Tata Education and Development Trust

Impact Assessment report

“Technology Development to Enable Student Motivation Programmes in Government Schools”

of Shiva Sri Charitable Trust

IT for Change, November 2017

Table of Contents

1 Executive summary

Tata Trust gave a grant to Shiva Sri Charitable Trust (SSCT) to strengthen and up scale their school education model in Government Higher Primary Schools in Chitradurga and Davangere, and to conduct capacity building for the State Government to sustain the program. The school education model of SSCT has the following components - curricular and resource inputs in the form of Mathematics work books, writing booklets and learning map, motivational component in the form of Stars, formation of Student clubs and development of a Digital 'App' for student learning and teacher facilitation.

The Trust asked IT for Change to design and conduct an impact assessment of the program. Through a study of existing materials relating to the program, interactions with representatives of SSCT and Trust and field interactions with teachers, students and teacher educators, data relating to these components was collected. This document is a report of the impact assessment of the program, and is based on an analysis of the data collected.

The mathematics work books, writing booklets are given to students to provide them opportunities for working. Three work books and Three booklets were provided to each student in classes 4 - 7 in the schools. Three kinds of Stars were given by teachers to students to reward accomplishments in academic, co-curricular and larger school processes. Student clubs were set up in these schools to provided opportunities for students to play a larger role in school activities. SSCT designed and developed an 'app' using which, teachers can upload data pertaining to student completion of the work books, booklets and teacher educators can record data from school visits.

Based on the feedback from students, teachers and teacher educators, it seems that the students have used the mathematics work books and writing booklets for working on activities in mathematics and other subjects. Teachers and students have responded positively to the giving of stars for accomplishments in academic and co-curricular areas. Student clubs are reported to be providing opportunities for students for group learning and organising school events. The learning map and the digital app were not used and hence no feedback could be collected.

The scalability and sustainability of these components depends to a large extent to which these are integrated into the regular activities of the school and of school system (particularly teacher education). However, as reported by the teachers and teacher educators, the academic components are largely not integrated into the teachers current transaction and assessment processes. There is a need to review and strengthen teacher preparation and teacher educator capacity building for integration of the program components into the regular processes of the school.

The Star component requires further study by experts in education psychology and research to understand its larger and longer term implications. The app in its current design appears to support administrative monitoring than academic support.

2 Background

A grant of Rs. 50 lakhs for a one-year period from June 2016- May 2017 was given by Tata Trusts to Shiva Sri Charitable Trust (SSCT) to strengthen their school education model, up scale their student motivation programs in government Higher Primary Schools (approximately 1,500 schools) in Davanagere and Chitradurga districts of Karnataka, to all districts in the state, and to conduct capacity building for teachers and teacher educators to sustain the program effectively.

With the one-year grant coming to an end in May 2017, Tata Trust proposed an impact assessment of the grant is planned to understand progress in achieving (a) key outcomes / deliverables / objectives against the agreed milestone in the current context of program implementation and inform the Tata Trusts on key achievements, gaps and areas for improvement. The assessment was intended to cover all the components of the program, as well as identify pointers for upscaling.

IT for Change was asked to do the impact assessment in view of its experience in supporting systemic educational programs with the government education system, integrating technology. *While the grant document discusses the 'Technology' component, in a conference call with Tata Trust and SSCT representatives, it was decided that the impact assessment would cover all components of the SSCT program in the two districts. Hence, this report discusses all the components of the program.*

2.1 Scope of the evaluation

The components of the program being implemented by SSCT which were studied under this assessment are:

1. Curricular and resource inputs in the form of Mathematics work books, writing booklets and learning map, motivational component in the form of Stars, formation of Student clubs and development / provision of a digital 'App' for student learning and teacher facilitation

The scope of the project included an assessment of the educational dimensions of the various components, benefits perceived by the students and teachers of the program, identify the potential and challenges for upscaling, including teacher development and capacity building of the educational administration. The assessment also includes recommendations on strategies for upscaling.

The detailed Terms of Reference are provided in Annexure A.

2.2 Methodology and the process

As per the TOR, the following processes were planned and conducted for the assessment

1. Discussions with the representatives of the Tata Trusts to develop an understanding of the project background, trajectory and expectations
2. Discussions with SSCT representatives on program design, progress, status and challenges of project.
3. Review of documents provided by the SSCT to understand its programs and the status/ progress.
4. Brief review of relevant literature
5. Field visits in coordination with the SSCT field team, for data collection
    a. Interactions with teachers and students in six intervention schools in Chitradurga and Davanagere districts
    b. Interactions with teacher educators including DIET faculty, BRPs (Block Resource Persons) and CRPs (Cluster Resource Persons) in the two districts. The DIET Principals of both Chitradurga and Davangere, BRC of Hollalkere, few CRPs in both districts were met.

c. Discussions with the SSCT local team to understand the program implementation at field level

6. Interaction with Dr Kamala Mukunda, expert in the area of Education Psychology (and author of the book ‘What did you ask at school today?’)

