APPENDIX

1. CONTENTS

1. TERMS OF REFERENCE

Evaluation of Activity-Based Learning as a means of Child-Friendly Education

Terms of Reference

1. Background and Rationale

With the enactment of the The Right of Children to Free and Compulsory Education Act, 2009 (RTE), states across India have a mandate to provide free and compulsory quality education to all children. The Act mandates that elementary education must involve child-friendly and activity-based learning processes, must ensure equity and inclusion of every child, and promote an environment that is free from fear, anxiety, discrimination, corporal punishment or mental harassment to any child. However, research shows that many classrooms are still a long way from achieving this vision. ASER's recent study of 900 rural government schools in 5 states reveals that not only are learning levels far from satisfactory, but that although teachers understand the importance of 'child-friendly' practices, in reality child friendly processes were rarely observed in primary classrooms (ASER 2011).

In this context, Activity-Based Learning has emerged as one potential model for helping achieve the goals of RTE. Over the last decade or so, states across India have been piloting and up-scaling various versions of Activity Based Learning (ABL), also known as Multi-Age Multi-Level (MAML) or Multi-Grade Multi-Level (MGML) programmes – now covering over 250,000 primary schools across the country and more than 10 million children in over thirteen states. Three of these states (Andhra Pradesh, Karnataka & Tamil Nadu) have already expanded the programme to all government primary schools in their state. In addition, two other states (Chhattisgarh & Madhya Pradesh) are already covering more than 15,000 schools with this methodology.

At various levels from students, teachers, parents and education officials, the ABL programme has been appreciated in creating a more child-friendly learning environment. Some reports have also shown marked improvement in children's learning levels in ABL/ MAML pilots. Based on the overall positive feedback and visible changes that have emerged in ABL pilots, UNICEF has been supporting the expansion of ABL/ MAML pilots in different states as part of its mandate to improve education results for children across India. However, till date there has been no systematic multi-state review that consolidates evidence of the impact of ABL programmes, both on children's cognitive and non-cognitive learning outcomes, as well as on the nature of classroom processes and relationships.

In 2011 UNICEF commissioned a desk review to synthesise findings of available research studies that have examined the impact of ABL on children and classrooms. However all the studies conducted so far have been in single states, each using different tools which makes it difficult to consolidate findings across states. Moreover, the reports available are mostly from Tamil Nadu since this is the state where ABL has been implemented on the largest scale for the longest time (NCERT 2011, EdCIL 2010, Akila 2009, Shukla 2009, Schoolscape 2008, Anadalakshmy 2007). Only a few reports were available from other states like Karnataka (CMDR 2010, Kaul 2004, Usha 2004, Lalitha 2003), Assam (Deka 2009, ORG 2005), and a few internal field monitoring reports from

UNICEF-supported pilots in Chhattisgarh, Jharkhand, and Madhya Pradesh. The only larger-scale multi-state study conducted was Education Initiatives' 2007 evaluation of the Quality Package Project implemented by Govt. of India and UNICEF across 13 states; however this study looked only at the academic outcomes of children in language and maths, and not at non-cognitive outcomes or process outcomes.

Much of the above available research has several limitations: some of them are general reports based on impressions rather than rigorous evidence, many do not track improvement in ABL schools over time against a baseline, do not compare ABL schools with non-ABL schools, or focus only on a limited range of subjects or only on cognitive outcomes. There is need for further examination of ABL's impact on children's non-cognitive outcomes, on higher order skills, for examining the ABL curriculum and approach in light of NCF 2005 and RTE, exploring issues of equity and social inclusion, discrimination & corporal punishment, exploring the perspectives of children themselves, as well as the impact of ABL on teachers' attitudes, beliefs and professional development.

Besides the paucity of research evidence available, whatever research is available thus far on ABL's impact in fact reveals a mixed picture. While many reports do note that ABL/ MAML programmes have had positive effects in improving children's learning processes and outcomes, some studies have called into question whether children in these programmes are indeed learning better. Studies like ASER (2006-10), Akila (2009) and NCERT (2011) have highlighted some concerns about Tamil Nadu children's learning levels in reading, maths and English, and particularly about whether children are able to maintain an age-appropriate pace of learning over the 4-year primary cycle. For example, while Akila (2009) found that 80% of Tamil Nadu children who attempted the tests scored middle or high scores, she also found that at the end of Class 4, only 4% children are at the age-appropriate level in English (i.e. working on Ladder 4 items), only 33% in Maths and 45% in Tamil.

In light of the limited and inconclusive evidence available at present, there is need for a stronger evidence base across states that can provide a clearer and more holistic understanding of the impact of ABL/MAML compared to traditional methods of teaching. As states seek effective strategies for achieving the goals of RTE, and as more and more states continue to pilot and expand ABL/MAML programmes, it is important to take stock of how successful has been the implementation of ABL/MAML programmes in various states, what has been the comparative impact of ABL/MAML methods on classroom processes, relationships, and outcomes for children, and what are the areas that still require further strengthening. This is essential in the quest to determine what methods demonstrate the best strategies for meeting RTE's goals of improving educational processes and outcomes for children.

2. Purpose of the Research Activity

The following are the objectives of the study:

- To undertake a comprehensive evaluation of UNICEF-supported ABL/MAML programmes in 7 states
- To assess the comparative impact of ABL/MAML versus traditional teaching methods on both cognitive and non-cognitive learning outcomes of children in different states

- To determine the impact of ABL/MAML methodologies compared to traditional teaching methods on the nature of classroom processes and relationships in light of the goals of RTE and NCF 2005, including child-friendly constructivist processes, continuous assessment, social interaction & inclusion of children, elimination of discrimination & corporal punishment
- To identify areas that need further strengthening in the way that ABL/MAML is understood and implemented at various levels in different states
- To build capacity of state and district level government functionaries to assess and strengthen their own ABL programmes, by involving them at all stages of the research process

3. Scope of the Research Activity

Research Questions

Below are the key research questions to be explored in the study:

Relevance:

1. What is the nature of learning processes & relationships in ABL classrooms compared to non-ABL classrooms, and to what extent are these aligned with the goals of RTE 2009 and NCF 2005?
   (eg. child-friendly & constructivist processes, social inclusion & equity, discrimination, corporal punishment, classroom management, continuous assessment, group/ peer learning, interaction between children, nature of relationships, etc.)

Effectiveness:

2. How is ABL being understood and implemented on the ground, vis-à-vis the pedagogical model as intended by educational planners, and are there areas that need strengthening in its understanding or implementation?

Efficiency:

3. How well have the logistics of ABL been managed in each state (in terms of efficient use of resources and timeliness of funds release, trainings, delivery of materials, academic support to schools, etc.)?

Impact:

4. What has been the impact of ABL in improving learning outcomes and reducing achievement gaps, compared to non-ABL schools?

5. What has been the impact of ABL on non-academic outcomes for children?
   (eg. enrolment, attendance, participation, retention, confidence levels, higher-order skills, creativity, socio-emotional development, co-curricular areas, health and nutrition, use of sanitation & hygiene facilities, etc.)

6. What are the key factors that influence ABL's impact on children (or lack thereof), related to ABL processes themselves, implementation rigour, contextual factors and/or child-related factors?

Sustainability:

7. What has been the response towards ABL by different stakeholders? (eg. children, teachers, HMs, parents, community, education personnel, teacher unions, SCERT)

8. Have the principles of ABL been internalized by teachers themselves, and imbibed into mainstream curricula and teacher education programmes?

9. What are the key factors that influence the system adoption and sustainability of ABL programmes, and what steps can be taken to increase likelihood of sustainability?

In light of the above research questions, the following sub-questions, outcome indicators and research methods are proposed, outline in the Evaluation Framework below:

Key Questions	Sub-Questions	Indicators	Methods
1. What is the nature of learning processes and relationships in ABL classrooms compared to non-ABL classrooms, and to what extent are these aligned with the goals of RTE and NCF 2005?	a. To what extent are ABL materials and processes child-friendly, constructivist, encouraging interactive peer learning, etc. as per RTE and NCF 05 goals? b. What is the nature of relationships and classroom managemen in ABL classrooms, and to what extent do these reflect values of inclusion, non-discrimination, respect for children?	• Theoretical underpinnings of advocated ABL model and materials • Degree and spread of advocated changes visible in classroom processes & relationships	• Review of ABL materials • Classroom observations (quantitative & qualitative) • FGD/activities with children to elicit views on classroom relationships • FDGs with teachers and parents
2. How is ABL being understood and implemented on the ground, vis-à-vis the pedagogical model as intended by	a. How is ABL understood by stakeholders at various levels (education planners, SCERT, SSA, DIETs,	• Understanding of ABL by teachers, administrators, trainers, officials, planners • Degree and spread of	• Interviews w/ SSA officials, SCERT, DIET, BRC/CRC, teachers • School & classroom observations • Brief informal review

Key Questions	Sub-Questions	Indicators	Methods
educational planners? Are there areas that need strengthening in its understanding or implementation?	Trainers, Monitoring officials, teachers, HMs)? Are there differences/ inconsistencies across different levels? b. Is ABL being implemented on the ground as intended by education planners? c. What are the gaps if any, reasons for the gaps, and areas that need strengthening in its understanding or implementation?	intended ABL processes seen on the ground (classroom organization, use of materials, & classroom processes) • Consistency between intended model and ground implementation	of ABL training modules, training processes, and process of implementation
3. How well have the logistics of ABL been managed (in terms of efficient use of resources and timeliness)?	a. What have been the costs of rolling out ABL programmes, and how effectively have resources been used? b. How timely have been the funds release, trainings, delivery of materials, academic support to schools, etc.?	• Use of resources • Timeline of implementation	• Review of costs and expenditure • Interviews w/ SSA officials, SCERT, DIET, BRC/CRC, teachers
4. What has been the impact of ABL in improving learning outcomes and reducing achievement gaps, compared to non-ABL schools?	a. Is there any difference in learning outcomes between ABL and non-ABL schools, or significant changes in learning over time against a baseline? b. Does ABL have any impact on students' conceptual	• Learning Achievement of students in ABL & non-ABL schools, at beginning & end of year • Differences in achievement by gender, social groups, etc.	• Achievement tests in Lang, Math, EVS, including items on higher order thinking • Analysis of children's portfolios/ movement through ladder • Comparison of ABL & non-ABL schools, & of highest & lowest performing ABL

Key Questions	Sub-Questions	Indicators	Methods
	understanding & higher order thinking? c. Has ABL had any impact on achievement gaps based on gender, social groups, school-type/size, locality?		classrooms
5. What has been the impact of ABL on non-academic outcomes for children?	a. Has ABL had any impact on the enrolment, participation, attendance and retention of children in schools? b. Has ABL had an impact in non-academic outcomes for children, such as confidence levels, students' enjoyment & engagement in learning, higher-order skills, creativity, socio-emotional development, co-curricular areas, health and nutrition, use of sanitation & hygiene facilities, etc.)?	• Changes in enrolment, attendance & retention trends in states/districts which have up scaled ABL in recent years • Identifiable impact of intended ABL processes on non-academic outcomes • Focus in ABL schools on co-curricular areas, health & nutrition, sanitation & hygiene	• Data on enrolment, attendance and retention in ABL states/ districts • Focus Group Discussions with teachers, parents, children • Specific test items/ activities for assessing children's creativity, higher order thinking, confidence, etc. • School observations & informal interactions w/ teachers & children
6. What are the key factors that influence ABL's impact on children (or lack thereof), related to ABL processes	a. Are there any correlations between specific ABL processes and improved learning outcomes? b. Are there differences	• Identifiable impact of intended ABL processes on learning outcomes • Impact of implementation rigor or other contextual	• Comparison of highest & lowest performing ABL classrooms • Quantifiable observable indicators of ABL processes • Interviews w/ SSA

Key Questions	Sub-Questions	Indicators	Methods
themselves, implementation rigour, contextual factors and/or child-related factors?	between the highest and lowest performing ABL classrooms in terms of implementation rigour, contextual factors and/or child-related factors?	factors • Impact of child-related variables such as starting ability, SES, gender, etc	officials, SCERT, DIET, BRC/CRC, teachers • Collecting information on children during learning assessments
7. What has been the response towards ABL by different stakeholders?	a. What are the views on ABL of children, teachers, HMs, parents, community, education personnel, teacher unions, SCERT? b. To what extent is there ownership and concensus among different stakeholders regarding the desirability of ABL?	• Various stakeholders' stated perceptions of ABL	• FGD/activities with children • Interviews/ FDGs with teachers, HMs, BRC/CRC, DIETs, SCERT, • FGDs with parents, community, teacher unions
8. Have the principles of ABL been internalized by teachers themselves, and imbibed into mainstream curricula and teacher education programmes?	a. Has ABL made any impact on teachers' education-related attitudes, beliefs & understanding? b. Have ABL principles been incorporated into curricula and training programmes?	• Teachers' beliefs/ views in ABL vs. non-ABL schools • Extent of integration of school curricula and teacher education programmes with ABL principles	• Surveys for teachers in ABL & non-ABL schools • Teacher interviews • Discussions with SCERT/SSA, educationists, and informal review of school and teacher education programs
9. What are the key factors that influence the system adoption and sustainability of ABL programmes, and	a. In those states where ABL has or has not been upscaled and/or sustained over years, what factors are perceived to have	• Various stated perceptions of ABL's sustainability	• Interviews with SSA, SCERT, educationists

Key Questions	Sub-Questions	Indicators	Methods
what steps can be taken to increase likelihood of sustainability?	influenced its sustainability? b. Are there any serious threats to ABL's continuity in each state?		

4. Methodology

The study seeks to review the impact of ABL methodology on classrooms and children in comparison to non-ABL schools, and thus subscribes to an educational effectiveness research design. A mixed method approach is expected to offer a more comprehensive and nuanced understanding of various dimensions of ABL's implementation and impact in different states. Thus the design involves a combination of quantitative and qualitative methods, including a quasi-experimental survey design with a small longitudinal component.

The study is conceptualised with three stages of data collection. Stage 1 involves an initial exploration of ABL materials, training modules, and discussions with different stakeholders at state/district/sub-district levels in each of the 7 states, in order to understand the nature of the advocated ABL model in each state and how it is understood at different levels. Stage 2 is a large-scale exploration of 840 schools in the 7 states, including achievement surveys and classroom observation checklists in both ABL and non-ABL schools at the beginning of the academic year, providing a baseline and basis for further investigation. Stage 3 involves an end-line study following up from the baseline, as well as a more in-depth qualitative study of the nature of classroom processes and relationships in a smaller sub-sample of the highest-performing and lowest-performing ABL classrooms selected from Stage 2, in order to identify factors contributing to success and areas for further strengthening.

