendations to NCERT. The set of draft guidelines developed during the workshop is included in this report.

In addition to continuing to refine these guidelines, action research for the 2019-20 academic year will focus on studying different models of teacher training on the integration of ICT and interactive pedagogy for improved student learning. To inform which training models will be studied and in which districts, a Digital Schools Survey will be conducted at the start of the 2019-20 academic year with the goal of understanding the current levels of digital infrastructure, support, resources and skills that schools across Maharashtra are equipped with to help inform how the state can best direct resources to support schools in filling gaps and optimizing use of digital technology and resources. The survey will look at six components:
1. General School Characteristics (some data points coming from U-DISE)
2. School Support
3. Digital Infrastructure

4. Teacher ICT Integration
5. Digital Content Availability
6. Digital Community Engagement

Based on these findings, common scenarios will be identified, and districts chosen accordingly to held to identify models of supporting schools through a holistic package of appropriate infrastructure, content and training support. Over the course of a year of implementation of various teacher training approaches, teacher practice and perspectives will be studied, culminating in a comparative analysis that will seek to identify the components and approaches to teacher training and support that lead to the greatest strides in improved teacher practice and student engagement.

ACKNOWLEDGEMENTS

RESEARCH BACKGROUND

India is using Information and Communication Technologies (ICTs) to leapfrog economic development in key sectors: Education, health, infrastructure, finance, agriculture, manufacturing, and perhaps most important, governance. ICTs holds an important promise for education especially in rural areas, if it is optimized and tailored to local needs. The purpose of the larger study that this workshop series report is a part of is to focus on an education platform that helps the teachers to get supplemental materials aligned to the topics they teach at school. DIKSHA being that platform, it is chosen as a topic for research due to its unprecedented potential to bring a wave of transformation in and access to the use of technology for instruction and teacher preparedness. An initial Needs Assessment on the planning phase of DIKSHA will help to create the Theory of Change by using stakeholder interviews to assess the alignment between intention, processes in place and expected outcomes. The needs assessment study will highlight gaps in the translation of intentions into actions to reach the expected outcomes and will guide program design and delivery.

Maharashtra state has launched the platform DIKSHA (Digital Infrastructure for Knowledge Sharing platform) at the start of the 2018-2019 academic year, on a vast level for all the medium of instruction in Grades 1-10. Early feedback of the platform, from research team's visit in December 2018 during focus group conversations, has included criticisms that the platform does not feature enough content for all the topics as promised, and that searching for content requires too many cumbersome steps as compared to other popular platforms like YouTube. At the same time, teachers and school heads also discussed their hope for the platform, understanding that, in its early stages, the platform cannot be expected to be perfect.

Based on the feedback from education stakeholders in Maharashtra, research team identified a range of areas where further action research support could help contribute to increased uptake of ICT in education and with higher rates of satisfaction with the DIKSHA platform more specifically. As a next step to this, with the help of our implementation partner LFE, a series of workshop will be conducted for further support.

WORKSHOP SERIES FRAMEWORK

The research team has worked closely with SCERT and their implementation partner, NGO Leadership for Equity, in identifying areas of focus for further support through workshop and training opportunities. Workshop areas identified for further planning and implementation include the following:

6. **Training on Quality Standards** for content creators and users about what standards to consider when creating/identifying "quality content", including content to be used for different purposes.

7. **Pedagogical training** on how best to use the different kinds of content – including guidelines within the platform itself for each topic, and in-person or blended models of teacher training support (e.g. using video conference platforms to check-in with teachers between in person visits as in the case of Aurangabad).
8. **Formalized feedback mechanism within the platform** and through cluster/block/district support staff for teachers to identify content gaps and make suggestions.
9. **Formalized content submission and review process** with clear timelines and feedback delivery mechanisms. Submission process can include quality checks that the submitter must go through before completing submission (e.g. affirming that they have the rights to the content, that objectives are explicitly included, what the content purpose is, etc)
10. **Disaggregated usage data** reports should be downloaded from the platform and analyzed to district/block/cluster/school level so that education leaders can look at what is being used, how often, how long, whether videos are watched to the end, etc, and make informed decisions on future content creation and teacher training needs accordingly. Based on data review, reviewers can submit feedback to platform so that there is an iterative feedback loop to continually refine the available content for each topic and ensure relevance.