3 Visit observations

This section details out the findings regarding project design and delivery for each of the core components of the program, as follows

1. Mathematics work books
2. Writing booklets
3. Learning map
4. Stars
5. Mobile phone App for student learning and teacher facilitation
6. Upscaling program

The basic design and the data collected for each component is provided in the table overleaf:

4 Program design and implementation

Program Component	Intent / assumptions of the program[1]	Implementation
Mathematics work books	1. Students are at different levels of learning. Supplementing / complementing materials can be developed in a 'multi-level' manner, so that all students can find learning resources for their own levels 2. Students require repeated practice work on areas 'taught' by the teacher, which can help to strengthen understanding of the learner	1. SSCT has designed 3 Mathematics work books (as the program began around November, it was for the second half of academic year). Each work book has 28 – 32 pages and the student is expected to complete around 1 page per day, and hence complete one work book per month. 2. The three work books are graded, with first book content largely relating to LPS arithmetic topics (classes 2 and 3 topics). Book 2 largely corresponds to class 3 and 4 topics while Book 3 largely corresponds to class 4 and 5 topics. 3. Students mostly work on these books during free periods (when teacher is not available) or after school hours (as homework). This is not part of the regular 'time tabled' school processes 4. Teachers provide the next work book on completion of one book. In some schools, 'student leaders' check the completion of the book and hand over the next book to the students in their group.
Writing booklets	1. Students require practice in writing (letters, simple and complex words, sentences, composition) and in drawing/ sketching, and in solving mathematics problems. 2. Copy writing can improve hand writing	1. SSCT has designed 1 practice writing booklet. Initial pages have script/numbers written with space for copy writing below. Some pages are blank (for drawing / sketching), some are single lined and some are three lined (for copy writing). 2. All teachers give work to students to do in the practice book. 3. Teachers provide the next booklet, on completion of one booklet. Up to 3 booklets can be given to a student. In some schools, 'student leaders' check the completion of the booklet and hand over the next booklet to the students in their group. 4. Students mostly work on these booklets during free periods (when teacher is not available) or after school hours. This is not part of the regular 'time tabled' school

1Based on discussions with SSCT team and field interactions

		processes.
Learning map	1. Providing the achievement of competencies' information by students, in simple and graphic manner, where a competency can be 'ticked off' once it is judged by the teacher to be acquired by the student, can help the student (and her/his parents, and other teachers) to understand the level of learning of the student and its progression over the academic year.	1. Learning maps have been provided for each class (5,6 and 7) by SSCT Foundation to all schools, one map for each student. 2. Learning maps have largely not been used by the teachers / students. 3. The proposed process of implementation is that once a student has attained a competency, the teacher will ask her/him to stick the sticker relating to that competency on the relevant place in the learning map. By the end of the academic year, if the student has attained all the grade level competencies, the learning map will be filled with all the stickers.
Stars	1. Motivation can have a positive correlation with learning outcomes. Students need to be motivated to work to learn. Providing rewards (which are notional though tangible) will motivate students to work hard. 2. Students require continuous encouragement and recognition of their work. An environment in which there is no positive stroking will lead to reduced levels of motivation. 3. Students who get the rewards will feel good and work harder. 4. Students who have not got the reward will want to work harder and get the reward 5. Students will want to get more rewards than other students and this competitive spirit will help all students to perform better over time.	1. SSCT provides 3 kinds 'stars' to schools - silver (for rewarding academic achievements), pink (co-curricular activities such as sports, music, cultural activities) and green (keeping school clean, being regular in attendance), to teachers to give to the students when they see achievements in the areas mentioned. 2. Teachers are encouraged to identify achievements in all students, in different areas. There is no 'quota' assigned to teachers or to schools. 3. The class teachers give away all the three kinds of stars while other teachers give the silver stars. Teachers (or students themselves) pin up the star using a safety-pin on their shirt. 4. Many students keep their stars pinned on their shirt, on the single safety-pin.
Student clubs	1. Students can play an active part in their own learning and peer support.	1. Student clubs are formed in each class, each club comprising around 10 students. One of the students (usually a 'bright student[2]') is designated as the student leader. The

2Meaning a student who performs well in the core school subjects

	2. Forming student groups and encouraging them to take up activities / responsibilities can help them in self learning and peer support. Students can help one another in academic and co-curricular activities. 3. It can develop leadership skills in students. It can improve their confidence in their abilities and initiative.	student leader is formally or informally tasked with the 'checking' the work of other students in the group, this may vary from only identifying students who have not completed the work, to checking their work and even correcting it. 2. Student clubs also can take up school activities including organizing events.
Mobile phone App for student learning and teacher facilitation	1. The 'App' is intended to collect data on student work, to support monitoring of student learning and use by teachers and department officials 2. Visits made to the school by the department officials can be recorded on the App 3. Information recorded can be viewed by officials on the phone and through the web	1. The app was not operationalised at the time of the visit. It was not ready for 2016-17 implementation. During 2017-18 student information was being updated in the student tracking database, and the operationalisation was waiting for that to be completed. Secondly some enhancements were also being developed in the App. 2. The proposed processes of implementation are as follows 1. Teachers will fill OMR sheets recording information on whether students have completed work books. 2. Teachers / schools (or CRP/BRP) will upload this data of student work 3. Officials will record information about school during their visit to the school 4. Information recorded can be accessed through the app, or from the website. Depending on the location of the user (at the school or cluster or block or district levels), she/he can see the aggregation of data for all students for her/his geographic area.