Stage 1

Method	Purpose (Research Question Answered)
1. Review of ABL Training Modules, ABL Ladders and sample ABL materials from different states	To understand nature of ABL materials and processes, their alignment with NCF & RTE (1a), and for preparation of Research Tools and Achievement Tests
2. Interviews/FDGs with SSA officials, SCERT, DIET, BRC/CRC, community members, teacher unions	To understand the nature of the advocated ABL model in each state (1a, 2a), how ABL is understood at different levels (2a), differences across levels if any (2b), process of implementation, reasons for gaps, areas that need strengthening (2c), costs, logistics and implementation rigor (3, 6b), different stakeholders' views on ABL (7), and issues of integration and sustainability (8, 9)

Stage 2

Method	Purpose (Research Question Answered)
1. Achievement tests in Class 2 Language & Maths, and Class 4 Language, Maths & EVS, in ABL and non-ABL schools	To see ABL's impact on learning outcomes (4a, 4b), and in reducing achievement gaps (4c), and examine child factors that correlate with achievement (6b)
2. ABL classroom observations using a quantifiable observation checklist	To explore quality of implementation of ABL processes (1b, 2bc, 6b), correlations between ABL processes & learning outcomes (6a)
3. Surveys for teachers in ABL & non-ABL schools	To explore attitudes, beliefs & educational understanding of teachers in ABL vs. non-ABL schools (8a)
4. Data on enrolment, attendance and retention in ABL states/ districts/ schools if available	To see impact of ABL on children's enrolment, participation, attendance and retention (5a)

Stage 3

An initial analysis will be conducted of data obtained from stage 2, in order to identify:

- 15% highest and 15% lowest performing schools, based on learning outcomes (to help isolate what factors/ processes most contribute to higher student performance, thus highlighting key attributes to be prioritised for improving student outcomes)
- 15% highest and 15% lowest performing schools, based on ABL process indicators reflecting implementation rigour (to help isolate what impact can be seen in well-functioning ABL schools, and what are the factors contributing to better or poorer implementation of ABL in a school)

These will form a sub-sample of approximately 30-40 schools per state (assuming there may be some overlap between the two categories), in 7 states (total approx. 250 schools) for a more in-depth qualitative study of the nature of ABL classroom processes and relationships, and of different stakeholders' understanding of ABL and response towards ABL, including the following:

Method	Purpose (Research Question Answered)
1. Second Round of Achievement tests in Class 2 Lang & Maths, and Class 4 Lang, Maths & EVS, in sub-sample of ABL schools and selected non-ABL control schools	To compare the extent of learning improvement over an 8-mth period in selected ABL vs. non-ABL schools, and in high-performing vs. low-performing ABL classrooms (4), and to identify factors that influence ABL's impact (6)
2. In-depth qualitative observations of highest- and lowest-performing ABL classrooms	To explore nature of classroom management, processes & relationships as per NCF/ RTE (1ab), and other non-academic outcomes for children (5b)

3. Group Discussions and/or activities with children (Class 4)	To elicit children's views on ABL (7), on classroom relationships (1b), and to assess non-academic outcomes such as confidence, creativity, enjoyment of learning, social skills, etc (5b)
4. Analysis of children's portfolios/ movement through ladder	To assess learning progress over time (4a), and non-academic outcomes (5b)
5. Interviews with teachers and parents	To elicit teachers' & parents' views on ABL (7), on classroom processes & relationships in ABL (1b), on non-academic outcomes for children (5b). To explore factors contributing to high-performing vs. low-performing ABL schools (6)

5. Sampling

The study is proposed to be carried out in 7 out of the 13 states where UNICEF has been supporting ABL programmes (Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu and West Bengal). The selection of states would be subject to considerations of the coverage and duration of states' ABL programmes, states' willingness to participate, costs and available resources, and ensuring adequate diversity in the sample. Based on these considerations, the suggested states tentatively proposed are: Andhra Pradesh, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Rajasthan and Tamil Nadu.

The scale of implementation of the ABL programme varies considerably across states. Some have implemented ABL in more than 20,000 schools (Andhra, Chhatt, Kar, TN), some between 2,000-20,000 schools (Guj, MP, Mah, Raj), and some have less than 1000 schools covered by ABL (Assam, Bihar, Jhar, Ori, WB). Moreover, the geographical spread also varies considerably, with some states having covered all schools (Andhra, Kar, TN), some states having covered selected schools in all districts (Chhatt, Guj, MP, Raj), some states have covered only some districts (Ass, Bih, Jhar, Mah), and other states have covered only 1 district (Ori, WB). These details in each state relating to coverage, distribution, number of years since piloting and upscaling of ABL, class levels in which ABL is implemented, all need to be carefully considered in determining the sampling criteria for each state.

For selection of districts and schools, in general a stratified cluster sampling design will be used. In each state, the study population will be divided into non-overlapping strata, and sample schools will be selected independently from each stratum. The selection will aim to ensure a balanced representation of different cultural/ regional zones of the state, remoteness, language/population groups, socio-economic status, tribal areas, Educationally Backward Blocks, and between districts where ABL was originally piloted or upscaled later on. In the selection of schools, attention will also be given to ensure a balance between rural vs. urban schools, large vs. small schools, primary schools vs. primary sections in upper primary schools, and multi-grade vs. non-multi-grade schools (where applicable).

Below are some tentative suggestions for districts that could be selected for the study, and/or their distance from the state capitals, which will be finalised through discussions with the state:

State	Tentative Districts
Andhra Pradesh	3-4 districts to be determined
Gujarat	-4 districts to be determined
Jharkhand	Ranchi; E. Singhbhum; Gumla; Hazaribagh
Karnataka	3-4 districts to be determined
Madhya Pradesh	Shivpuri, Ujjain, Bhopal, Hoshangabad, and Seoni
Rajasthan	Chittorgarh, Ajmer and Alwar
Tamil Nadu	Kanchipuram, Tiruvallur, and Chennai Corporation

For Stage 2, for the 5 states having less than 20,000 ABL schools (Guj, Jhar, MP, Raj), 80 ABL schools will be selected per state, and 40 non-ABL control schools will be chosen for comparison, totalling 120 schools per state (600 schools total). The remaining 3 states (Andhra, Karnataka, Tamil Nadu) have up-scaled ABL to all their schools (and so have a significantly larger coverage of ABL, and no non-ABL schools for comparison), thus 120 ABL schools will be selected per state for these 2 states. In these 3 states, school will be selected if possible from among districts where implementation occurred in different phases in order to isolate the effects of longer implementation of ABL. Thus the total sample for Stage 1 will include approximately 840 schools: 640 ABL schools and 200 non-ABL schools. The Achievement Survey will be conducted in Class 2 and 4 for the states that have rolled out ABL up to Class 4 (Guj, Jhar, MP, TN). In the 2 states where ABL is only up to Class 3 (Andhra & Kar), the assessment will be conducted in Class 2 and 3, and only in Class 2 in Rajasthan.

For Stage 3, as described above, a smaller sub-sample will be chosen based on analysis of data from Stage 1, including 15% highest and 15% lowest performing schools based on learning outcomes, and 15% highest and 15% lowest performing schools based on ABL process indicators, giving a total of approximately 250 schools in the 7 states (30-40 per state).

Research Tools will need to be developed in 5 languages – Hindi, Gujarati, Kannada, Tamil and Telugu. Ideally these will be piloted in at least 6 states to ensure the accuracy of translation. The pilot round will serve not only to validate the translations, but also to refine the tools, to ensure that the tools are user-friendly and easy to understand, administer and analyse, to ensure that they generate the desired data, and to understand the nature of data that will be generated and implications for data recording and analysis. Similar achievement tests will be designed across states based on an initial analysis of syllabi and ABL ladders from different states to identify common elements. In designing the tests, attempts will be made to ensure they are child-friendly and that results will not be affected by reading difficulty faced by students, to ensure balance between written/group/individual components, between multiple question formats (traditional, multiple-choice, open-ended, etc.), between different questions types and difficulty levels, between assessment of knowledge, skills and higher order thinking, and to identify common student errors that are made.

6. Schedule of Tasks & Timeline

A literature review has already been completed during 2011-12 of 30 different evaluations that have been conducted of ABL programmes thus far, and their findings have been synthesised in the form of a report to be published by UNICEF. The following timeline is proposed for the further research activities:

Proposed Timeline*	Activities to be completed
Mar-Jul 2013	Internal processing and approval of TOR
	Identification of institution(s)/ individual(s) to lead the study
	Appointment of Advisory Committee & Coordination Committee
	Discussion with states and finalisation of states to be included
Aug - Nov 2013: Stage 1	Initial visits to 7 States, and discussions with stakeholders at various levels
	Selection of study districts and sampling for Stages 2 and 3
	Collection of States' sample ABL materials and training modules, and review through workshop mode.
	Review of state syllabi/ ladders for developing Achievement Surveys
	Development, translation and piloting of tools for Stage 2 (Achievement surveys, classroom observation checklists, teacher surveys)
	Recruitment & training of field workers for field data collection
Dec – Feb 2014: Stage 2	Field data collection for Stage 2 (achievement surveys & classroom observations in approximately 120 schools per state)
Mar 2013 – Jul 2014	Data entry and preliminary analysis of data from Stage 1 and 2
	Preparation of preliminary Draft Report with initial findings from Stage 1 and 2 (Achievement Surveys & Observations)
	National level Workshop for discussing preliminary findings from Stage 1 and 2
	Development and piloting of tools and sample selection for Stage 3
	Training of field workers for data collection for Stage 3
Jul –Sep 2014: Stage 3	Data collection for Stage 3 (Round 2 of Achievement Survey/ Classroom Observations and In-depth Qualitative research in sub-sample of schools)
Oct 2014 – Mar 2015	Data entry and preliminary analysis of data from Stage 3
	Detailed analysis and integration of data from all Stages 1, 2 and 3
	Preparation of draft reports and review by Advisory Committee
	Finalization of Project Report; state-specific reports, and policy brief
	Presentations and dissemination of findings including national and state level workshops

* This is a tentative timeline only.

7. Deliverables and Dissemination

The following deliverables are expected from the research:

- Draft and Final Research Reports
- Presentation of Final Report in Delhi
- A Policy brief summarizing the findings of the phase-wise reports with implications.
- A preliminary report of findings from Stage 1 to be shared for discussion
- Shorter state specific reports with specific suggestions for follow-up
- Training workshops at regional/state level to share the findings and data and provide inputs for possible follow up activities.
- Raw data, data collection instruments, complete data sets all in electronic form

It is expected that this research will feed into state processes of piloting and up-scaling ABL/MAML programmes, giving them concrete suggestions of areas that need further strengthening or modification to ensure positive outcomes for children. The research will also generate an evidence base that can be used in advocacy to inform the implementation of child-friendly, child-centred education as part of RTE provisions. Moreover, as the main flagship support under strengthening teacher education in order to improve children's learning outcomes, this research activity will help determine future interventions in quality reforms for the next UNICEF country programme.

8. Research Team

The research institution(s)/ individual(s) to be identified to lead the study should possess the following desired qualifications/ experience: In addition to having demonstrated experience in the field of educational research, demonstrated ability to write and communicate effectively, and ability to work effectively with State government partners, the following specific qualifications are desirable for each of the components of the research:

- For Implementation Review & Qualitative Study:
  - Deep pedagogical understanding of ABL, constructivism, vision of NCF 2005/ RTE
  - Strong lens for understanding issues of equity, inclusion, discrimination, etc
  - Expertise in conducting in-depth qualitative research & analysis, as well as ability to integrate quantitative and qualitative findings
  - Ability to recruit, train & coordinate a team for data collection in 7 states
  - Ability to help in effective dissemination and advocacy based on findings

- For Quantitative Component:
  - Core competency in conducting large-scale surveys across different states, including a demonstrated ability to design research, draw representative samples, develop & administer instruments, design and/or use data entry software, analyse and present findings effectively.

- Demonstrated ability to develop and analyse large-scale learning achievement surveys in different languages, based on an analysis of different states' curricula, and including nuanced assessment of higher-order skills such as conceptual understanding, critical thinking, creativity, etc
- Good understanding of educational context and sensitivity to issues of pedagogy and equity
- Ability to recruit, train & coordinate a large team for data collection (including State Government partners) across 7 states

It is proposed that the data collection will be done in a participatory mode, by involving State education structures (SCERTs, DIETs) where possible in the data collection and analysis, as a means to contribute to their capacity building in education research, monitoring and strengthening of their ABL programmes. Field visits would be made by the Core Research Team to monitor the research process, and it is also suggested that the Core Team be involved in direct data collection and analysis in at least one state.

It is also proposed to set up an Advisory Committee to guide the research process, including representatives from UNICEF, Government of India, the agency(s) identified for leading the research, and other educational experts. The role of this Committee would be to provide technical inputs in conceptualising the research design and tools, in overseeing progress in the research and analysis process, and in reviewing draft reports, through periodic meetings throughout the research process.

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Chapter 2

2. STATE HISTORIES

ANDHRA PRADESH

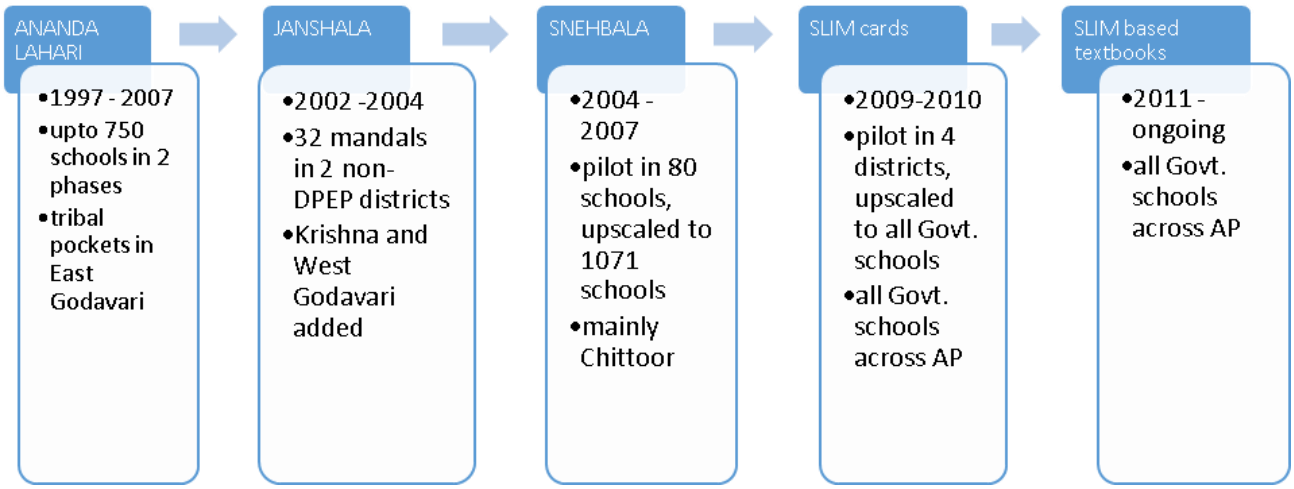
PROGRAMME OVERVIEW

Andhra Pradesh has had at least 4 distinct variants across its experiment with Activity Based Learning over the last 15 years. The model currently advocated by the state, SLIM card based textbooks, has a state wide coverage which translates to about 68,000 schools. It covers grades 1-4 and is offered in the subjects of Telugu, Math, EVS and English.