WORKSHOP 1 OVERVIEW – QUALITY CONTENT CREATION GUIDELINES

After the December 2018 needs assessment and January 2019 report, with just a few months left in the school year, the team chose to commence the workshop series with an area that could be of immediate benefit, and help shape improvements to the platform and teacher support strategies that could be taken on for the following academic year. Based on the needs assessment findings that 1) the platform was still in need of additional content, and 2) content creators were facing a bottleneck when it came to receiving feedback on their submitted content, the team decided to start with a workshop focused on developing a user-centered set of Quality Content Creation Guidelines that could be disseminated to content creators and potential content creators to help guide their creation, and be built into the content submission process as a kind of checklist to help streamline the submission and review process.
This workshop focus addresses two of the Workshop Series Framework areas 1 and 4 above.

With these goals in mind, the **objectives of the workshop** were defined to:
- Develop a common, practical definition of "quality content" and "quality standards" for the Maharashtrian context
- Discuss current ideas and come up with a set of criteria for developing quality content
- Compare ideas to the draft NCERT Teacher eContent Evaluation Tool for reviewing/creating content to ensure it is of high quality
- Identify curriculum areas that require new digital content to be developed
- Develop a set of ideas for how quality checks can be embedded into the content creation and review process at various levels

The **expected outcomes of the workshop** were to:

- Have a first draft of user-friendly, actionable Quality Content Creation Guidelines that can be circulated to a wider audience of content creators and expert teachers for further refining
- Have a set of recommendations for embedding quality checks into various steps in review and submission process on DIKSHA

The workshop was scheduled for March 13th-14th, a Wednesday and Thursday, near the end of the academic year while any teachers were busy with exams, but others had the flexibility to travel for the workshop. The workshop was organized by SCERT, with 19 participants traveling from across Maharashtra. The 19 participants included:

- 11 men, 8 women
- 13 primary & secondary level teachers, 1 college level teacher, 1 teacher trainer, 2 private content creators, 2 SCERT representatives

The workshop was held at the Sorina Hillside Resort just outside Pune. The serene retreat atmosphere of the workshop lent itself to high energy among participants, who participated with much enthusiasm. The proceedings of the workshop are outlined below, followed by a debrief of the workshop, and proposed next steps.

Quality Content Guidelines Workshop
March 13th-14th, 2019
DAY 1

10:30-11:00	Introductions & Workshop Objectives
11:00-11:10	Icebreaker/Group Formation
11:10-12:15	Small group activity - brainstorm guidelines that all content **must consider** – including content, pedagogical and technical guidelines. Write each 1 on a post-it, then share out.
12:15-12:25	TEA BREAK
12:25-1:00	Bucket ideas into common themes and name the themes
1:00-2:00	LUNCH
2:00-2:45	In small groups, review Draft NCERT Guidelines – What is similar to what we brainstormed? What's missing? Is it user-friendly? How can it be improved?
2:45-3:15	Share thoughts on Draft NCERT Guidelines in large group
3:15-3:25	TEA BREAK
3:25-4:15	In small groups, take 2-3 themes from the guideline brainstorm and detail out the guidelines for those themes
4:15-5:00	Share draft guidelines in large group and discuss/refine
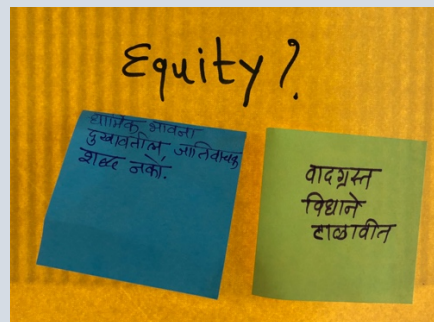
	DAY 2	
9:30-9:45	Review yesterday's activities	
9:45-12:00	Continue large group discussion to refine draft guidelines	
12:00-1:00	Get into small groups by subject and discuss your process for determining what topics in your subject benefit from digital content (e.g. abstract concepts, etc)	
1:00-2:00	LUNCH	
2:00-3:00	In same groups, build a list of the types of content that are missing and need to be created to help teach the topics you identified earlier	
3:00-3:30	Share out to big group and discuss	
3:30-3:45	TEA BREAK	
3:45-4:15	Review DIKSHA reviewer checklist and discuss how our guidelines can be used to help guide the submission process in DIKSHA for content creators	
4:15-4:30	Wrap-up and Next Steps	