5 Observations and inferences

This section discusses feedback from the field visit and inferences drawn, for each program component.

5.1 Mathematics work books

5.1.1 Observations and feedback from participants

1. Teachers report that most students are working on and completing the work books[3]. They report that since the work book is at multiple levels, most students are able to work with these books. They felt that the practice of problems reinforced student learning.
2. The materials are largely seen by teachers as self learning materials with limited role for them. Most teachers expressed that individual assessment of workbooks and giving feedback would be a load they would not be able to manage. Some teachers admitted 'tick' marks may be put in a ritualistic manner without actually going through the content to identify errors and give feedback to each student. .
3. Some teachers assess the work of the 'student leaders' and expect the leaders to check the work of other students. Student leaders are expected by the teachers to follow up on completion of books in their group. In some cases, student leaders report cases of work not completed by students, in some cases, they 'correct' the work. Teachers are aware that students could either simply copy from their student leaders' work or that student leaders could tacitly encourage others to copy their work.

5.1.2 Inferences

1. These books can be potentially useful to provide a multi-level learning path for students where they can attempt the problems at their level. These can also be a source of understanding the learners' learning and challenges. Mistakes made, patterns of mistakes etc. can be analysed by the teacher to identify the conceptual gaps of each student, which can be followed up with appropriate teaching learning strategies. However, this requires the teacher to play an active part and provide feedback on completed work. Students practice, by itself may not be enough to realize this potential for learning as there is little scope for correcting any misconceptions that students may have.
2. Peer learning as a social educational process is very complex. Even if a student is 'ahead' she/he is unlikely to be in a position to understand the 'why' of a mistake made by another student and provide relevant feedback. Student feedback can be on simple aspects (on 'fact' or 'algorithm' based questions) where 'answer is correct' or 'answer is wrong' but cannot identify the conceptual gap that causes the wrong answer. It is the investigation of this 'wrong' answer that can enable the teacher to help the learner move ahead.
3. Teachers are not clear if the work books should serve as foundational learning materials that will help the student bridge gaps in their understanding or be tied to specific topics they are transacting for a given class. As per their views, if the material is foundational, it does not link with the regular transaction of the teacher. If the material is of the same grade, it would not provide opportunities to those students who have not learnt prior concepts, to catch up. Accordingly, some teachers were keen that the work books should be related to the content transacted in the grade, while others did not want this. Possibly, they do not have a shared conceptual understanding of the objectives of the work books.

3Comments based on the interviews with the teachers, students and officials. During the visit, there was no opportunity to see the students work on the Mathematics work books or the writing booklets.

5.2 Writing booklets

5.2.1 Observations and feedback from participants

4. While the mathematics teacher found the mathematics work book useful for practice (and foundational learning), all subject teachers found the booklets useful for students to write / practice. Work on mathematics problems, science diagrams, drawings, stories etc. were done by students on the booklets.

1. Other than the copy writing pages, rest of the booklet consists of blank pages (plain and ruled), which serves as a space for students to do work assigned to them.

2. Since the same writing booklet is given 3 times to the student, the copy writing at the beginning is done multiple times.

3. It was observed that there are tick marks without comments, on pages, where students have made errors in writing. Feedback on the written work was not given/observed.

5.2.2 Inferences

1. It is difficult to say if the repeated copy writing is helpful. It may serve to improve the mechanics of writing, but it may also be done mindlessly. In the case of copy writing, it is seen that the spaces between words reduces over the lines, suggesting fatigue.

5.3 Learning map

5.3.1 Observations and feedback from participants

Since the learning maps have largely not been used, teachers did not have any comments on these.

5.3.2 Inferences

1. The idea of a learning ‘map’ to record the learning of the student in a simple / graphical manner appears to be good. However, its implementation needs to be thought through carefully. This map is in addition to the student wise assessment information that each teacher is expected to maintain for each subject. It is likely that the teachers may see it as an additional task to mark the learning levels in the map for each student.

2. Since the learning map is dependent on text descriptions, text-illiterate parents would not be able to understand its meaning. At the higher primary school level, the ability to understand their ‘level of learning’ and therefore identify their position on the learning map, may be beyond the cognitive ability of many students.