HISTORY AND EVOLUTION OF THE PROGRAMME

The 5 major phases are: Ananda Lahari from 1997 to 2007, Janashala from 2002 to 2004, Snehabala from 2004 to 2007, SLIM (Self Learning Interactive Material) cards from 2009 to 2010 and SLIM based text books from 2011 to present.

Figure 1 : Phases of ABL in Andhra Pradesh



The versions of the programme implemented in the early years – from Ananda Lahari to SNEHBALA (2004-2007) were all basically adaptations of the Rishi Valley MGML pedagogical approach, and were supported entirely by UNICEF. While keeping the conceptual underpinnings intact, each of these programmes tried to bring in culture and context specific changes, as well as practical innovations in the model over the years.

While the iterative versions in the earlier years (starting with Ananda Lahari in the 1990s and ending with the Snehabala programme of 2009) did have their own special features and flavor, they were essentially true to the Rishi Valley MGML philosophy. These programmes were meant to provide an

alternative structure of the learning environment, where the child defines his own learning pace and path through independent discovery and co-operative learning, along with some teacher led or teacher supported interactions. Accordingly, the form of the early programmes followed that of the RV-MGML methodology - with learning ladders, a strong focus on self-learning and peer-learning, milestone based cards etc. The essence of this philosophy was preserved up to the Snehabala pilot in 2009, with context-based customization, feedback-based adaptations, and pedagogical enhancements being introduced at each stage.

Seeing the Snehabala pilot in Chittoor as a success, a programme team was formed with the intent of up-scaling the program in the state. There were a number of issues to be addressed. Teachers were seen to face a lot of difficulty in handling the logistics of the RV-MGML classroom. Also due to learning being self-paced, the teachers complained about having to repeat the same topic many times to different set of students. Too much variation among students was seen as a big negative. Also, it was felt that the role of the teacher was reduced in the teaching learning process in the RV-MGML model (it was seen as being akin to “that of a librarian – simply distributing cards”). Rather, it was felt, they should be actively triggering thinking in students, and scaffolding students’ learning.

Based on this, the state decided to shift from the RV-MGML model to a model (SLIM cards) which was not too radical in approach, and maintained the existing classroom environment. This model sought to retain the child friendly learning activities of the RV model which was seen as adding value, and at the same time modify it to address the concerns raised. Instead of allowing students to progress at their individual paces across milestones, variation was restricted to within a milestone. Whole class activities were also introduced, thus reducing the number of times a teacher would have to repeat the same topic, and making the teacher’s role more important. Also the number of cards was reduced to make the model simpler and easier to handle. Steps were also taken to streamline the expenses – by doing away with the cost-intensive workbooks of the Snehabala model and replacing them with simple notebooks.

Even after altering the original Snehabala model drastically to the SLIM cards, issues remained. Teachers were unable to understand how to use the SLIM cards and textbook integrated model towards managing multi-grade classrooms. Cards were not viewed as part of the curriculum; had the limitation of not being available to the child for access at home for revision or practice; and needed high maintenance (with loss, wear and tear etc.). There were also financial constraints. Meanwhile, there was a growing feeling that textbooks cannot be done without. Compiling the cards into a textbook form seemed like the solution. Hence, the SLIM cards were converted into textbooks maintaining the milestones/competency based model within the textbook.

KEY FEATURES OF CURRENT MODEL

- Textbooks which incorporate the Snehabala cards
- Flexibility to teacher in the form of grouping not mandated in the class
- Assessments aligned to CCE requirements

GUJARAT

PROGRAMME OVERVIEW

In Gujarat, *Pragna* or "Pravrutti dhvara gnan" – the approach of activity based learning is implemented in 16000 schools. It is offered for subjects Maths, EVS (*Paryavaran*) and Gujarati. It also includes a section 'Rainbow activities' (*Saptarangi*) aiming to provide holistic education for the child. It is also implemented in 4 private schools. The state follows card-ladder system and uses work-books for writing practice. Material like "Vachan-Mala", "EVS- Manan" have been conceived to give additional practice and home-work to the child.

HISTORY AND EVOLUTION OF PROGRAMME

In spite of the initiatives to improve quality of education and teacher empowerment, the classrooms remained teacher-centric and multi-grade classrooms seemed to be a reality. In the process of tackling these problems, officials from Gujarat visited Chennai and interacted with officials, teachers, support personnel and curriculum developers to understand ABL implementation. They also observed ABL functioning in classrooms in Chennai. A team from Gujarat also visited Chhattisgarh and brought back learnings from there which they wished to incorporate into their model – like multi-grade classrooms for classes 1 and 2, introduction of workbooks as additional practice material, and the importance of using language aligned to the local culture. Armed with these learnings, a number of in-house meetings were held to discuss how to adapt the model to the context of Gujarat and what modifications were needed. As a result of these meetings, Gujarat decided to implement *Pragna* in 2010.

A core group was formed and the material for classes 1 and 2 were developed. The competencies that are expected at each grade level were listed out, and the sequence of steps involved in mastering these systematically studied. The multiple approaches to learning were also thought through and activities conceptualized to give the student the experience required to master a particular competency. These were then tried out in selected schools in Vijapur, feedback incorporated. A review process involving experts was also followed and the material finalized.

Following this *Pragna* was implemented in classes' 1 and 2 in 258 schools, 5 schools per block, and 2 blocks per district. These schools were chosen based on the presence of enabling factors – e.g. – basic infrastructure, teachers already trained in appropriate teaching methodologies in earlier programmes etc. The need to hand-hold teachers was recognized and considerable on-site support given by a 67-member state core group.
In 2011, *Pragna* was extended to classes 3 and 4 in these schools, and implemented in classes 1 and 2 in 2500 more schools, spread across districts and blocks. Subsequent years saw phased out widening of coverage as can be seen from the table below.

Table 1 : ABL Coverage of schools across years in Gujarat

Classes/N of schools	2010-11	2011-12	2012-13	2013-14	2014-1015	Total
Std 1-2	258	2500	1258	3750	7500	15000
Std 3-4	-	258	2500	1258	3750	7498

Currently *Pragna* is implemented in 15,000 schools in classes 1 and 2. In around 7500 of these, the method is practiced in classes 3 and 4 as well. The state has introduced Pragna in class 5 also in the year 2014 – 2015.There are plans to cover the entire state (34,000 schools) by 2016 – 2017. One key feature of the ABL material in Gujarat is the Rainbow activities. These activities have been conceptualized to enable all-round development of children. These fall under 7 categories (and hence the name *saptarangi*) and are activities intended to hone their multiple intelligences and psycho-motor skills. A dedicated slot of 2 hours every alternate day is allotted for these activities.

There are also workbooks, practice books in Maths, *Vachanmala* in Gujarati and an EVS book called *EVS Manan* to reinforce the concepts learnt at home.

KEY FEATURES OF CURRENT MODEL

- The first state to extend ABL to class 5.
- Rainbow activities intended to promote holistic development
- Provision for extra practice and homework through specifically defined workbooks
- TLM kits not supplied – but teachers encouraged to use locally available material, through suggestions in teacher handbook
- System of using flags to draw teacher attention
- Use of student slates which have the traditional 2/4 lines to guide student writing, instead of the low level blackboard

JHARKHAND

PROGRAMME OVERVIEW

In Jharkhand, Activity Based Learning is named as MGML (Multi Grade Multi Level) for Grades 1-2 and Self Learning Material (SLM) for Grades 3-4. The medium of instruction is Hindi. For Grades 1-2, it is offered for the subjects of Hindi and Maths. And for grades 3-4, it is offered for Hindi, Maths, and Environmental Science (split into two as Paryavaran I, Paryavaran II). It has been designed using NCERT Learning Competencies as the basis.

It is being followed in a total of 235 schools (0.6% of total schools in the state offering primary education) impacting a total of about 20,000 children (0.4% of total primary school children in the state). Out of the total 24 districts, it is present in 4 districts.

Currently a new programme – Buniyaad – which involves activity based learning and ability based learning has been implemented in the state. MGML in its original format has been discontinued.

HISTORY AND EVOLUTION OF THE PROGRAMME

The program has its origins in the Rishi Valley model which 15 teachers with support from UNICEF visited in 2003-04. First, the teachers attempted changes in their respective schools. Then in 2005-06, state-level workshops were organized for developing MGML materials for Grades 1-2. The programme was piloted in 100 schools in East Singhbum and Ranchi.

Post this, a rigorous material development for revamping MGML and developing SLM was started. It engaged the best teachers of the state and curriculum experts and took a year or so to complete. The new offering was introduced in 2009-10 in 235 schools in the 4 districts of East Singhbum, Ranchi, Gumla and Hazaribagh. More schools were chosen from East Singhbum (150 out of 235) as it is a UNICEF model district and from Ranchi (50 out of 235) as it is the capital district.

A unique feature of the Jharkhand program is a curriculum specifically designed for Grades 3-4 named SLM (Self Learning Material). It is designed on the view that the grades 3-4 children need something more deeply engaging than the cards and having some semblance to the text book method to make integration into grade 5 easier. Hence, the organizing unit for SLM is a learning cycle and not an activity/card. Learning competencies of grades 3 and 4 have been combined to create a learning cycle. A learning cycle is a sequence of activities for developing a particular learning competency which gets completed in 5 stages. The 5 stages are – Evaluation of prior knowledge (Stage A-Pre-preparation), Learning under the guidance of the teacher (Stage B-Introduction), Self-Learning & Peer learning (Stage C-Reinforcement), and Application in real life (Stage D-Project work) and Demonstration of project work (Stage E). The activities within a stage are based on the concepts of self-learning. All activities of a particular stage are compiled together in book/s. SLM has been designed to act as a bridge between what the child went through before (MGML) and what he will undergo after (Text book centric)

There were plans to expand the programme to 8 additional districts that year. However, it did not materialize as consensus could not be achieved (between State Government and UNICEF State Office) on who bears the material cost. Since 2011-12, the supply of the material has been on the decline. In this academic year (2013-14), no new material has been supplied to the schools. In early 2013, the field staff in the 3 districts (UNICEF Extenders) was withdrawn and the government machinery did not take up support provision either. Thus, the programme has not moved beyond the pilot stage. And with issues of material supply, support and training; the current implementation on the ground seems to be dependent on a school's own initiative and may have huge variation from the model piloted in the 235 schools in 2009-10. A new initiative – *Buniyaad* – has been introduced in the state which involves activity based learning and ability based grouping.

KEY FEATURES OF CURRENT MODEL

- A school readiness package – activities meant to put a class 1 student at ease by providing him an environment where he can behave naturally as at home. Activities like playing with mud, local games, rangoli making etc. are part of this
- Self- Learning Material for classes 3 and 4 which are based on learning cycles
- Incorporation of local culture and context into cards
- Cohort register which allows to track individual students

KARNATAKA

PROGRAMME OVERVIEW

Karnataka's Activity Based Learning programme is known as Nali Kali. It is offered in the subjects of Kannada, Math and EVS for grades 1-3. English has also been added from the year 2014. The programme has a state wide implementation (excluding government aided schools), the total number of government schools offering primary schooling being 45,690. The state follows a card-ladder system with workbooks.

HISTORY AND EVOLUTION OF THE PROGRAMME

The genesis of the Nali-Kali programme was an attempt to address some of the issues with grade 1-2 classrooms then – student absenteeism and the need to strengthen learning. In the old method, Grade 1-2 classrooms did not have a textbook which made it further difficult to standardise the learning. Also, this made the need to make the learning more visible.

Searching for ways to revitalise primary education, a group of 15 teachers and administrators visited the rural schools of Rishi Valley Education Centre, Madanapalle, Andhra Pradesh. Inspired by the child-centred activity based pedagogy that they saw there, these teachers and administrators, decided to adapt the method to their own schools. Thus Nali-Kali started as a small project in 270 schools in H.D.Kote taluk in Mysore district for classes 1 to 3 in the year 1995.

The project was extended to the rural taluks of Mysore District and 10 Janshala blocks under the District Primary Education Programme (DPEP) in i998 -99 . This initiative, which was supported by UNICEF covered classes 1 and 2 of a total of 17 blocks. It was decided that further scaling would happen after evaluation of the programme in these 17 blocks.

The team that visited Rishi Valley, designed a new curriculum with the support of administrators and pedagogical inputs from experts. This was reviewed by experts, discussed with the teachers who created the material and a consensus arrived at about the content areas, activities and material to be

retained, modified or dropped. This was done once every 6 months and the teachers participation and buy – in was actively sought. "'When practicing teachers say, you're asking us, so we're doing it, but we can't do it. And when teachers say this, there's no point in forcing them' (MN Baig quoted in (Kaul, 2004))

The programme was also implemented in select blocks - Sahapura, Surapura, Alanda, Lingasgur, Raichur, Manvi, Sindhanur & Devadurga – where UNICEF assisted SWASTH programme was being implemented in the period 2003 – 2004. A total of 4000 schools was covered under the programme in 2003 – 04.

In the year 2008-09, the programme was implemented in 13,691 government primary schools where the number of children is less than 30 at the lower primary level. Nali Kali was introduced in grades 1-2 of all Kannada medium schools of the state in 2009-10 and in grade 3 in 2010-11. Nali – Kali material was developed in Urdu in 2009 – 10 and piloted in 22 blocks in 5 districts and eventually all Urdu medium schools in the state were covered.

KEY FEATURES OF CURRENT MODEL

- Time for whole group activity allotted at the beginning and end of each period.
- Clear directions given to teacher as to how she should split her time between groups
- Cards numbered sequentially, across all logos, unlike in other states where there is separate numbering for each logo
- Workbooks provided for, across class subjects
- Monthly targets in the form of number of cards to be completed prescribed
- Number of supplementary readers developed and made part of the ladder to encourage reading habit
- TLM kits which have dice activities and other games and manipulatives provided.

MADHYA PRADESH

PROGRAMME OVERVIEW

In Madhya Pradesh, the current model of ABL introduced in 2013 is offered in the subjects of Hindi, Maths and English for grades 1-2. The medium of instruction is Hindi. It is being followed in a total of 16005 schools (20% of total schools in the state offering primary education). Every district of the state has some ABL schools. The state has a card-ladder system with some cards being incorporated into the workbook.