Day one of the workshop flowed smoothly with much active participation amongst the vast majority of participants. The activities were structured to solicit a first round of guideline ideas from all participants as a starting point, Participants were asked to write all their ideas on post-it notes, with one idea per post-it, and then put them up on the wall. Once all ideas were on the wall, the group worked together to organize similar ideas into themes. This process helped the group to identify priority areas for further refining, and also to generate new ideas that were found to be missing from the initial round.

After establishing their agreed themes, the groups were presented with a draft set of guidelines developed by NCERT. It should be noted that the guidelines were apparently drafted without participation from teachers or content creators, however no preconceptions about the draft were shared by the facilitators. The NCERT guidelines, called the Tool for Evaluation of eContent for Developers/Administrators/Teachers, had criteria broken down into 3 categories – Content, Pedagogical Consideration, and Technical. In total, the tool included 71 guidelines to consider. During the review, the groups quickly came to the opinion that the list was far too long to be of practical use to teachers, and that many of the criteria were vague and/or used too technical of language to be accommodating to teachers. The participants then decided that for their guidelines to be user-friendly for teachers creating content, they should be as specific and concise as possible, and include actionable language. The groups also discussed that once

the guidelines were finalized, the DIKSHA content creator platform could include templates and guideline videos to help content creators visualize and have a starting point for how to implement the guidelines with ease.

The late afternoon of day one and morning of day two were then spend discussing and debating the groups' ideas and coming up with a first draft of guidelines. The intention of the draft is for it to be used as a springboard for additional workshops with more content creators and expert teachers to further refine this draft before finally sharing a set of recommended guidelines with NCERT and SCERT for integration into content creator training and support frameworks and into the DIKSHA content creation platform. The initial draft of Quality Content Creation Guidelines generated during the workshop is included below.

GUIDELINES for e-Content Creation
Draft developed during March 13th-14th Workshop

These guidelines apply to ALL e-Content (where relevant) – including audio, video, images, worksheets, etc.

Before creating content consider…
- Creator should be teacher of that subject, and tech savvy. If creator is lacking technical skills, he/she should collaborate with someone with those skills
- Should look at existing content to increase awareness/get ideas/identify gaps to fill
- Talk to peers and students before making content
- Review templates of how content of different types should flow / elements to include (TO BE DEVELOPED)

Equity
- No one should get hurt because of photos, images or texts related to their social group, religious beliefs, caste, ability, language, gender
- Content should strive for fair representation of gender, as appropriate for the topic
- Controversial statements, including political statements, should be avoided
- Depictions of violence are avoided

Language
- Content should include few words/simple language
- Examples should be from day-to-day life
- There should be clarity in explanation and examples – avoid ambiguous language
- All content should use standard/official language **OR** Use language that is used in that region (dialect) as well as what is widely used in that state (official).
- Consistent terminology for the subject should be used

Audio
- Should be free of noise
- Volume should be between XX and YY decibels (follow-up w/ Ravi)
- Audio effects should not include competing audio elements (e.g. music should fade out before narration begins)
- Background music and audio effects should only come from SCERT approved sources – TO BE CREATED
- If using audio, audio format should be in .mp3 or .wav (you can use XX free software to convert)
- Content should specify if it includes audio or not
- Audio on DIKSHA should consistently make use of audio button

Font
- Internationally accepted norms should be followed for fonts and sizes (e.g. templates from Microsoft Office)
- Headings, sub-headings, paragraphs should all be specific size ranges/ratios, sizes TBD
- Hyperlinks should be blue
- Slides shouldn't have more than 4-5 points/lines of text
- Font should be standardized based on class level (ie sans serif for early grades)
- Consider how it will look on phone and mobile (needs to be fleshed out more)