5.4 Motivating to learn - Stars

5.4.1 Observations and feedback from participants

1. Teachers are in favour of giving ‘stars’. They saw an improvement in student participation in class activities. They reported improvement in student attendance, there are cases of students visiting houses of student’s who are absent for many days, to encourage them to come to school

2. Students mentioned that they like to get stars.

5.4.2 Inferences

The stars seem to serve as a method of teacher recognition of students’ work to motivate them. The issue of

motivation has been examined in educational psychology and through education research. While teachers were usually for giving stars, they had no shared understanding to following questions raised in discussions with them:

1. If all students are receiving stars, would it continue to motivate them. If a student receives a large number of stars, would it continue to motivate her/him as it did in the beginning (Is the last star received giving same encouragement as the 'first' star received')? If the program of giving stars continues year after year, will it have the same effect on students and on learning?
2. If some students are not receiving stars, would it have a negative impact on their motivation? These are likely to include students already marginalized in the learning processes, is this not adding to the inequity in the classroom.

The local SSCT team and the teacher educators also did not have a shared understanding on these issues

Educational Psychology

Dr. Kamala Mukunda, teacher and noted education psychologist is categorical about the challenges of using extrinsic motivational aids for children. In her book 'What did you ask at school today?[4]' and in interactions, she makes the following points:

1. Learning is its own reward. Learning needs to be its own reward. Providing an external reward for learning, can take away the intrinsic pleasure of learning
2. Research shows that when the child receives external reward for learning, she/he is not motivated to perform the activities of learning, without the reward later. Thus, short term motivation can cause long term de-motivation and damage the potential of the child to learn.
3. In a cohort of learners, rewarding some and not others is likely to discourage those who do not get the reward. This is because, the learning process is very complex and has many layers/pegs. When meaning making is individualized, a standard reward which is only based on the output can motivate / dissuade the students from participating in the learning. In the context of government schools, where many children come despite adverse home / socio-cultural contexts, not getting a star can become another de-motivator.
4. Teachers may also find giving rewards an easy way out for motivating. Instead, teachers should be taught how to make learning interesting and meaningful to support intrinsic motivation. (This is also stressed by National Curriculum Framework 2005). If the teaching methods are not enabling meaningful learning which the learner can also enjoy, giving stars will not serve as a meaningful solution.
5. Education wisdom and policy stresses on formative assessment (assessment for learning and assessment as learning). While a star suggests appreciation it does not spell out the 'why', and hence may not provide the formative support of how a student has done and can do better, which would be of help.

5.5 Student clubs

5.5.1 Observations and feedback from participants

1. There is a greater involvement of students in the school's activities and processes
2. Providing a space in which students can support one another and seek support of one another is useful.

4 Mukunda Kamala. 2009. What did you ask in school today?

Sometimes students may find it easier to take help from a peer than approach the teacher.

5.5.2 Inferences

1. The challenges in student leaders assessing the work of other students has been discussed earlier.
2. Assigning 'bright students' the role of leaders runs the risk of reinforcing existing hierarchies (in many cases certain students are considered 'bright' and others 'dull' based on performance in a limited set of areas/subjects) in the classroom.

5.6 Digital 'App' for student learning and teacher facilitation

5.6.1 Observations and feedback from participants

1. Since the App is not yet used by teachers and teacher educators, they could not share any experiences.

5.6.2 Inferences

1. The App has the functionality to capture student level information, but the data elements are at a very broad / gross level (the 'number of booklets completed by each student' is captured) and not qualitative enough to provide basis for meaningful diagnosis[5] and academic support.
2. The focus of the App appears to be more for administrative monitoring and not academic support. This can lead to a centralized system, where student level 'gross' data is collated at higher levels and used for monitoring. The App information is not very useful to a teacher, since academic processes cannot be supported by the data it provides, while it provides the data for administrative monitoring by department officials of activity completion. The challenge in using ICT as an aggregator to provide information to senior officials, is that it may end up pressuring schools and teachers (by creating league tables like is done in the case of SSLC district rankings). *An important design principle for ICT integration, is the extent of the support to decentralization and teacher autonomy and agency, whereas the app may end up strengthening centralized administration.*

6 Sustainability and up-scaling of the program

An important requirement of the Tata Trust support to the program was the creation of capacities in the department to up-scale the program to other districts, as well as mainstream program into departmental processes for sustainability. This aspect is discussed in terms of a few parameters that are important to look at for upscaling and sustainability.

6.1 Integration into school processes

1. The teachers were appreciative of the work books and the stars. They did not have any negative feedback on any component of the program, except their apprehension about being asked to assess the student mathematics work books and writing booklets. The support of teachers seems to be premised on the program being a stand-alone program which does not have any impact on their own regular work of teaching and assessing. Some teachers suggested that a separate teacher should be appointed to work on this program in each school. Some teacher educators felt that they would not be able to devote time to supporting the implementation of this program and suggested that the program itself should appoint such academic support personnel. Hence, the intent that the program activities should become integral part of the regular school processes is not shared by most teachers and teacher educators, they do not want this 'integration' which would increase their work load.