HISTORY AND EVOLUTION OF THE PROGRAMME

Around 2005-06, concerned with the issues in elementary education, the state started seriously considering the ABL approach, as a way to address the serious issue of poor learning levels, along with

the reality of the multi-age multi-grade situations in a large part of the govt. school system. Initially, teams from the Rajya Shiksha Kendra (RSK, the department responsible for implementing elementary education programmes in MP) made visits to Rishi Valley to study the approach, but that did not come to much as the Rishi Valley model was not seen to be practical for the government school system. Later, in 2007, after making a visit to see the ABL model in action in the Chennai corporation schools, the state decided that this model was learner-centered, activity-based and feasible, and implemented ABL in about 2000 schools in 2008-09. While only 40-80 schools in every block were covered so far, in 2010-11 the programme was expanded to all schools in 8 blocks in 6 select districts. In 2011-12, the programme was expanded to all schools in 1 block each in the remaining 44 districts taking the count of schools in ABL to 16,000.

On receiving feedback from the ground about some issues with the model, some reviews were done by various agencies including UNICEF, NGOs, and the state itself. The main points emerging from the reviews seemed to be that there were too many infrastructure and logistical issues - too many cards, no space, high PTR, etc. Also, funding issues (stoppage of LEP funds and no state budget) made expansion difficult. Based on reviews and funding challenges, further expansion was put on hold in 2012-13. The material was revamped in 2012. In 2013, the reviewed material (new textbooks and workbooks) for grades 1-2 was introduced in all schools in 8 blocks of 2010-11 expansion. It has been decided to gradually expand coverage. In 2014-15, new material for grades 3-4 will be introduced in the 8 blocks and the grade 1-2 material will be introduced in all ABL schools. Grade 3-4 material will be introduced in 2015-16 in all remaining ABL schools. The non-ABL schools (about 68,000) will continue to use the material they have been using.

Table 2: Phases of ABL implementation in Madhya Pradesh

Head	Phase 1: 2008-2009	Phase 2: 2009-2010	Phase 3: 2010-2011	2011-2013	Phase 4: 2013
Expanse	ABL Introduced in about 2000 schools. About 80 schools each in two select blocks in 24 districts (out of a total of 50 districts)	Expanded to cover about 4000 schools. About 2000 schools added by bringing about 80 schools each from the remaining 26 districts into the fold	Expanded to cover about 16000 schools New schools added by covering 8 blocks from 6 districts	2011-12: 100% in 1 block each in remaining 44 districts 2012-13: Expansion stopped. Review by UNICEF TN visit No LEP stopped/state budget to expand (cost: 15000) Implementing new material in phases Reviews in progress.	The expanse remains at 16005 schools. Reviewed material introduced. Out of 318 total blocks, 52 blocks – 100% 50 blocks – 40 schools each -New TBs/WBs only for class 1-2 in 8 blocks of 2010-11 -8 blocks in class 3-4 in 2014-15

Head	Phase 1: 2008-2009	Phase 2: 2009-2010	Phase 3: 2010-2011	2011-2013	Phase 4: 2013
					-2014-15: all ABL schools will get class 1-2 material - All remaining schools continue with old material
Classes	Classes 1-2	Classes 1-2 for new schools Class 3 for Phase 1 schools	Classes 1-2 for new schools Class 3 for Phase 2 schools Class 4 for Phase 1 schools	Class 3 for Phase 3 schools in 2011-12. Class 4 for Phase 2 schools in 2011-12.	New textbook introduced for classes 1-2.
Subjects	Hindi, Maths, English for classes 1-2	Hindi, Maths, English for classes 1-2 Hindi, Maths, English, EVS for class 3	Hindi, Maths, English for classes 1-2 Hindi, Maths, English, EVS for class 3 and 4	Hindi, Maths, English for classes 1-2 Hindi, Maths, English, EVS for class 3 and 4	Hindi, Maths, English for classes 1-2

A brief comparative description of the Teaching Learning Material in the old ABL model in MP and the new, reviewed one:

Table 3: Revisions of TLMs in Madhya Pradesh

	Old model	Reviewed (*Saralikrit*) model
Kit	About 2500 cards in all for classes 1-4, out of them about 836 for 1-2	Cards reduced to 340 for classes 1-2. (review for 3-4 not done yet)
Books and workbooks	Meri Kitab – textbook (with ladders embedded for tracking)+ workbook for home work Abhyas Pustika – workbook for class	Reviewed textbooks, attempt to integrate the ***workbook*** element within the textbook, cards within textbook, 'home work' logo on certain pages
Teacher support	Teacher handbook	Revised Teacher handbook

KEY FEATURES OF THE CURRENT MODEL

The ABL model in MP was based on cards and ladders using Digantar's multi-grade material as the base. Revamped material has been introduced for grades 1-2. Review for grades 3-4 has not been done yet. The key changes made in 2012 post the 2011 review are listed below.

- Milestones (and therefore cards) reduced, and made month-wise. Cards have been reduced from 836 to 340
- Cards were put within textbook
- Workbook integrated within the textbook
- Whole group activities to begin and end lesson (introduction and evaluation)
- Blank cards introduced for flexibility
- Change to spiral curriculum
- Evaluation format changed
- Monthly test covering prescribed number of cards

RAJASTHAN

PROGRAMME OVERVIEW

The ladders and cards based Activity Based Learning (ABL) model was named LEHAR in Rajasthan. It was offered in three subjects of Maths, English and Hindi for grades 1 and 2. The programme was piloted in 2009 and was gradually up-scaled to 12,000 schools (spread out all across the state) by 2012-13. The state has discontinued the programme from the year 2013-14 and has moved on to an activity based textbook model. Students are assigned grades (A, B, C) based on their ability as per the continuous evaluation. The current programme with activity based textbooks and continuous evaluation is commonly called CCE in the state.

HISTORY AND EVOLUTION OF THE PROGRAMME

Under the support and encouragement of UNICEF, a team visited Rishi Valley and Tamil Nadu in 2008. Material for grades 1-2 was developed from June-Nov 2008 and it was piloted in 6 schools. The programme was started from the academic year 2009-2010 under the name of LEHAR. Initially, it was piloted in six schools and was gradually up-scaled to 12,000 schools within three years. In the 1st year (2009-10), LEHAR was introduced in 4735 schools. These were schools in educationally backward districts (as per literacy rate) and schools under the NPEGEL scheme (National Programme for Education of Girls at Elementary Level). In the 2nd year (2010-11), 1389 schools were added on the criteria of schools with enrollment less than 60, schools with at least two teachers available etc. In the 3rd year (2011-12), another 4436 schools were added and in the 4th year (2012-13), 1440 new schools were added making it 12,000 schools overall. The schools were spread across all the districts in the state.

Table 4: Coverage of Lehar in Rajasthan

#	Year	No. of schools
1	2008-09	4,735
2	2009-10	1,389
3	2010-11	4,436
4	2011-12	1,440

#	Year	No. of schools
	Total	12,000

Around 2010-11, while the LEHAR programme was being tried and up scaled as the classroom pedagogy, work was also going on in the state to align its syllabus and textbooks to the National Curriculum Framework. The last revision to the primary school textbooks had been in 2002. While the option of introducing NCERT textbooks was considered, it was decided to create textbooks specific to the state. As a textbook change was imminent, it did not seem to make sense to create LEHAR for grades 3-4 based on existing textbooks or to expand it to more schools for grades 1-2. Further, delivering the kits to each of the 90,000 schools in the state and monitoring its usage, centrally, seemed logistically unmanageable. Also, as the new textbooks were activity based, it was decided to move away from a kit based model to a textbook based model. Cost considerations also seem to have influenced the decision. Kit based model is cost intensive and there has been a huge cut in the funding received from the centre (~Rs. 1200 crores to ~Rs. 370 crores). The present activity based textbook model has been introduced in two phases over two years. In the year, 2013-14, new textbooks were introduced for grades 1, 3 and 5 and the new textbooks were introduced for grades 2 and 4 next year. The programme in its current form implements Continuous and Comprehensive Evaluation (CCE) for all the students and is known by the same name.

KEY FEATURES OF THE CURRENT MODEL

- Activity based text-books
- Students are assigned ability based grades as per the continuous evaluation
- Assessment formats aligned to CCE requirements
- Teacher diary where teacher is expected to record her separate plans as per students' CCE grades, and her reflections and modifications to plan based on classroom experience
- Source book of activities for teachers

TAMIL NADU

PROGRAMME OVERVIEW

In Tamil Nadu, Activity Based Learning (ABL) is offered in grades 1 – 4 in all the government and government aided schools. It is offered in Tamil, English, EVS and Maths in grades 1 and 2 and Tamil, English, Science, Social Studies and Maths in grades 3 and 4. Initially it was offered only in Tamil medium schools. From this academic year it is also being offered in Malayalam, Urdu, Kannada, Telugu and English mediums. It covers over 37,000 schools in the state.

HISTORY AND EVOLUTION OF THE PROGRAMME

The first seeds of ABL in Tamil Nadu were sown in the early 1990s, when the then District collector of Vellore, Mr. M.P Vijayakmar attempted to bring the children working as bonded laborers into the

mainstream schools, by bridging the gaps in their learning in special institutions, with the help of activists from Tamil Nadu Science Forum and *Arivoli Aayiram*. Later on a group of 30 teachers from the schools run by Chennai Corporation took extensive training from Rishi Valley and developed their own ABL material. These were piloted in grades 1 and 2 in 13 schools of Chennai Corporation in 2003. In the next year, grades 3 and 4 were included and all 257 schools in Chennai covered. In 2006-2007, the method was introduced in 4160 schools, 10 in each block. These schools served as model schools and were showcased to teachers across the state and their buy-in sought. In 2007-2008, the method was implemented in all government and aided schools. The non- Tamil medium schools used the methodology with textbooks and for English, all primary schools used the audio and video materials supplied by SSA. The SABL cards were printed in other languages – English, Malayalam, Telugu, Kannada and Urdu in 2013-14.

The model and the material have under gone a number of rounds of major changes after the state wide implementation in 2007-2008. Initially the material was developed by a group of teachers who had absorbed the MGML philosophy of Rishi Valley and the cards were tried out in the schools during the development process, and changes made accordingly. These were reviewed by experts and finalized. The first revision of the cards was undertaken based on feedback collated from teachers from 32 districts across the state in 2009. The attempt was to make a skill-based ladder. Also, side ladders were introduced to integrate whole group activities in the classroom transaction. The side ladders consisted of a sequence of activities that was meant to be performed in the morning and evening, at the start and end of the school-day.

In the year 2010 the state introduced a unified curriculum for the different boards in the state. This scheme called “Samacheer Kalvi” integrated the State Board, matriculation Board and the Anglo Indian Board and came out with a unified text book for all these boards. These textbooks began to be used in the government Primary schools, where ABL was functional as well. It was felt that the cards that were in use were not in alignment with the text book and a revision of the cards undertaken, and new set of cards supplied in 2011. In this revision, the side ladders were removed, thereby removing the provision for whole-group activities.

In 2012, the trimester system came into vogue in the state. Under this system, the text books for each subject were divided into 3 parts and the content for each trimester for multiple subjects combined into one text book. Students received a fresh text book every trimester. Along with this the Simplified Activity Based Learning (SABL) – where in the number of cards was reduced by around half and the logo system changes – also was started. The new set of logos, were designed in such a way as to reflect the activity I the card. For example a card with a game activity would have the logo of 2 boys playing, or an activity which called for a discussion would have the logo of a few children sitting around a teacher. So there were a few logos like the game logo and the discussion logo which were common across subjects and a few which were subject specific – for example the multiplication logo in Maths, or the ’Conversation’ logo in language.

In the process, the placement of text book chapters in the book for the appropriate trimester and the order of milestones in the ladder had some differences. This was overcome by letting the teachers follow the milestones in an order different from the sequential order in the ladder temporarily and eventually rearranging the chapters/cards. There have been revisions to the cards in the last 3 years to align content to that in the textbook.
Thus, the introduction of the Samacheer Syllabus in 2011 – 2012, and the trimester system in 2012, and the introduction of the CCE scheme have influenced the history of ABL in the state.

KEY FEATURES OF THE CURRENT MODEL

- The logo system which are based on the nature activity in the card – leading to a few logos common across subjects like discussion logo or a rhyme logo, and a few subject specific logos like fraction logo, or conversation logo.
- Rich variety of materials, including a large number of extra-readers, 3-D material to do Maths, audio – visual material which called for having a TV and computer in every class.
- Blank space before the evaluation card which gives the teacher flexibility to give differentiated instruction
- Ladder divided implying a term-wise target
- ABL methodology has become part of the pre-service training

Chapter 4

4.1. RESEARCH STAGES

STAGE 1 – UNDERSTANDING THE STATE MODELS

A 2-4 member team visited each of the 7 states – MP, Rajasthan, Jharkhand, Karnataka, AP, TN and Gujarat. The team spent 3-4 days in the state capital and nearby cities. The team had discussions with the state UNICEF team, SSA, SCERT and DIETs. The team did group consultations with teachers, resource persons and trainers. The team also visited 2-3 schools where it observed classrooms and met teachers/HMs. The team also met local NGOs/Researchers who have played an important role in the state. The visits helped to understand each state's particular ABL model, its history and evolution, its different elements and how they work. We built an initial understanding of how the model has been implemented in each state and the nature of training, support and monitoring processes. The interactions with a variety of stakeholders gave us a fuller perspective on each model.

STAGE 2 – LARGE SCALE EXPLORATION

Stage 2 was designed from the understanding gained in Stage 1 to answer some of the research questions on the basis of a large scale survey. Stage 2 covered the following for both ABL and non-ABL schools:

1. Learning outcomes of students: Language and Maths in Classes 2 and 3
2. Non-academic outcomes: captured through students engagement in learning
3. Alignment of teacher beliefs, pedagogic transactions, and training to the common principles of child friendly education
4. Quality and availability of training, material, support and monitoring mechanisms

The tools used in Stage 2 are summarized below:

Table 5: Project Stage 2 Tools Overview

No	Stage 2 Instrument	What it covered	Key Points
1	**Teacher questionnaire**	Teacher beliefs on principles of learning, Trainings and support received, Availability of Teaching material, Perceptions about the adequacy and quality of these, ABL specific perceptions	-Filled in by teacher on her own after briefing by Field Evaluator -One set of questions common to all schools -One set of 'ABL-specific' questions only for ABL schools
2	**Classroom observation schedule**	Physical environment of the class, availability of resources, Class room interactions and relationships, presence and absence of ABL specific material	-Filled in by trained field evaluators based on classroom observation of around 45 minutes -One set common to all schools -One set of 'ABL-specific' items only for

No	Stage 2 Instrument	What it covered	Key Points
		and processes	ABL schools
3	**School Proforma**	Basic information about the school	-Filled in by field evaluator based on observing school, interviewing HM.
4	**Achievement tests in Classes 2 and 3- Language & Maths**	Based on common minimum curriculum across states, by studying state documents; based on syllabus of Class 1 and Class 2 respectively. Some 'same class level' competencies included.	-Filled in by students. In Class 2, each question was read out orally. -A few questions also administered individually in oral form, to a few students in each class. -Mix of free response and multiple choice questions; some higher order thinking questions

STAGE 3 – IN- DEPTH QUALITATIVE STUDY

The Stage 3 of the project comprised of 2 broad areas of work.