Engagement
- It should be interactive
- Linking videos – 1 should be connected to the next. Should be sequential. Student should give answers, then they should go to next video
- Content should be sequenced as to allow for learner reflection or to facilitate questions/discussion
- Questions should be given in quiz form

Video
- Self-made
    - While teaching in class
    - While teaching in lab
    - During field visits
- Videomaker should uncenter him/herself and focus on concept
- Activity should come first, explanation comes later
- No watermarks
- Voice and visuals should be synced
- Video should be according to age group
- If we are taking part of any existing video, we should only take the key parts, not the whole thing
- Lighting should be appropriate, use natural light when possible (provide examples of how to angle lighting)

- Videos should provide follow-up resources/links at the end/in the description
- Slide transition/animation should serve a function, not just for flashiness – optimized for low bandwidth
- Framing and aspect ratio considerations to be added

Legal
- Images, videos, audios copyright free or use creative commons license
- Permission/consent is obtained from anyone whose content or image you are using
- Nothing that could be understood as being anti-Constitutional should be included
- Include how you are licensing your own content, e.g. through creative commons license
- Representation of individuals or historical events should come from authentic sources, not based in personal views

Script
- Start with objectives – what should the student learn by the end?
- Include activities, summary, etc.
- Include keywords from textbooks

Pilot
- Content has been piloted to check for effectiveness
- Content has been discussed with students to make necessary changes

Images
- Resolution should be at minimum 75 pixels
- Only open source images are used or images which have been properly referenced or used with permission (use textbook images wherever possible)
- Use lots of contextual images
- Any images of graphs or maps should be from textbooks or other authentic sources
- 2D & 3D images

After finalizing this first draft of guidelines, the remainder of day two was focused on helping content creators to think through the criteria they consider when deciding to use digital content for particular topics, and deciding what kind of content is most useful for various topics. For example, for science teachers who teach in schools without lab equipment, certain concepts may be very abstract. For them, the kinds of content they need might be videos of certain kinds of experiments or simulations. Once the groups developed their set of criteria and ideas for content, they would review content already available and identify gaps that need to be filled to help guide their content creation work.

This portion of the workshop was a bit more difficult, with the participants taking some time to grasp the objective of the activity. Some groups spent significant time debating between using videos versus images instead of focusing on the actual content that such videos or images would be presenting. Once these concepts became clearer, some groups came up with excellent, specific ideas for the kinds of content that could help elaborate particular topics within their subjects.

The workshop ended with a brief discussion of how the DIKSHA platform could integrate the guidelines as a kind of checklist required for completion before submission to help streamline the process and eliminate content from being returned due to quality issues that could have been avoided with more clarity up front. The main ideas that emerged from this discussion included:

- Different types of content could have downloadable templates with pre-set formatting, flow, etc to guide the creator. They wouldn't have to use it, but it would at least give them ideas and help demonstrate what good quality looks like
- Have same checklist before submitting content on DIKSHA – submit button only becomes clickable when all criteria are checked
- Form WhatsApp groups to help share the guidelines far and wide with content creators
- Pair tech savvy teachers with less experienced/skilled teachers

Next Steps

1. Continue refining Quality Content Creation Guidelines through follow-up workshops
   With the intention of using the draft guidelines from the workshop as a springboard to further refine it, more workshops will be conducted in collaboration with implementation partner LFE for more content creators, expert teachers and organizations who are developing content across the state in the next phase. It will help in coming up with concrete guidelines which can be recommended to NCERT and SCERT for integration into content creator training and support frameworks and into the DIKSHA content creation platform.

   Based on the research team's experience during the first workshop facilitation and feedback from the teachers, there will be a few changes made in the format of the workshop, particularly in more clearly explaining the objective of each of the activities where teachers have to work in small groups on their own. It will be made easier to understand and broken down in sub steps to follow so that teachers can use their work time effectively without being confused.

2. Recommendations to NCERT
   Feedback and suggestions coming from the teachers attending the workshop after reviewing the draft version of Tool for Evaluation of e-Content for Developers/Administrators/Teachers, recommendations will be made to NCERT to make the guidelines more crisp, practical and user friendly so that the final tool will be very

handy for teachers/content creators to use. These guidelines should be made as specific and concise as possible and must include actionable language.