5See Annexure B for a specimen of the OMR data captured

2. One reason for this gap is perhaps that the teachers do not have a deeper understanding of the objectives of the program and the possibilities it offers for strengthening their teaching learning. The current 2 day training program may be serving more an orientation on the program features, than provide space for detailed discussions on the program design elements, pros and cons and different ways in which it could be possibly internalized and contextualized for different situations. It is also possible that the additional work load from the program may be more than what the teachers can process, and hence its inclusion may require the re-organizing or streamlining with other academic activities. For example, this could be integrated into the "bridge course" or form part of the regular Formative Assessment activity.
3. Another important aspect is to look at teacher development in a more integrated and holistic manner. Teachers should understand how multi level teaching works (it is not several single-level teaching activities), how to design practice materials which test different competencies, being able to connect with one another to discuss new strategies for supporting learning of students and one another. This is broader than being trained to understand and implement a specific program.

6.2 Teacher : class ratio

1. Given the state policy to provide a HPS within 3 kilometres of every habitation, small schools are inevitable due to smaller catchment areas. Since policy stipulates a teacher-pupil ratio and not a teacher-class or teacher-sections ratio, the teacher : class ratio tends to be adverse in primary schools; the number of teachers is usually lesser than the number of sections[6]. This is more so when the school strength is small (less than 100 students). Given the RTE requirement of 1:30 TPR, such higher primary schools (having classes 1 – 7 or 1 – 8) are usually provided a maximum of 3 teachers for seven/eight sections. This means the teacher is expected to be teaching in all periods and expected to work with multiple classes simultaneously, with little time to prepare for teaching. While multi-grade classrooms are used as a solution to address this issue load, it requires richer pedagogies and multi-level materials for effective teaching. In the absence of either, the quality of learning is likely to be affected[7].
2. Detailed planning of the implications of work book and practice booklets is required, in terms of teacher deployment and work load, to facilitate effective implementation and ensure that adequate teacher time is available for supporting student learning. If teachers are unable to manage the work load, the risk is that they may go through the rituals of giving the books and booklets to students to fill up, without providing required feedback for learning. The time required for filling the OMR sheets and uploading this data on the server needs to be assessed, in conjunction with the existing work loads of teachers and teacher educators. In all the schools visited, the number of teachers was less than the number of sections, thereby prima facie requiring that teachers be teaching the whole day, and also making time for assessments, filling up CCE (Continuous and comprehensive evaluation) and other student and school records.

6.3 Integration into teacher education

1. Monthly, bi-monthly meetings are reported to being held to review program implementation at block and district levels and discuss program implementation (administrative) issues[8]. Academic issues and doubts (usually concerning the work books) are referred by the SSCT field team to their Bengaluru office for

6As per DISE 2013-14, the average number of teachers in primary schools in Karnataka is 2.3. it is for 4.1 for government schools, 6.4 for aided schools and 8.6 for unaided schools. For Kerala, the comparable figures are 5.9, 14.0, 16.0 and 21.4 respectively. See Annexure C

7 Rohit Dhankar. 2002. Seeking quality education for all - experiences from the District Primary Education Programme. (page 12-13). Discusses the use of multi-grade approach for economic rather than academic reasons

8Again, as reported during the field visit interactions

clarifications, there seems to be limited capacity at the district, block, cluster and school levels to address academic issues of teachers in this regard.

2. Teacher educators are by and large supportive of the program. However, they seem to not have fully considered the practical implications of the work books and practice booklets. For instance to the question of how teachers would be able to take on additional work book /booklet assessment work, they were unable to come up with specific considered responses and made it dependent on the willingness of teachers. They were happy about the 'stars' and felt it encouraged student participation and learning. However, they also did not have a common understanding of the challenges associated with stars.
3. The BRPs and CRPs mentioned that they could not find time to actually review the student work in their visits to the schools and focused largely on 'completion' of the work books. This is because they are expected to monitor several programs of the department in the school and have to divide the visit day across these activities. This means they are able to provide administrative monitoring rather than academic support, which would involve much deeper engagement with the work of the students and the teachers in each school.

Since integrating the teacher support activities into teacher education is an important factor for sustainability of the program, these issues need to be addressed.

7 Recommendations

7.1 Program design

Based on our observations and inferences on the program design, implementation, following are our recommendations:

1. Study and streamline the academic processes. The work book, writing booklet and learning map need to be integrated into the current academic activities including assessments. Teacher autonomy is required in deciding the level of use of the workbooks and booklets, at which these can be integrated into her/his regular teaching (including assessment) duties.
2. The stars component need to be carefully studied by experts in education and education psychology and by conducting in-depth research (and drawing on existing scholarship) before taking it forward.
3. Student clubs for different activities are useful and need to be activated in all schools, to increase the role and participation of students in their own learning. However, the responsibilities assigned to members needs to be carefully planned based on their capabilities. (Peer assessment or peer teaching needs more deliberation on its scope and nature). If the role of 'student leader' is rotated amongst students, it could encourage all students over time, to take on the role of student facilitators, and it would focus on processes of organising rather than the assessment of academic work of peers.
4. The scope of the digital App needs more consideration. Detailed student information on performance which could help in diagnosis and identifying student academic support is not a part of the App functionality. Detailing student performance for providing academic support is quite difficult to do through an App, and it also will be very difficult to 'aggregate' such academic information for district and state level monitoring. Hence the app becomes more for 'administrative support and facilitation' than for academic support. The use of the App should be to support local planning and review, rather than centralize the analyses and decision-making, which can reduce teacher and school autonomy.