1. **In-depth qualitative study** in a sub-sample consisting of 15% of the stage 2 sample schools in each state. These schools were chosen based on their classroom processes from the highest and lowest performing schools in the stage 2 achievement survey.
2. **Achievement Surveys** (Round 2) in approximately 30% of the stage 2 sample schools in each state, drawn from the highest and lowest performing schools in stage 2 achievement survey.

IN-DEPTH QUALITATIVE STUDY

The qualitative study aimed to build on and develop further understanding of classroom processes. As part of the in-depth qualitative study, a total of 117 schools, including 7 non-ABL schools, across 7 states and 20 districts were visited. 20 Research Assistants (RAs) were hired and trained for the purpose. The RA visited each school for 3 days and conducted class room observations, interviews the Head Master and teachers, interacts with students, parents and BRC/CRC wherever possible. A summary of specific tools used for Stage 3 is given below:

No	Stage 3 Instruments	What it covered	Key Points
1	**Classroom Observation tool**	Open format to capture: Physical environment, student engagement, democratic, fear-free and inclusive environment and opportunities for self-paced	- Conducted for 4-6 hours in a classroom over 3 days - Same combination of teacher and subject followed to ensure pedagogical aspects are observed keenly

No	Stage 3 Instruments	What it covered	Key Points
		and peer learning in the classroom	- Clarifications if needed sought from the teacher after the period would get over
2	**Teacher and HM Interview guideline**	Structured interview to cover: brief background, understanding of the ABL method and principles, perception training and support, views on desirability	- Interviewed the same teacher whose classroom was observed - School/ Primary wing In-charge interviewed if HM not appointed in the school
3	**Discussion guideline for students, parents, BRC**	Semi-structured guidelines for capturing understanding and perception of ABL method For BRS	- Student discussions conducted for randomly selected 5-8 students - Parent discussions conducted wherever possible - BRC/ CRC/ Support personnel discussion conducted if there was a visit by one of them during the 3 day research period in a school
4	**School Observation tool**	Basic information about the school	- Filled in by RA based on observing school, Mid-day meals, provision of basic infrastructure etc.

Achievement survey

The second round of the Achievement Survey was conducted for students of classes 3 and 4, in Language and Maths in 35 schools in each state. Parallel papers (of the same level) as Stage 2 papers were developed. Since Class 2 and 3 were tested in Stage 2 in January 2014 (in the previous academic year), the second round of Learning Achievement survey covers students of Class 3 and 4 in Language and Maths, to cover the same cohort of students. Along with the parallel paper, a higher order paper for both classes is also administered. The papers developed went through multiple rounds of checks, translations and validations.

Table 6: Stage 3 Achievement Survey Test Papers

Test Papers	No. of questions	Duration (Min)
Language Class 3	21	60
Math Class 3	20	60
Language-HO* Class 3	10	30
Math-HO* Class 3	10	30
Language Class 4	26	60
Math Class 4	25	60
Language-HO* Class 4	10	30
Math-HO* Class 4	10	30

**HO: Higher Order questions*

4.2. DETAILED RUBRIC USED FOR QUALITATIVE ANALYSIS

Factor	Parameter	Definition	High	Medium	Low
ID	DISE code	-	-	-	-
ID	School Name	-	-	-	-
ID	Class Code	-	-	-	-
Outcomes	S2 Score	-	-	-	-
Outcomes	S2 Classroom Process	-	-	-	-
Outcomes	S3 Score	-	-	-	-
Outcomes	Enrolment-Dropout	-	-	-	-
Basic Data	Class type	Monograde/multi grade	-	-	-
Basic Data	Grouping type	Whether the grouping followed in monograde/multigrade or no grouping at all	-	-	-
Basic Data	Class type Comments	Comments if any or additional details you may want to share on the class type/ grouping type	-	-	-
Basic Data	Number of students in class		-	-	-
Basic Data	Classes taught	Which are the grades present in the observed class	-	-	-
Basic Data	Subject taught in class	-	-	-	-
Basic Data	Teacher experience (yrs)	-	-	-	-
Basic Data	Teacher	-	-	-	-

Factor	Parameter	Definition	High	Medium	Low
	experience-ABL (yrs)				
Classroom Environment	Fear free environment	The classroom comes out as a non-threatening and learning supportive environment for every child and students can express themselves honestly and question freely.	Children asking questions, talking to each other freely about learning, there is physical movement in the class and teacher is interested in the opinion of the students.	Some students answer when questions are asked, there are some students who are not participating. Fear is not explicitly seen in the class, but student are mostly listening and talking only when spoken to.	Teacher uses a harsh tone, children are fearful and hesitate to ask questions, and occasional physical punishment may be seen.
Classroom Environment	Inclusion (Exclusion reversed)	The teacher actively provides an environment that is inclusive and is supportive of diversity (diversity based on social groups, caste, religion, gender, special needs). All children's voices and experiences are affirmed, and no child is discriminated against.	There is a positive attempt to include/integrate marginalized category - like extra effort on special needs children etc. Absence of any exclusive practice observed.	If a couple of exclusive practices were observed – not something extreme	If there is a stark discrimination on the basis of social group, caste, religion, gender, ability, language or special needs, of if there is any discrimination based on 2-3 or more of these.
Classroom Environment	Student engagement	All students are engaged for most of the time in learning activities	If most of the students are participating in the class activities - asking or answering	If more than half of the class is totally engaged, or if most of the class is somewhat engaged	Lots of students are idle for a large chunk of time and do not know what is

Factor	Parameter	Definition	High	Medium	Low
			questions, or engaged in their work,		happening in the class. Many students are doing nothing in particular
Classroom Environment	Provision for Self-paced learning	There is room for the child to learn at his speed.	There is a provision for every child to move according to his or her own ability. Different students may be doing different tasks at their level - there is a high level of differentiation in the instruction of the teacher.	There may be ability based grouping in the class and each group may be working on a task appropriate to their level. There is moderate amount of differentiation in the instruction of the teacher - e.g. Different students on different pages of a workbook.	There is no provision for students to progress at their own pace and they are forced to keep pace with everyone else. All the students are learning the same things or doing the same task - example - whole class teaching or a teacher goading a student to catch up with another
Classroom Environment	Peer learning	Students learn from each other by doing activities together or students help each other learn by explaining concepts, helping solve problems etc.	Teacher makes provision for students to interact and lean from each other - like assigning group activity	Teacher makes a provision/gives room for students to interact with each other - for e.g. Make them sit in groups to learn, or pair up	Teacher does not facilitate peer interactions, and may even refuse to allow students to

Factor	Parameter	Definition	High	Medium	Low
			etc. Students do activities together, (as opposed to sitting together and doing activities individually), explain to each other. Students approach peers rather than the teacher on their own accord to clarify doubts.	students in such a way that one learns from the other	help each other. Students helping each other occasionally accidentally - not by design
Teacher	Buy-In	Based on the views expressed by the teacher on the desirability of ABL, the kind of benefits and challenges that she sees in implementing it and to some extent on her beliefs in principles of child friendly education. Some of the challenges that we encountered - like lack of material, or large student strength in the class – we accepted as genuine challenges. So it cannot be said that a teacher who finds it difficult to follow the method	Responses where the teacher sees very few challenges in implementing ABL and believes that it is the best method to go ahead with have been rated high on buy-in.	Responses like the following where the teacher does see some benefits, but sees a lot of challenges too and is does not have a strong preference for traditional method has been classified as medium buy- in	For a teacher who explicitly said that she prefers the traditional method to ABL, we took the buy in to be low.

Factor	Parameter	Definition	High	Medium	Low
		because of these challenges has low buy in.			
Teacher	Attentiveness to all students	Ability of the teacher to be able to keep the whole class engaged when she is engaging with one group of children	A teacher who is able to keep the whole class engaged for most of the time. The teacher could achieve this by some defined processes in the class which are being followed, or by taking frequent rounds in the class, or by keeping a watchful eye on students and ensuring that they are constructively engaged.	Teachers who attempt to do this and succeed to a reasonable extent have been rated medium. This teacher may be able to keep the majority of the class engaged, but there would be sections/groups in the class which are not.	Those who are not able to see beyond the group/student that they are addressing have been rated low on this.
Teacher	ABL understanding	The extent of the teacher's understanding of the key elements of ABL - its purpose , principles and processes as shown by her classroom practices and interview responses, to what extent does the teacher	Teacher displays a good knowledge of the specific details of the current model including principles and practices	Knows the key points and features of the model. Knows the at least some of the procedures to be followed and	Teacher has limited information about the model and is not able to differentiate it from traditional teaching

Factor	Parameter	Definition	High	Medium	Low
		understand the state ABL model			
Teacher	Effort	The intent of the teacher to help children learn - as evidenced by her following up on tasks and ensuring completion, making material of her own, giving extra attention to students who need it and being able to find such students	There is evidence of the teacher doing many of(2 or more) of the things given here or shows any other signs of commitment	The teacher caters to the majority of the class but does not pay individual attention or go out of the way to help children learn	The teacher doesn't do the basic teaching - or teachers mechanicall y without paying attention to whether or not the students are following.
Teacher	Teaching method	How does the teacher transact content - what is the classroom arrangement, and basis for it	Limited text field - Whole class teaching, grouping based on ability, Grouping - card ladder, grouping - any other		
Teacher	Perceived benefits of ABL	List whatever is mentioned in the transcript			
Teacher	Perceived Challenges	List whatever is mentioned in the transcript			
Teacher	Views on Desirability	Does the teacher feel that it is beneficial to continue this model? How strongly does she feel so	Clearly sees benefits and hence prefers this to traditional teaching	Does not have strong views or does not see any strong reason to follow, but is not against following	Clearly prefers traditional teaching.

Factor	Parameter	Definition	High	Medium	Low
				it	
Resources	Availability		There is a variety of learning material in the class,(or shown during interview) including solid things which the children can handle, charts pictures, images, extra reading material etc.	Any resource present beyond the bare minimum textbook, notebook, cards and stationery - say charts, wall paintings etc.	resources are at minimal level - only textbook, notebook, cards and stationery are available
Resources	Usage (teacher/ student)	Usage of resources by teacher and students	The resources were used by the teacher for demonstration effectively and by students. Also if usage explained in interview and confirmed by students in case content being transacted does not require additional material. Also if locally available material used as resource	Some resources used by the teacher alone - and handling by students minimal	No use of any of the resources

Factor	Parameter	Definition	High	Medium	Low
Training & Support	Quality	Teacher perception of the quality of training that she received.	Explains what happens in the training and finds it useful.	says some bits of the training were useful/may give suggestions for improvement and says something about what happened in the training	Finds the trainings are not of any use or does not remember anything about the training
Training & Support	Quantity & recency Comments	Record anything the teacher says about when and how many trainings she attended			
Training & Support	Monitoring & Support quality	Teacher perception of the academic and administrative support she receives	Mentions academic support and administrative support - has a support system like a helpline etc. which is useful...	Does not mention academic support and only administrative support/monitoring happens	Support and monitoring visits happen very rarely or not at all
Training & Support	Monitoring & Support quantity comments	Record anything the teacher says about the monitoring and support visits			
HM	Challenges Comments	List whatever is mentioned in the transcript			
HM	Perception of support from top	HM perception of the academic and administrative support she receives	If she feels that good support is provided, material is supplied on time etc.	If she feels that regular visit happens and monitoring happens and some support is provided - administrative or academic	Regular visits do not happen at all and no kind of support is provided
HM	Perception of support from	-	-	-	-

Factor	Parameter	Definition	High	Medium	Low
	top Comments				
HM	Views on desirability	Does the teacher feel that it is beneficial to continue this model? How strongly does she feel so	Clearly sees benefits and hence prefers this to traditional teaching	Does not have strong views or does not see any strong reason to follow, but is not against following it	Clearly prefers traditional teaching.
Misc.	Any other notable points	-	-	-	-

4.3. LIST OF STAKEHOLDERS CONSULTED

Advisory Committee	Affiliation
Prof. Krishna Kumar	Former Director, NCERT, Chair person
Mr. M.P. Vijayakumar	Former SPD, SSA, Tamil Nadu
Mr. M. N. Baig	Former Director, Directorate of State Education Research and Training (DSERT), Karnataka
Mr. Padmanabha Rao Y.	Director, RIVER
Amukta Mahapatra	Director – Schoolscape
Sridhar Rajagopalan	MD, Educational Initiatives

Expert Panel	Affiliation
Ms. Amukta Mahapatra	Director - Schoolscape
Ms. Disha Nawani	Professor, Tata Institute of Social Sciences
Ms. Suchi Srinivas	Former Vice President, Educational Initiatives

Tools reviewed by	Affiliation
Prof. Farida Khan	Jamia Millia Islamia
Ms. Raakhi Banerji	
Ms. Meera Samson	Director, CORD
Prof. Rama Mathew	Delhi University

Tools reviewed by	Affiliation
Mr. ABL Srivastava	
Ms. Kavita Sharma	NCERT
Ms. Farah Farooqui	Jamia Millia Islamia University
Ms. Suzanna Brinkmann	Consultant, UNICEF

Stakeholder Name	Affiliation	State
Mr. Haresh Chowdhary	UNICEF	Gujarat
Mr. Piyush Suttar	Quality Education Cell, SSA	Gujarat
Mr.Dinesh Desai	Quality Education Cell, SSA	Gujarat
Mr. Bhavesh Pandya	Resource person, Core team Pragna	Gujarat
Mr. Prakash Suthar	Quality Education Cell, SSA	Gujarat
Dr. Anandalakshmi	Expert, Child Development and Education	Tamil Nadu
Mr. Brijmohan Istwal		Rajasthan
Ms, Abha Beniwal	Deputy Comissionar SSA	Rajasthan
Dr. Nagendra Nagpal	CERP	Rajasthan
Mr. Hriday Kant Dewan	Vidya Bhawan	Rajasthan
Dr. Yogendra Upadhyay	Director, Bodh	Rajasthan
Mr. Lokesh khare	SSA	Madhya Pradesh
Mr. Rajesh Khindri	Eklavya	Madhya Pradesh
Ms.Mamta Sujit	SPD	Jharkhand
Mr. Pradeep Choubey,	JPEC	Jharkhand
Mr. Baikunth Pandey	Head JEPC	Jharkhand
Mr. Pandu Ranga Swamy	coordinating for ABL project SCERT	Andhra Pradesh
Dr.Krishna Murthy	State coordinator for ABL study in DSERT	Karnataka
Mr. Reddy Prakash	consultant UNICEF	Andhra Pradesh
Mr D N Murthy	consultant UNICEF	Andhra Pradesh
Mr. Gopal Reddy	Director SCERT	Andhra Pradesh
Mr Upender Reddy	Prof. And Head, Curriculum and textbooks Dept.	Andhra Pradesh
Mrs Rajya Lakshmi	SAMO	Andhra Pradesh
Prof. Venugopal Reddy		Andhra Pradesh
Dr. Prasad		Andhra Pradesh
Subir Shukla	Principal Co-ordinator, IGNUS-ERG	
Ms.Sumitra M Gautama	KFI, - Key player curriculum revision in 2009	Tamil Nadu
Mr.Gautama	KFI, Director, Pathshala	Tamil Nadu
Dr. Suchitra (Ramkumar)	KFI Key player in curriculum revision - 2009	Tamil Nadu
Dr. S Kannapan	Director SCERT Tamil Nadu	Tamil Nadu
Dr. Nagarajmurugan	Joint Director, SSA	Tamil Nadu
Mr. Ellangovan	Director, Directorate of Elementary Education	Tamil Nadu
Ms.Shasikala	Joint Director, SSA	Tamil Nadu

Stakeholder Name	Affiliation	State
Ms. Sridevi	Joint Director, SCERT	Tamil Nadu
Ms. Pooja Kulkarni	SPD, SSA	Tamil Nadu
Ms. Malathy	Consultant, SSA	Tamil Nadu

4.4. PERMISSION LETTERS

PERMISSION LETTER – MHRD

F.No.23-19/2010.EE-8
Government of India
Ministry of Human Resource Development
Department of School Education & Literacy

Dated: 23rd August, 2013

To,

1. State Project Director,
Sarva Shiksha Abhiyan
Andhra Pradesh, Gujarat, Jharkhand, Karnataka,
Madhya Pradesh, Rajasthan and Tamil Nadu.