3. <u>Recommendations for the DIKSHA platform</u>
   Based on feedback from teachers and content creators, the platform should build in a basic checklist for content creators to review before submitting the content. This will automatically help in submission of quality content by the creator and streamline the review process. Also, the platform should offer templates for different types of content that make it easy for creators to adhere to guidelines on formatting, flow, etc. This will guide the creator in creating quality content. Preference should be given to the subject or content which has the least content availability on the platform, so that there is availability of content for different subjects and grades.

   Guidelines can be documented in a format of videos as well. This will help the content creators to visualize the process better and have a starting point to implement the guidelines with ease. It will make them feel confident to use the guidelines suiting their target audience.

ACTION RESEARCH ON BUILDING PEDAGOGICAL SKILLS FOR INTEGRATING ICT

In addition to continuing to fine-tune the creator-centered Quality Content Creation Guidelines through more workshops, a major focus going forward in the 2019-20 academic year will be conducting action research to identify what methods and models of pedagogical training and support for integrating ICT effectively in classrooms lead to sustained uptake among teachers in different settings.

As a first step in informing design of training approaches for various contexts and school needs in Maharashtra, the research team will carry out a Digital Schools Survey at the start of the 2019-20 academic year with the goal of understanding the current levels of digital infrastructure, support, resources and skills that schools across Maharashtra are equipped with to help inform how the state can best direct resources to support schools in filling gaps and optimizing use of digital technology and resources. The survey will look at six components:

7. General School Characteristics (some data points coming from U-DISE)
8. School Support
9. Digital Infrastructure
10. Teacher ICT Integration
11. Digital Content Availability
12. Digital Community Engagement

Data from the survey will be cross-referenced with school data available from U-DISE to create a holistic picture of schools' capacity to fully leverage digital technology to improve teaching and learning.

The survey is to be carried out through a mix of online and in-person means. The research team assumes that many of the most hard-to-reach schools/less digitally equipped schools that this survey is designed to support will be the same ones who may struggle to complete an online survey. Therefore, for the data collected through this survey to have the intended impact, it will be imperative that enumerators from DIECPD offices be engaged to help collect in-person survey data at schools identified as being hard to reach or who lack the ability to easily complete an online survey.

Data analysis from the schools will seek to identity common school scenarios with regard to their capacity for effectively integrating ICT into teaching and learning. Based on these common scenarios, pedagogical training frameworks will be developed for implementation over the course of the academic year. Such scenarios might include:

> School has several devices, strong connectivity, access to some digital content, and teachers have a solid baseline of digital skills, but teachers need support in effectively using the devices and content, and knowing which devices and content are best for different learning needs. Teachers may also be interested in creating content, and need support in using the new Quality Content Creation Guidelines.

> Schools have few devices and access to Internet, if somewhat unstable. Teachers need support in upgrading their digital skills, identifying locally relevant online resources that are available for download and offline use, and pedagogical training to use technology in to drive inquiry and learner-centered activities.

> Schools have weak to no Internet access at the school, but some teachers use their phones to look for information. Teachers want training in using resources designed for their situation, such as DIKSHA, and in identifying what kinds of devices could help upgrade their teaching and learning process to inform their requests to the district/state for investments in their schools.

Based on the survey findings, pedagogical trainings will be designed and implemented in a sampling of districts across the state in collaboration with Leadership for Equity and DIECPDs. Selected schools will receive at least 3 in person/blended trainings over the course of the academic year, and have access to staff for regular support using WhatsApp and other video conferencing technology.