7.2 Scalability and sustainability

1. Integration into TE requires capacity building of the teacher educators in terms of processes of learning and the appropriate use of multi level learning. Teacher educators should be supported in the use of technology tools for developing methods of interacting with teachers, answering their queries, etc.
2. It may be more scalable and sustainable for an NGO like SSCT to work with the teacher educators (DIET faculty) and build their capabilities to prepare the work books (instead of directly producing and providing work books to schools). Working with DIETs can enable district-specific work books based on local needs and contexts, and reflect local language and cultural aspects for better use for supporting learning. The MHRD 1995 DIET guidelines had recommended that DIETs should develop district specific text books. While text books are the same throughout the state, work books need not be.
3. Secondly, working with teacher educators (CRPs) to build their capacities to provide academic support to schools could be a more scalable and sustainable approach. Currently neither CRPs nor the SSCT mentors are able to provide academic support on the program components to the school. Teachers, CRPs and BRPs suggested that the SSCT Mentor should provide academic support for the program, since they were 'too busy'. It should be noted that academic support is different from 'monitoring'. While monitoring aims to encourage the teacher to comply with the program requirements, 'academic support' consists of understanding the academic challenges faced by teachers in implementing the program, and working with the teachers to address these[9].

8 Field visit schedule

Date	District	School / Institution	Met
17. Aug. 2017	Chitradurga	SSCT office	Shambhu and SSCT team
17. Aug. 2017	Chitradurga	GHPS Jatpatnagar	Head teacher and Mathematics teacher, CRP
17. Aug. 2017	Chitradurga	DIET Chitradurga	DIET Principal and faculty
17. Aug. 2017	Chitradurga	GGHPS Hollalkere	Teachers, BRP
17. Aug. 2017	Chitradurga	BRC Hollalkere	BRPs
18. Aug. 2017	Davangere	GHPS Nituvalli	Teachers, DIET Principal, BRP, CRP
18. Aug. 2017	Davangere	GHPS Alur Hatti	Teachers
18. Aug. 2017	Davangere	GHPS Anagodu	Teachers

9 References / bibliography

9.1 Supporting material from the program

1. Mathematics work books
2. Writing booklets
3. Learning Maps

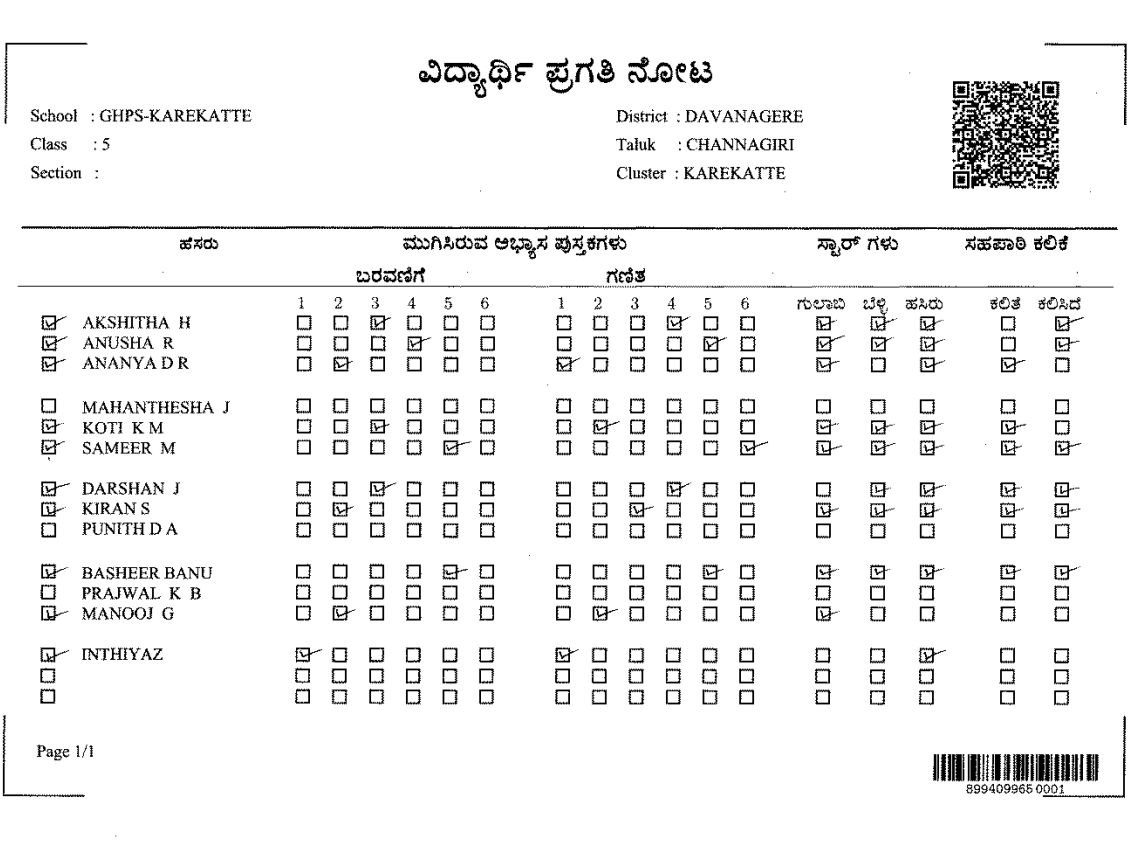
9Batra Sunil. (2003). From School Inspection to School Support: A Case for Transformation of Attitudes, Skills, Knowledge, Experience and Training. Management of school education in India