2. Director, SCERT
Andhra Pradesh, Gujarat, Jharkhand, Karnataka,
Madhya Pradesh, Rajasthan and Tamil Nadu

Sub.: ABL Study by UNICEF.

Sir/Madam,

UNICEF is proposing to do an assessment of Activity Based Learning (ABL) initiative in your State and the proposed terms of reference of the study are attached. Education Initiatives have been selected by the UNICEF as the agency for conducting this study.

2. You are requested to extend your cooperation & facilitation in the conduct of this study. For further details you may contact Education Specialist, Mr. Ramachandra Rao Begur, UNICEF (rbegur@unicef.org, 0981-067-1077). The entire cost of the study will be borne by UNICEF.

Encl. As above

Your faithfully,
Pahwa
(Jyoti Pahwa)
Under Secretary

SAMPLE STATE PERMISSION LETTER – GUJARAT

શિક્ષણનો અધિકાર
સર્વ શિક્ષા અભિયાન
સૌ ભણે સૌ આગળ વધે

ગુજરાત કાઉન્સિલ ઓફ એલીમેન્ટરી એજયુકેશન
સ્ટેટ પ્રોજેકટ કચેરી,
સર્વ શિક્ષા અભિયાન, સેકટર–૧૭, ગાંધીનગર.
ફેકસ નંબર : ૦૭૯–૨૩૨૩૨૪૩૬
E-mail : gecell@gmail.com
Tollfree No. : 1800 233 7965

પત્રક્રમાંક નં.: એસએસએ/કયુઈસેલ/૨૦૧૪/ [illegible] તા.૧૯/૧૧/૨૦૧૪

પ્રતિ,
જિલ્લા પ્રોજેકટ કો.ઓર્ડિનેટર અને
જિલ્લા પ્રાથમિક શિક્ષણાધિકારીશ્રી,
રાજકોટ,વલસાડ અને મહેસાણા

વિષય :–ABL STUDY અંતર્ગત તાલીમ અને સર્વે કામગીરી બાબત.
સંદર્ભ :–(૧)યુનિસેફ પત્ર ક્રમાંક GAN/905/2014/382 તા.૨૦/૧૦/૨૦૧૪
(૨)માન.એસપીડીશ્રીની તા.૭/૧૧/૨૦૧૪ના રોજની નોંધ ઉપર મળેલ મંજૂરી અન્વયે.
(૩)યુનિસેફ ગુજરાત –ઈમેઈલ,તા.૧૯/૧૧/૧૪

ઉપરોકત વિષય અને સંદર્ભે જણાવવાનું કે આપના જિલ્લામાં એજયુકેશન ઈનેશ્યેટીવ્ઝ ધ્વારા પ્રજ્ઞા શાળાઓમાં સ્ટડી હાથ ધરવામાં આવી રહયો છે.જે અંતર્ગત ફેઝ–૩ની કામગીરી/પૂર્વ તૈયારી માટે પત્ર ક્રમાંક નં એસએસએ/કયુઈસેલ/૨૦૧૪/૩૯૫૯૨ –૫૯૫,તા.૧૭/૧૧/૨૦૧૪ અન્વયે જણાવવામાં આવેલ હતું.જેની કામગીરી પૂર્ણ કરવામાં આવેલ હશે.

એજયુકેશન ઈનૈશ્યેટીવ્ઝ ધ્વારા સ્ટડી અંતર્ગત સર્વેની કામગીરીમાં જોડાનાર ફિલ્ડ ઈન્વીસ્ટીગેટર માટેની તાલીમ નીચેની મુજબ યોજાનાર છે.સંદર્ભ ૨ અન્વયે તાલીમનું આયોજન તથા તાલીમ પછી આપના જિલ્લામાં એજયુકેશન ઈનેશ્યેટીવ્ઝના આયોજન મુજબ તા.૧/૧૨/૨૦૧૪ થી તા.૮/૧૨/૨૦૧૪ દરમ્યાન સર્વેની કામગીરી હાથ ધરવામાં આવનાર છે.જે અન્વયે પસંદ કરવામાં આવનાર શાળાઓને સ્ટડી અંતર્ગતની જાણ કરવા વિનંતિ છે.

તાલીમ સ્થળ(સમય– સવારે ૧૧ થી ૧૭ કલાક)

જિલ્લો	સ્થળ	તારીખ
રાજકોટ	બીઆરસી ભવન રાજકોટ,કોઠારીયા તાલુકા પ્રાથમિક શાળા કેમ્પસ. કોઠારીયા રોડ,રાજકોટ	૨૭/૧૧/૨૦૧૪
વલસાડ	બીઆરસી ભવન પારડી,પારડી પ્રાથમિક શાળા કેમ્પસ,તા.પારડી	૨૫/૧૧/૨૦૧૪
મહેસાણા	બીઆરસી ભવન વીસનગર,કાંસા પ્રાથમિક શાળા કેમ્પસ,તા.વીસનગર	૨૬/૧૧/૨૦૧૪

ઓફિસર ઈન્ચાર્જ ટીચર્સ ટ્રેનીગ
એસપીઓ,એસએસએ
ગાંધીનગર

નકલ રવાના જાણ સારૂ
–શ્રી ડો. પુષ્પા જોષી,સ્પેશ્યાલિસ્ટ એજયુકેશન,યુનિસેફ,ગુજરાત,સેકટર–૧૯,ગાંધીનગર
–શ્રી રાઘવ રસ્તોગી,એજયુકેશન ઈનેશ્યેટીવ્ઝ,અમદાવાદ

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4.5. CHECKS ON LEARNING ACHIEVEMENT

The following trends which were seen in the data

- Dips in the overall scores on the parallel papers (Stage 2 to Stage 3) – these dips have been observed mostly in the schools identified among the top 15% of their states in stage 2
- Dips have been observed even on the identical repeat questions from Stage 2 to Stage 3
- Unusually high overall scores in some districts and states in Stage 2, which have deflated in stage 3
- High performing schools saw similar patterns of student responses in both Stage 2 and 3

The identified common students across the two stages also saw similar trends – high performing students (with an overall performance of 85% and above) saw dips in their performance, on both the full paper as well as on the common questions from stage 2. Based on a detailed exploration and analysis of these inconsistencies:

- While inconsistencies and surprising trends have been observed in both stages, the Stage 3 achievement test scores are more reliable and indicative of the learning levels of the schools, barring a few exceptions.
- Since inconsistencies are widespread in Stage 2, learning improvements across the two stages cannot be highlighted. In addition, the time gap between the two stages as well as the timings of the tests may not be conducive to a comparison of the two scores.

DIPS IN STAGE 2 TOP PERFORMING SCHOOLS IN THE PARALLEL PAPER AND ON IDENTICAL REPEATS IS INDICATIVE OF STAGE 2 INCONSISTENCIES

In Stage 2, 857 schools were tested in Language and Maths. Based on the school performance in a class, the top 15% and bottom 15% were subsampled for another learning achievement test, which was a parallel test (similar format, skills, and difficulty). We attempted as far as possible to test the same cohort of students in each school. The performance of the common schools on the full paper is given below, by state and band.

Overall Paper Averages - 235 common schools - 7 states								
Row Labels	S2 2L	S3 3L	S2 2M	S3 3M	S2 3L	S3 4L	S2 3M	S3 4M
Andhra Pradesh	**73**	**67**	**79**	**72**	**71**	**60**	**69**	**60**
Bottom	56	59	67	65	61	56	60	57
Top	92	75	94	79	84	66	79	64
Gujarat	**81**	**75**	**84**	**75**	**76**	**75**	**80**	**71**
Bottom	67	76	73	76	61	71	67	68
Top	94	73	94	75	90	78	92	73
Jharkhand	**64**	**60**	**73**	**57**	**49**	**54**	**55**	**49**
Bottom	45	55	59	54	29	43	36	40
Top	83	65	86	60	69	66	72	57
Karnataka	**81**	**85**	**86**	**84**	**72**	**78**	**71**	**79**
Bottom	69	83	75	78	52	73	48	73
Top	93	87	96	90	91	83	92	84
Madhya Pradesh	**47**	**59**	**54**	**62**	**40**	**56**	**46**	**52**
Bottom	31	52	40	58	21	51	29	50
Top	63	66	69	67	60	62	65	55
Rajasthan	**54**	**60**	**65**	**57**	**44**	**56**	**50**	**55**
Bottom	33	59	49	55	27	54	33	50
Top	76	61	83	58	63	59	69	61
Tamil Nadu	**74**	**76**	**76**	**75**	**61**	**70**	**65**	**70**
Bottom	65	79	67	82	56	71	60	71
Top	83	74	84	69	65	70	71	69
Grand Total	**67**	**69**	**74**	**69**	**59**	**65**	**62**	**63**

On the overall paper (parallel papers) the schools identified as the top 15% in the states saw dips in their overall scores – which is surprising and can be indicative of irregularities in Stage 2. It is to be noted that the students in Stage 3 achievement test were taking a test of grade minus two competencies.

The scores in Stage 3 seem to be lower in the top band schools, despite being a grade minus two paper. At a state level, the top band schools are averaging at 75%- 85% in Karnataka, AP and Gujarat, in comparison to the 90% and above score sin Stage 2, which seem to be unusually high.

The bottom 15% schools identified in Stage 2 broadly saw gains in performance. We observed the same test on identical repeats from the Stage 2 paper in the Stage 3 paper.

Identical Repeats - Gains and Losses in percentage points				
State	Class 2 to 3 Language	Class 2 to 3 Maths	Class 3 to 4 Language	Class 3 to 4 Maths
Andhra Pradesh				
Bottom Band	6%	3%	-4%	0%
Top Band	-16%	-15%	-14%	-16%
Gujarat				
Bottom Band	21%	7%	12%	5%
Top Band	-15%	-20%	-7%	-18%
Jharkhand				
Bottom Band	27%	2%	12%	5%
Top Band	-8%	-26%	-4%	-13%
Karnataka				
Bottom Band	22%	6%	23%	27%
Top Band	-2%	-6%	-5%	-7%
Madhya Pradesh				
Bottom Band	34%	25%	26%	18%
Top Band	16%	-2%	4%	-7%
Rajasthan				
Bottom Band	33%	12%	21%	18%
Top Band	-11%	-23%	-2%	-5%
Tamil Nadu				
Bottom Band	24%	21%	24%	13%
Top Band	-6%	-8%	10%	5%

DIPS IN PERFORMANCE SEEN IN THE HIGH PERFORMING STUDENTS

We checked how the common students across the subsampled schools are performing on the identical repeats from Stage 2 in the Stage 3 paper. It is seen that Students who scored more than 85% on the full stage 2 paper have seen dips in their scores on the identical repeat questions – indicative of inconsistencies or copying in Stage 2

Class 3 to Class 4 Maths - Gain/ dip on identical repeats by cohort of students and their score band in Stage 2

Student - band	Gain >75%	Gain bw 40-75%	Gain bw 10%-40%	No change	Loss bw 10%-40%	Loss bw 40-75%	Loss >75%
Overall score less than 30%	5%	21%	47%	12%	15%		
Overall score between 30% - 55%		13%	45%	13%	24%	4%	
Overall score between 55%-85%		2%	35%	17%	34%	10%	2%
Overall score greater than 85%			6%	18%	55%	14%	7%

SCHOOL PERFORMANCE ON LOW PERFORMING QUESTIONS

We identified questions in the test papers where performance was low (less than 60%) across the students tested. The objective of this exercise was to check if a classroom has seen an overall high performance on nationally low performing or difficult questions. In addition to a high performance, if the student responses on the full paper have high similarities, this can be a broad indicator of cheating. We have taken a qsim cut-off of 5, as in our existing database of third party assessments, classrooms scoring over 85% on the full paper have qsim indices ranging from higher than 5. (5 here is the outlier adjusted minimum qsim in a third party assessment conducted by EI)

Stage 2 Achievement Survey				
Head	**2 Language**	**2 Maths**	**3 Language**	**3 Maths**
Number of schools where avg performance on low performing questions is more than 85% and Qsim index on full paper is less than 5[1]	117	109	74	64
Percentage of total tested schools (Total – 857)	13.6%	12.7%	8.6%	7.4%
Stage 3 Achievement Survey				
Head	**3 Language**	**3 Maths**	**4 Language**	**4 Maths**
Number of schools where avg performance on low performing questions is more than 85% and Qsim index on full paper is less than 5	15	28	9	20
Percentage of total tested schools (Total – 235)	6.3%	11.9%	3.8%	8.5%

EXCEPTIONS

While the relative state performances do not see a drastic shift, a few exceptions were observed – subsampled schools in Cuddalore have large gains in stage 3, and the relative district rank moves from 11 in Stage 2 to 3 Stage 3.