Different models of teacher training will be studied, and will be identified in the coming weeks through outreach to various DIECPDs and NGO partners doing innovative work in the area of teacher training. One model may include a pilot of an adapted version of the Center for Sustainable Development's Virtual Reality Teacher Training Platform. The Virtual Reality (VR)

platform was developed in 2017 by CSD's Connect To Learn initiative – a partnership with global telecommunications company Ericsson. Platform development was supported by Qualcomm Wireless Reach, and was designed as a follow-up to a 2-year engagement with 31 schools in Myanmar supported by UK Aid's Girls' Education Challenge. During the two year program, 31 schools in Myanmar received installations of teacher computer kits and student tablets, and were equipped with connectivity. Teacher trainers from the Myanmar Ministry of Education received training in integration of ICT into classroom practice, which they then implemented with teachers from participating schools. The project saw significant uptake in use of technology by teachers and students. To sustain that progress, the initiative needed to identify a low-cost approach to ensure teachers would have ongoing access to training and support. designing a localized series of VR modules that could be used and reused by teachers with many different pathways, the Ministry of Education could achieve similar results as would otherwise require the high costs of training venues, per diems, transport, and missed days in the classroom.

CSD and Ericsson, together with a UK-based VR firm, developed a series of four modules to help 1000 plus teachers understand the goals of student-centered, ICT-integrated pedagogy and explore various approaches to integrating it in the classroom. The approaches and sample activities that are covered in the modules are based on a global literature review of recommended pedagogical practices from country curricula in order to ensure that the activities covered are applicable in different country contexts.

Based on expressed interest in this solution by the Maharashtra Education Commissioner as a possible area for further exploration in Maharashtra, the research team is looking into possibilities for adapting their solution for the Maharashtrian context in partnership with SCERT and LFE, and piloting it as part of this research strand looking at different approaches to teacher training focused on integration of ICT.

Alongside implementation of these various training approaches, the research team will conduct teacher and student surveys and interviews and regular classroom observations to monitor the degree to which involvement in teacher training correlates with increased use of technology in lesson preparation and/or delivery and modes of student participation. Classroom observations will measure the types of student engagement taking place in the classrooms, how much time is spent on various types of activities, and different ways ICT is used by teachers and students.

After the close of this research looking at different models of teacher professional development, a comparative analysis will be conducted to help understand which aspects of teacher training lead to the most significant changes in teacher practice and classroom engagement, considering cost effectiveness of the various approaches as well. Based on this analysis, a set of recommendations will be made for how effective teacher training in integration of ICT can be scaled up.

APPENDIX A

DIGITAL SCHOOLS SURVEY DRAFT

The objective of this survey is to understand the current levels of digital infrastructure, support, resources and skills that schools across Maharashtra are equipped with to help inform how the state can best direct resources to support schools in filling gaps and optimizing use of digital technology and resources.

Data from the survey will be cross-referenced with school data available from U-DISE to create a holistic picture of schools' capacity to fully leverage digital technology to improve teaching and learning. Data points will be collected and analyzed across 6 key areas:
1. General School Characteristics (some data points coming from U-DISE)
2. School Support
3. Digital Infrastructure
4. Teacher ICT Integration
5. Digital Content Availability
6. Digital Community Engagement

The survey is to be carried out through a mix of online and in-person means. The research team assumes that many of the most hard-to-reach schools/less digitally equipped schools that this survey is designed to support will be the same ones who may struggle to complete an online survey. Therefore, for the data collected through this survey to have the intended impact, it will be imperative that enumerators from DIECPD offices be engaged to help collect in-person survey data at schools identified as being hard to reach or who lack the ability to easily complete an online survey.

The proposed timeline for the data collection is the 5th-15th of June when teachers have returned to school but classes are not yet in session.

The survey should be completed by the Headmaster OR by a tech savvy teacher with approval from the Headmaster.

SURVEY QUESTIONS

General School Characteristics

1. What grades does your school serve?
2. How many students are enrolled in your school?
   a. Boys_____
   b. Girls_____

3. How many teachers work in your school?
    a. Men____
    b. Women____
4. How many classrooms does your school have?
5. Does your school have electricity?
    a. Yes
    b. No
            i. If Yes, how is it supplied?
                1. Grid
                2. Solar
                3. Generator
                4. Other
6. How would you describe your school setting?
    a. Urban
    b. Peri-urban
    c. Rural
    d. Tribal area
7. What is the furthest that students travel to reach your school?
    a. 1km
    b. 2-3km
    c. 4-5k
    d. More than 5 km