4. Stars
5. Training material
6. App (installed on my cell phone)

9.2 References

1. Batra Sunil. (2003). From School Inspection to School Support: A Case for Transformation of Attitudes, Skills, Knowledge, Experience and Training. *Management of school education in India*
2. Dhankar Rohit. 2002. Seeking quality education for all - experiences from the District Primary Education Programme
3. Montessori Maria. 1982. The secret of childhood
4. Mukunda Kamala. 2009. What did you ask in school today?

10 Annexure B – OMR sheet for capture of data



ವಿದ್ಯಾರ್ಥಿ ಪ್ರಗತಿ ನೋಟ

School : GHPS-KAREKATTE
Class : 5
Section :

District : DAVANAGERE
Taluk : CHANNAGIRI
Cluster : KAREKATTE

ಹೆಸರು	ಮುಗಿಸಿರುವ ಅಭ್ಯಾಸ ಪುಸ್ತಕಗಳು												ಸ್ಟಾರ್ ಗಳು			ಸಹಪಾಠಿ ಕಲಿಕೆ	
	ಬರವಣಿಗೆ						ಗಣಿತ										
	1	2	3	4	5	6	1	2	3	4	5	6	ಗುಲಾಬಿ	ಬೆಳ್ಳಿ	ಹಸಿರು	ಕಲಿತೆ	ಕಲಿಸಿದೆ
AKSHITHA H			✓							✓			✓	✓	✓		✓
ANUSHA R				✓							✓		✓	✓	✓		✓
ANANYA D R		✓					✓						✓		✓	✓	
MAHANTHESHA J																	
KOTI K M			✓					✓					✓	✓	✓	✓	
SAMEER M					✓							✓	✓	✓	✓	✓	✓
DARSHAN J			✓							✓				✓	✓	✓	✓
KIRAN S		✓							✓				✓	✓	✓	✓	✓
PUNITH D A																	
BASHEER BANU					✓						✓		✓	✓	✓	✓	✓
PRAJWAL K B																	
MANOOJ G		✓						✓					✓				
INTHIYAZ	✓						✓								✓		

Page 1/1

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11 Annexure C - Average number of teachers in schools