[1] 5 as a qsim cutoff taken based on MSDF benchmarking data – schools scoring 85% and above had a minimum of 5 as qsim (outlier adjusted)

4.6. LEARNING ACHIEVEMENT BY STATE

LANGUAGE AND MATHS PAPERS – STAGE 2

State	Language N	Language Avg	Language SD	Maths N	Maths Avg	Maths SD
Class 2	**17389**	**66.5**	**26.5**	**17324**	**73.3**	**23.0**
AP	2039	71.1	22.1	2047	78.9	18.2
GJ	3598	74.7	24.4	3587	78.3	21.1
JH	2183	60.5	25.5	2180	70.1	22.2
KA	2458	81.2	17.7	2458	85.4	15.5
MP	2439	43.6	25.4	2439	55.4	24.8
RJ	1834	50.5	27.9	1802	62.3	26.0
TN	2838	74.5	19.4	2811	77.4	18.0
Class 3	**18595**	**59.5**	**28.0**	**18584**	**63.5**	**25.4**
AP	2351	65.9	24.4	2350	68.4	22.7
GJ	3696	71.5	23.6	3693	75.1	21.7
JH	2459	49.0	25.4	2455	56.1	23.3
KA	2472	77.4	22.4	2475	75.8	20.8
MP	2400	37.7	25.3	2409	43.9	23.8
RJ	2174	44.4	26.4	2159	51.0	26.8
TN	3043	61.9	25.1	3043	65.8	21.4

LANGUAGE AND MATHS PAPERS – STAGE 3

State	Language N	Language Avg	Language SD	Maths N	Maths Avg	Maths SD
Class 3	**4847**	**71.6**	**22.2**	**5282**	**70.5**	**28.4**
AP	439	69.1	23.3	441	72.3	22.7
GJ	1024	74.6	18.7	1100	75.3	25.3
JH	589	64.0	23.3	692	60.0	31.4
KA	808	86.0	14.1	852	83.5	23.2
MP	717	60.2	22.8	787	63.2	27.4
RJ	488	59.3	26.6	596	54.5	33.4
TN	782	77.8	15.7	814	76.9	23.6
Class 4	**5125**	**67.0**	**23.4**	**5109**	**64.7**	**22.9**
AP	504	63.3	23.5	498	62.7	22.8
GJ	1048	75.5	18.3	1046	72.0	18.9
JH	669	57.9	25.4	669	51.2	20.3
KA	771	78.0	21.2	762	78.1	20.8

State	Language N	Language Avg	Language SD	Maths N	Maths Avg	Maths SD
MP	721	58.0	23.5	723	54.1	20.2
RJ	580	56.6	24.4	577	56.0	24.4
TN	832	70.8	18.4	834	70.8	19.7

HIGHER ORDER PAPERS – STAGE 3

State	Language N	Language Avg	Language SD	Maths N	Maths Avg	Maths SD
Class 3	**5305**	**54.2**	**27.4**	**5305**	**52.8**	**27.7**
AP	462	51.0	24.4	462	52.0	28.0
GJ	1100	59.6	24.2	1100	57.2	24.6
JH	692	41.0	24.0	692	36.3	21.0
KA	854	68.6	28.4	854	68.8	28.8
MP	787	46.5	22.7	787	42.9	21.5
RJ	596	44.4	26.8	596	44.7	28.2
TN	814	59.6	29.3	814	59.8	27.4
Class 4	**5568**	**60.0**	**28.7**	**5568**	**37.0**	**25.1**
AP	532	54.5	26.3	532	37.0	24.3
GJ	1096	68.0	27.4	1096	42.4	25.9
JH	792	46.5	28.3	792	23.9	15.7
KA	810	69.4	29.0	810	49.7	28.8
MP	780	55.0	25.2	780	28.0	19.8
RJ	686	54.0	28.7	686	36.7	25.4
TN	872	66.3	27.5	872	38.6	23.7

4.7. EFFECT SIZE AND NORMALISATION OF SCORES

EFFECT SIZE

Effect size is a standard metric of expressing the difference in performance between two groups. It indicates the standardised difference between means of two different groups. It is used internationally & well accepted in research and literature. Key points-

- A way to quantify the performance gaps on a standard scale so that it can be interpreted and understood easily
- Expressed in terms of Standard Deviation (SD) unit
- SD should be calculated from the sample which is representative of the entire population
- Applicable for normal distribution curves only

Measuring relative gain:

$$d = (\text{Mean}_{\text{Treatment}} - \text{Mean}_{\text{Control}}) / SD$$

Measuring absolute gain:

$$d = (\text{Mean}_{\text{End of Treatment}} - \text{Mean}_{\text{Beginning of Treatment}}) / SD$$

The other reason for using the effect size metric is that most research studies and literature in education use this metric to express differences in learning levels or impact of different interventions - this allows us to compare the effect sizes we observe in MSDF supported interventions with numbers we see in other research studies.

What is a significant effect size

In our analysis, we are using **Cohen's d Convention** for small, medium and large effects which is used when comparing averages of two different groups. Cohen's d is calculated by the dividing the difference of means of the two groups by the standard deviation of the reference group. The divisor could also be a combined standard deviation of the two groups together. In that case it will be known as the pooled standard deviation. Since we are always comparing where a group stands in relation to the reference group we decided to use the standard deviation of the reference group. In general we use the standard table below to interpret effect sizes.

Cohen's d	Effect Size
0.2 - 0.5	Small
0.5 - 0.8	Medium
> 0.8	Large

Since Cohen's d convention is generic and applicable to wide range of studies we also referred to research literature related to effect sizes which is specifically applicable in the field of education. According to the research in education an effect size of 0.25 to 0.30 SD should be considered significantly large. Find below citations from 2 papers which talk about significant effect size in the field of education-

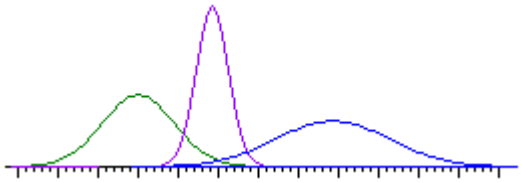
What Works Clearinghouse: Procedures and Standards Handbook (Version 3.0)
"For the WWC, effect sizes of 0.25 standard deviations or larger are considered to be substantively important. Effect sizes at least this large are interpreted as a qualified positive (or negative) effect, even though they may not reach statistical significance in a given study."

Abhijit Banerjee, Paul Glewwe, Shawn Powers, and Melanie Wasserman. 2013. "Expanding Access and Increasing Student Learning in Post-Primary Education in Developing Countries: A Review of the Evidence" Working Paper. 9 April. - *"In the education literature, a program or policy impact of less than 0.1 standard deviations is typically considered to be a small effect, while more than 0.3 standard deviations is considered a large effect, and 0.5 standard deviations would be a very large effect"*

NORMALIZATION OF SCORES

The normal distribution describes a theoretical distribution of values that follow a specific mathematical formula. Although normal distributions may have different means and standard deviations, all normal distributions are "bell-curve" shaped, symmetrical with a peak at the mean (see Figure 1 for examples). Tails of a normal distribution are asymptotic, indefinitely decreasing but never touching the *x*-axis. The total area under the standardized normal curve sums to 1.00 (i.e., 100%).

Figure 2 Three normal distributions whose means and standard deviations vary



Some measurements in the natural world may approximate normal distributions (e.g., perhaps the weights of adult hippopotamuses, heights of palm trees, students' IQs, and people's happiness). The normal distribution may characterize distributions of individual data points in some populations of scores, a large sample drawn from such a population, or the theoretical distribution of sample statistics such as the mean. For more information on the normal distribution and its history, see this article from Wikipedia.

The normal distribution is important in inferential statistics because certain theoretical distributions, such as the distribution of possible means, can be very close to normal even when the population distributions are not normal.

By using the areas underneath normal distributions, we can calculate probabilities of different outcomes, including how likely it is to obtain a mean within a certain range.

Standard Normal Distributions and *Z* Scores

A normal distribution that is standardized (so that it has a mean of 0 and a *SD* of 1) is called the standard normal distribution, or the normal distribution of *z*-scores. If we know the mean *m* ("mu"), and standard deviation *s* ("sigma") of a set of scores which are normally distributed, we can standardize each "raw" score, *x*, by converting it into a *z* score by using the following formula on each individual score:

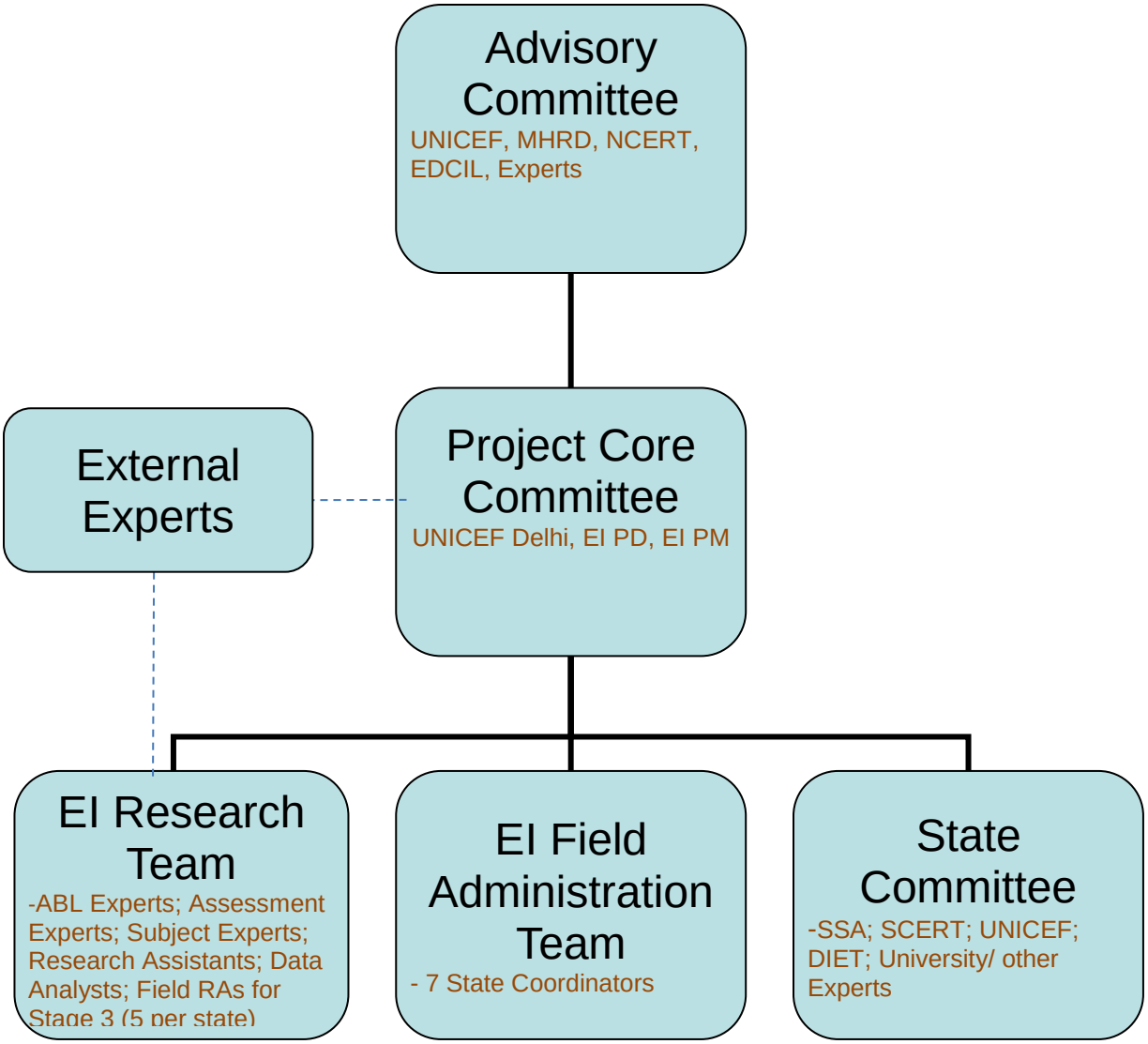
$$z = \frac{x - \mu}{\sigma}$$

A *z* score reflects how many standard deviations above or below the population mean a raw score is. For instance, on a scale that has a mean of 500 and a standard deviation of 100, a score of 450 would equal a *z* score of (450-500)/100 = -50/100 = -0.50, which indicates that

the score is half a standard deviation below the mean. Note that converting *x* scores to *z* scores does NOT change the shape of the distribution. The distribution of z scores is normal if and only if the distribution of *x* is normal.

4.8. PROJECT ORGANISATIONAL STRUCTURE

The chart below describes the project organization:



The research was guided by an advisory committee chaired by Dr. Krishna Kumar, ex-Director, NCERT. The advisory committee had rich expertise in education, assessment, ABL implementation, activity based learning and educational research. The project was led by a Project Core Committee that comprised of project in-charges from UNICEF Delhi and EI. The Advisory Committee met the Project Core Committee periodically and guided the research with their inputs.

An External Experts Team worked with the Project Core Committee to strengthen the work through their research expertise. A State Committee was formed through the state visits, comprising of the SSA SPD, the SCERT Head, ABL in-charges in the state, EI team and relevant experts; the Committee provided the necessary support and guidance for a successful conduct of the study in the state. The project was executed on a day to day basis by EI Project Teams comprising of a Research Team and a Field Administration Team. An extended team of External Experts was involved in the review of the tools and in the material review.