School Support

8. Does your school have a Principal?
    a. Yes
    b. No
9. Does your school have at least 1 teacher who is highly skilled at using ICT?
    a. Yes, more than 2
    b. Yes, 2
    c. Yes, 1
    d. No
10. Does your school receive regular support from resource persons from DIECPD?
11. How far does your assigned Resource Person from DIECPD travel to reach your school?
12. How often does your school receive visits from DIECPD/SCERT staff?
13. How many times per year do teachers from your school receive professional development trainings?

      a. 0

      b. 1

      c. 2

      d. 3 or more

14. How would you rate your satisfaction with the support received by DIECPD/SCERT?

      a. Very satisfied

      b. Somewhat satisfied

      c. Somewhat dissatisfied

      d. Very dissatisfied

Digital Infrastructure

15. What quality of data is available at your school?

      a. EDGE/2G

      b. LTE

      c. 3G

      d. 4G

16. Which of the following Internet connectivity scenarios best describes your school's situation?

      a. Our school has reliable Internet everyday, and numerous devices can connect at once without a problem.

      b. Our school has mostly reliable Internet. Only a couple or few devices can connect at a time.

      c. Our school has Internet, but there are regular outages, and/or only or two devices can connect at a time.

      d. Our school does NOT have Internet

17. How many of the below types of devices, in working condition, does your school have?

      a. Smart phones_____

      b. Desktop computers _____

      c. Laptop computers _____

      d. Tablets _____

      e. Projectors _____

      f. Smart boards _____

      g. Other (e.g. audio/visual equipment, etc) _____

Teacher ICT Integration

18. Are there teachers at your school who use technology to **prepare** their lessons (i.e. research the topic online, finding resources to share in class, etc)?
    a. Yes
        i. If so, how many? _____
        ii. If so, how often?
            1. Everyday or almost everyday
            2. At least once per week
            3. Less than once per week
            4. Once per month or less
            5. Never
    b. No

19. Are there teachers at your school who use technology to **deliver** their lessons (i.e. using a projector to present slides, showing a video, etc)?
    a. Yes
        i. If so, how many? _____
        ii. If so, how often?
            1. Everyday or almost everyday
            2. At least once per week
            3. Less than once per week
            4. Once per month or less
            5. Never
        iii. Please describe one example of how technology is used by teachers in your school.
    b. No

20. Have teachers at your school received training on using technology in teaching practice in the past year?
    a. Yes
        i. If so, how many sessions were held?
        ii. What was the focus of the training? _____
    b. No

21. What teaching methods, in general (with or without ICT) are most commonly used in your school? Select the top 3 most used methods:
    a. Lecture method
    b. Discussion method
    c. Individual work
    d. Pair/group work
    e. Teacher demonstration method
    f. Student demonstration method
    g. Other _____

Digital Content Availability

22. Check any of the below software/digital resources that your school uses on any of its devices. If you don't use digital content at your school, leave blank.
    a. Kompkin _____
    b. GuruG _____
    c. BSNL _____
    d. Nalanda _____
    e. DIKSHA _____
    f. e-Balbharati
    g. Khan Academy
    h. YouTube
    i. Microsoft teacher platform
    j. Other_____
    k. DO NOT USE digital content

23. How satisfied are you with the availability of content for your subject?
    a. Very satisfied
    b. Somewhat satisfied
    c. Don't know/Not interested
    d. Somewhat dissatisfied
    e. Very dissatisfied

24. What kind of additional content would be useful for your school (e.g. considering language, local relevance, etc)? (optional)

Digital Community Engagement

25. How would you describe your school's web presence? Check all that apply.
    a. We have our own website
    b. We have our own YouTube channel, or one of our teachers has a content channel
    c. We have social media pages (Facebook, Twitter, etc.)
    d. We access/use the default government provided website
    e. Other_____
    f. We are not present online

26. How does your school engage with parents in the community? Please rank those that apply, starting with 1 for most commonly used method.
    a. In-person meetings at the school ____
    b. Outreach to communities by school representatives ____
    c. Announcements/flyers sent home ____
    d. Phone calls ____
    e. WhatsApp messages/groups ____