State/UT	Average Number of Teachers per School*															
	All Schools			Primary Schools			All Government Schools			All Aided Schools			All Unaided Schools			All Unrecognised Schools[z]
	2011-12	2012-13*	2013-14*	2011-12	2012-13*	2013-14*	2011-12	2012-13*	2013-14*	2011-12	2012-13*	2013-14*	2011-12	2012-13*	2013-14*	2013-14*
A & N Islands	12.6	11.6	11.6	4.6	4.2	3.9	13.6	12.5	12.3	35.5	37.5	37.0	10.3	8.3	8.7	-
Andhra Pradesh	5.3	4.9	5.1	3.3	2.8	2.9	4.4	3.9	4.2	4.9	4.4	4.2	13.2	7.8	8.1	5.8
Arunachal Pradesh	4.3	4.6	5.3	2.1	2.1	2.3	3.7	4.1	4.6	11.6	8.0	9.0	19.8	9.9	10.6	6.8
Assam	3.9	4.5	4.5	2.4	2.8	2.8	3.4	4.2	4.1	7.1	7.2	7.2	17.7	9.5	11.2	3.1
Bihar	5.0	5.1	5.5	3.4	3.1	3.2	5.0	5.0	5.2	5.8	8.6	9.9	14.0	12.7	10.2	8.9
Chandigarh	29.2	40.0	44.6	10.7	12.9	17.7	26.7	37.6	43.3	26.0	34.4	36.4	8.4	44.3	47.3	-
Chhattisgarh	3.8	3.9	4.0	3.2	3.1	3.0	3.4	3.3	3.4	5.0	5.5	6.1	7.3	8.6	9.3	3.2
Dadra & Nagar Haveli	5.0	6.0	6.2	2.1	2.3	2.5	4.1	4.7	4.7	4.9	5.9	6.4	12.1	18.4	19.1	-
Daman & Diu	7.3	8.3	10.6	5.2	5.1	5.6	5.0	5.7	7.5	18.5	34.0	41.3	20.7	14.8	17.7	-
Delhi	16.4	23.5	24.3	10.8	10.3	10.0	15.6	24.3	26.6	10.7	19.9	19.7	5.4	22.9	22.0	-
Goa	5.6	7.2	7.4	2.7	2.9	2.8	3.1	3.3	3.6	11.5	16.2	15.7	4.3	10.6	10.1	-
Gujarat	6.7	7.1	7.2	2.9	3.0	3.0	6.2	6.1	6.1	5.7	9.4	9.6	9.0	10.9	11.3	19.7
Haryana	6.9	8.0	8.4	4.3	4.3	4.1	5.5	6.1	6.2	10.2	13.0	13.5	8.3	12.2	13.4	7.5
Himachal Pradesh	3.8	5.0	5.1	2.6	2.5	2.5	3.1	4.2	4.2	7.4	8.0	8.0	12.7	9.7	10.3	4.5
Jammu & Kashmir	5.0	5.2	5.4	2.4	2.4	2.4	3.9	4.1	4.1	**	**	**	13.5	10.6	11.0	-
Jharkhand	3.7	3.7	3.7	2.1	2.1	2.0	3.1	3.1	3.0	5.8	5.6	5.2	7.2	13.0	15.1	7.4
Karnataka	5.5	5.0	5.1	2.3	2.3	2.4	4.5	4.1	4.1	7.4	6.5	6.4	7.5	8.3	8.6	4.8
Kerala	11.8	14.1	15.7	6.2	6.1	5.9	10.3	12.3	14.0	12.6	14.4	16.0	8.4	17.7	21.4	9.8
Lakshadweep	19.5	18.8	20.3	13.1	12.3	11.7	19.6	18.8	20.3	**	**	**	**	**	**	-
Madhya Pradesh	3.2	3.3	3.5	2.4	2.4	2.5	2.4	2.4	2.5	3.9	4.3	4.6	7.2	6.8	7.9	3.6
Maharashtra	5.4	6.6	6.7	3.0	3.0	3.0	4.1	4.3	4.0	9.1	15.2	14.9	8.5	10.0	10.4	5.3
Manipur	7.0	7.5	8.0	4.5	4.4	4.3	6.0	6.3	6.3	3.0	4.0	4.3	9.7	14.5	16.4	9.6
Meghalaya	3.2	3.2	3.3	2.5	2.5	2.5	2.9	2.9	2.9	3.5	3.2	3.5	12.7	4.6	4.9	2.8
Mizoram	6.3	6.3	6.4	4.6	4.5	4.2	6.0	6.0	5.6	8.3	8.1	8.0	8.2	8.5	9.5	8.7
Nagaland	6.5	7.4	8.6	4.8	5.4	6.1	4.8	5.9	7.1	**	**	**	9.3	12.8	13.9	-
Odisha	4.0	4.0	4.2	2.5	2.5	2.6	3.5	3.5	3.7	5.4	5.5	5.3	6.4	9.6	10.0	9.1
Puducherry	15.9	16.6	15.8	5.6	5.9	5.1	12.1	12.5	11.2	29.2	30.8	30.3	10.3	21.9	21.9	-
Punjab	6.9	7.6	8.1	3.1	3.4	3.4	5.3	5.9	6.3	10.5	10.7	11.2	15.2	13.5	13.2	6.3
Rajasthan	4.3	5.0	5.1	2.1	2.2	2.3	3.4	4.0	3.9	7.2	8.1	**	3.9	7.6	8.1	3.0
Sikkim	9.3	9.7	10.2	5.0	5.1	5.3	9.5	10.2	10.8	13.0	69.0	50.3	33.3	8.2	8.5	-
Tamil Nadu	6.0	8.4	9.0	4.0	3.9	4.1	4.1	5.6	5.9	6.6	9.7	9.8	9.6	16.6	18.3	12.5
Tripura	7.1	8.9	9.0	3.6	3.7	3.7	6.9	8.5	8.7	7.9	28.6	28.3	8.1	13.6	14.6	3.0
Uttar Pradesh	3.6	4.0	4.1	3.7	3.7	3.6	3.3	3.4	3.3	4.7	7.7	8.7	13.1	4.8	5.1	4.3
Uttarakhand	3.2	4.0	4.2	2.5	2.6	2.7	2.5	3.3	3.5	5.1	7.0	7.8	6.8	6.1	6.2	4.2
West Bengal	5.8	5.7	5.7	3.9	3.8	3.8	5.5	5.4	5.3	8.6	8.3	8.6	8.2	7.4	7.6	7.3
All States	**4.7**	**5.1**	**5.3**	**3.1**	**3.1**	**3.1**	**4.0**	**4.2**	**4.2**	**7.4**	**9.8**	**10.3**	**7.3**	**8.1**	**8.8**	**5.8**

* : Including teachers in Secondary and Hr. Secondary sections in composite Elementary schools.
z : May not present complete coverage of such schools/madrasas.
** : State does not have such school type.