Chapter 5

5.1. NCF AND CFLC PRINCIPLES

NCF, 2005	CFLC Principle
Availability of minimum infrastructure and material facilities, and support for planning a flexible daily schedule, are critical for improved teacher performance (Chapter 5 summary)	Physical environment conducive to learning
The role of teachers is to provide a safe space for children to express themselves, and simultaneously to build in certain forms of interactions. They need to step out of the role of 'moral authority' and learn to listen with empathy and without judgement, and to enable children to listen to each other… classrooms should be spaces for discussing processes of decision making, for questioning the basis of their decisions, and for making informed choices. (section 2.4.5)	Democratic processes/ relationships in the classroom
It is important to create an inclusive environment in the classroom for all children, especially those who are at risk of marginalisation, for instance, children with disabilities.(Section 2.3.4)	Equitable and inclusive learning environment
Learning tasks that are designed to ensure that children will be encouraged to seek out knowledge from sites other than the textbook, in their own experience, in the experiences of people at home and in the community, in libraries and other sites outside the school, communicate the philosophy that learning and knowledge are to be sought out, authenticated and thereby constructed, and that neither the textbook nor the teacher is an authority. (Section 2.4.3)	Variety of learning materials in use
Learner engagement for construction of knowledge and fostering of creativity (Summary: Chapter 2)	Every child engaged
Making examinations more flexible and integrated with classroom life (Guiding Principle: Chapter 1)	Continuous assessment integrated with the learning process
Activities could enable teachers to give individualised attention to children, and to make alterations in a task depending on their requirements and variations in the level of interest. (Section 2.4.4)	Provision for self-paced and individualized learning
Children learn in a variety of ways—through experience, making and doing things, experimentation, reading, discussion, asking, listening, thinking and reflecting, and expressing oneself in speech, movement or writing—both individually and with others. They require opportunities of all these kinds in the course of their development. (Section 2.3.3)	Opportunities to learn through different modes
Learning must be paced so that it allows learners to engage with	Meaningful, learning-oriented

NCF, 2005	CFLC Principle
concepts and deepen understanding, rather than remembering only to forget after examinations. At the same time learning must provide variety and challenge, and be interesting and engaging. Boredom is a sign that the task may have become mechanically repetitive for the child and of little cognitive value. (Section 2.3.3)	activities
Schools must provide opportunities to question, enquire, debate, reflect, and arrive at concepts or create new ideas. An element of challenge is critical for the process of active engagement and learning various concepts, skills and positions through the process. (Section 2.4.1)	Scope for higher order thinking and critical questioning
…connecting knowledge to life outside the school (guiding principle chapter 1) *In this document, we emphasise the significance of contextualizing education: of situating learning in the context of the child's world, and of making the boundary between the school and its natural and social environment porous. (Section 2.7)*	Contextualization to children's everyday world and community
Treatment of children's learning as an isolated outcome should be replaced by the application of developmental norms that assume a holistic pattern of growth in motivation and capacity (Section 5.1)	Attention to holistic, all-round development

5.2. CLASSROOM PARAMETERS DEFINITIONS

EVERY CHILD ENGAGED - STUDENT ENGAGEMENT

One of the key indicators considered in a CFLC classroom is the engagement of students in it. It goes without saying that the students have to be engaged with the classroom processes for learning to happen. We looked for certain signs indicating student engagement and gauged the engagement based on the presence or absence of these signs.

- Students responding to the teacher's questions – is it only a few students who respond or are most of the students responding?
- Students asking questions to the teacher on the learning activity
- Students interacting with teacher and peers on the learning activity
- The interest that students show to do the assigned task – whether they continue the task even when there is no teacher supervision
- Whether they are moving on to the next task on their own
- Students not totally idle in the class, or spending large amounts of time on activities unrelated to learning

A classroom in which many of the signs are present has been classified as a highly engaged classroom.

Excerpts from Highly Engaged Classrooms

The students seem engrossed and engaged in their work, they were all doing different activities, and sitting as per Pragna grouping, some were reading, some were writing in their slates, some were reading aloud. They had begun their work even before the teacher entered the room. They approached the teacher as and when they had an issue, or to get their notebook checked, the children were also helping each other learn. There were some children who were waiting for their partner to complete the previous card, and one CWSN child was idle.

The children were lively and eager in the class, they were responding in unison when the teacher asked a question. The teacher also asked the children to come to the board one by one and they answered correctly, and the others were saying "sir, main" (Sir, I want to answer) every time. Their work was checked by each other - they circled the wrong answer and gave each other a score, and 2 students said this is correct why has he marked wrong and the teacher came and explained. The teacher asked almost every child to come to the board, and except one child, all children seemed eager to come to the board and do the work. The teacher asked a question and students responded one by one. At one point, the teacher forgot to complete an exercise on the board and the students reminded the teacher.

There were some classrooms where only some students were focused on their task and others were just sitting around or slowly taking the task to completion with a lot of distraction in between. In some classrooms most students were engaged in a task (often a reading or writing task) and it appeared that they were doing it mechanically for the most part. They did not seem too enthusiastic about doing it and the interaction between students and teachers were minimal. The engagement levels in these classrooms have been rated medium.

Excerpts from Classrooms where student engagement is Medium

Most students were busy with something. Some are simply copying problems from the board and not really solving. Engagement was restricted to only few children whom teacher was primarily attending to. For instance, children like Shadia, Guleestaan, Armaan, Saleem and Irfaan were very attentive in the class. These children were seen solving problems independently, with complete involvement and made sure to get their notebooks checked instantly. Most other children were copying answers from others.

The teacher leaves the classroom, leaving the students unattended for a few minutes. In this interval, the kids are idle and play or get up and run around. Very few students approached the teacher for any doubt. Mostly, when the teacher asked them if their work was progressing, that was when they asked her anything. These were fast learners, who were also assigned many of the tasks by the teacher, such as 'teaching' others who were lagging behind. On the other hand, there were individuals who were idle most of the time. There were several boys who remained idle for extended periods of time. They progressed through an activity/exercise rather slowly, and were frequently getting stuck with a doubt which wasn't redressed.

A classroom where most students were not engaged has been rated low on engagement.

Excerpts from Classrooms where student Engagement is Low

Students were largely doing their own things, playing with each other, fighting, or crying. Only when the teacher sat next to them they would focus on a task. Even when the teacher assigned some task, the students would not complete it and leave it without completing it. They wanted to tear the cards. They had no idea about how to take the next card or mark in pragati nota (progress chart). A couple of students placed Maths grouping charts in the Kannada class. They were moving in and out of the group without really understanding. Some students were doing their work properly though and getting it checked by the teacher. All the students sang the songs enthusiastically as whole class.

Teacher was correcting the children notebooks for the most of the time. Children in all the groups became restless, they started talking and some were staring at the entrance for a very longer time. Children were waiting for the teachers to attend to them. One child in Group 5 was not attended by the teacher even once in the entire three day observation. This child did not take the next card. Children were not motivated themselves to go faster, teacher always insisted them to take next cards and progress faster. Even the students who had finished solving problems in their notebooks were waiting for the teacher to tell them what to do next. Very few children volunteered when the teacher asked to come and introduce a concept. Same set of students answered the questions asked by the teacher.

FEAR FREE ENVIRONMENT

An atmosphere in which students are free to express themselves is one of the necessities for child friendly learning. They should not be inhibited by the fear of punishment or ridicule. We viewed for signs such as the following as positive indicators:

- Physical movement in the classroom
- Active participation of children in the class, by responding to teacher and asking her questions
- Absence of physical punishment, or intimidation of students in any form
- Students assuming responsibility for their learning – for example taking cards or other TLM on their own

The classroom descriptions from some of our highly fear free classrooms read thus.

Excerpts from Highly fear free classrooms

Students sit in the courtyard under a tree, they sit however they like. One child was rolling around in the class without fear. The teacher sat on a chair and explained- the students crowded around him put their hands on the chair around the teacher. Teacher sent all the children to the bathroom together, and when back they copied homework while talking to each other and joking with each other. One child was humming while doing his work.

The class is very interactive. Majority of children participate, pay attention and do their work. The teacher ensures that all are paying attention. His tone is genial but at the same time he has good

control on the class. If they struggled with answers they were encouraged to think. Children approached the teacher if they were stuck or had doubts. The students were found to be engaged and participating even when the teacher was facing the blackboard.

A classroom that has been rated medium on this parameter may lack physical movement or may see the teacher using a harsh tone with the students, or scolding or punishing them lightly.

Excerpts from classrooms with Medium fear free environment

The students were freely answering the teacher's questions and a few of them were even asking questions to the teacher. The students were free to move around in the classroom. However, the teacher tries to keep the class at more or less the same level, by not letting the leaders go too fast / ahead of the rest of the class. Teacher was also seen scolding the students and threatening them with demeaning punishment if their work was not done, but this was not implemented.

The students were answering the teacher's questions, although only a few students in the front were repeatedly answering. The students appeared to be slightly scared of the teacher and appeared more unrestrained in her absence. There are a few students who are not involved in the classroom proceedings at all. These students are sitting towards the back of the classroom; some of them are seen idling mostly.

Classrooms which have been rated low on this parameter are the ones where either the teacher punishes, or ones where there was an atmosphere of fear and the students were reluctant to talk.

Excerpts from classrooms with Low fear free environment

The teacher hits the boy on his forearm, resulting in a loud resonating slapping noise. The class goes silent and everyone looks at the teacher. Students were hesitating to ask the teacher doubts unless the teacher approaches them. They move about in the class. The teacher and his method of teaching seemed non-conducive for participatory learning. He used a loud voice, and addressed individual students like he was addressing the entire class.

Number of instances of physical punishment noted, e.g. teaching beating and pulling ears etc. She also threatens students with "you will not move to another group!" kind of statements. There are a couple of occasions where students cry in fear and she later consoles them. Students do ask if they find doubt and approach when they finished writing or reading. Some of them go to show her what they have written and read out to her.

OPPORTUNITIES FOR PEER LEARNING

We looked for the learning interactions between peers whether there was a provision created for it and if students were approaching peers oftener or easier than they approach the teacher for doubts, if students voluntarily help others who may have a difficulty and if there are frequent/many learning interactions between students.

Excerpts from classroom with High opportunities of peer-learning

Class 2 children helped the class 1 children in picking up the cards and marking pragati nota (progress chart). Students corrected each other while reading vachakas (readers). Students were also seen discussing addition problems using stones and asking each other questions.

Several instances of students asking, discussing and helping each other. It seems as if students preferred asking peers more than the teacher. If a student finishes a task earlier, he/she starts helping other students in the group.

Classrooms which had comments as above have been rated high on peer learning, whereas classrooms where the only interactions between students are copying from another's notebooks or if learning interactions between students are few and far between, are rated as medium. There were classrooms where interactions between students were discouraged, or were not present at all. Such classrooms have been rated as low.

Excerpts from classroom with Medium opportunities of peer learning

Many instances of direct copying from each other. Few instances of students asking another student like - how to do this, how have you done this.

Individual students within this sub-group showed each other their workbooks, textbooks, and in some cases explained to each other how a particular activity/exercise was to be done. However, in cases of activities which involved groups by design (for example, discussions), very little coordination was visible. The teacher had to explain to one group what 'discussion' meant, and even after this very little discussion happened.

Excerpts from classroom with Low opportunities of peer learning

Students do talk to each other but it's mostly a chit-chat or a fight. Some instances of copying from each other's notebooks are observed.

The teacher did make students sit in groups. There were some instances of children helping each other, but the more frequently students were asking the teacher - this seemed to be the general practice.

OPPORTUNITIES FOR SELF-PACED LEARNING

To understand the extent of self-paced learning happening in the class, we looked at students' ladder positions and if they were doing different activities at any given point of time. We studied the spread of the ladder positions of students wherever this data was available and took a wide spread in this along with the fact that there was no clustering of students at some cards as a sign of high self-paced learning. Students sitting in the same group and doing different activities was also considered as a sign of high self-paced learning. In classes where there were different activities seen, but groups of students

were doing the same activity we have rated self-paced learning medium. Classrooms where there was limited variation (like say within a milestone) have also been rated as medium. Classes where whole class teaching is being practiced, but the teacher gives some scope for students to do things at their pace have also been rated medium. Classrooms where the teacher insists that everyone finishes the task at the same time, or goads students to keep pace with others have been rated low on self-paced learning.

Excerpts of classrooms with High opportunities of Self-paced Learning

Students were at different positions on the ladder and were seen doing different things. RA also checked several workbooks and all the previous pages were complete and checked by the teacher. Students were seen between Card 105 to 111.

Excerpts of classrooms with Medium opportunities of Self-paced Learning

Card ladder system is being followed and students are progressing at their pace. There is a lot of variation in where they are. "In class one nine students are at 4th milestone and 99 step, one girl (Navya) is in 7th milestone 130 steps, Gayathri, Kempraj and Kirthan are in fifth mile stone and 112 steps, only Prasanna is in 3rd milestone and 99 step. In class 2 seven of the students are clustered around 4&5 the milestone and between 70-86 steps, Meghana, Jaylakshmi and Pallavi are in 8th milestone and in 115 steps, Mohan is in 6th mile stone and 86 steps." However there are a few instances when the teacher compares children and goads them to move on. "If you don't say properly you will be made to sit in this group only, she will go to next group"; "Neenu Sothu Bidthiya, avallu mundhe hoguthale, (you will lose, she will go ahead)"

Excerpts of classrooms with Low opportunities of Self-paced Learning

All the children worked at the same pace, with the teacher. As the teacher moved forward, the children did too. The teacher also reported that they had finished up to 49th milestone - said as a collective indicating same paced learning.

INCLUSIVE ENVIRONMENT

We considered the effort that is made to integrate all students of a class and if there are any discriminatory practices on the basis of caste, community, gender, learning ability, class etc. We took a note of practices where clear discriminatory seen or deprecating comments were made on the students.

We understand that subtle exclusive practices may not be very evident in a span of 3 days and realize that identifying inclusion/ exclusion practices could be a study in itself. For this study, we limited our understanding of Inclusive environment to the classroom observations. We also considered the absence of any exclusive/ discriminatory practices in the 3 days as a positive sign.

Excerpts from a classroom with High Inclusion

There was no instance of any discrimination seen in the class. One student had hurt his leg and wasn't able to participate. The teacher asks another student to include him and help him in the task. In one group discussion students were not letting one girl to speak, the teacher insisted "we will allow her to speak" and then the girl spoke. The child with special needs (CWSN) was treated on par with others in

the class. He urinates regularly in the class but was treated normally by the teacher and his peers. In fact, teacher tried to involve him in learning and gave more attention to him during circle time and other activity time. She sat with him holding his hand and made him write, and him to sit next to her at some points.

Excerpts from a classroom with Medium Inclusion

Subtle discrimination on gender observed in the classroom, especially in terms of assigning tasks. Sweeping and mopping is always done by girls. Two children with special needs (CWSN) are not given any attention in the class. They just sit and do anything they like. They are seen chewing, tearing papers. Teacher does not interact with them at all.

Excerpts from a classroom with Low Inclusion

Teacher is ignoring a group of girls who he complains keep talking. Even within boys, he is paying attention to only fast learners. Teacher passes class/ caste based remarks in the classroom like "aye pandit, jada hooshiyaar mat ban, pata hai tu Beraagad se aata hai" (An upper caste boy is told not to act smart, since he comes from a posh neighborhood). Boys and girls sit separately in the class and do not mix even while doing group work.

5.3. CLASSROOM TYPES DESCRIPTION

TYPE 1 CLASSROOMS

Students engaged and fear free; high to medium opportunities for self-paced and peer learning; and low exclusion observed (n = 14/110)

These classrooms display high levels of student engagement and fear free environment. Students seem to have a sense of independence in terms of their own participation and learning. Students are seen asking questions, taking initiatives to use the material, placing grouping charts before the teacher starts teaching, marking weather chart for the day, involving and helping other students through the class. In classes where grouping with card-ladder is practiced, students are aware of the entire process, of picking up the cards, sitting in the right group, keeping the card back, marking the progress chart and taking the next card as per the learning ladder. Students are keen to get their work checked by the teacher and continue working even if the teacher steps out of the class for some time. Students are seen approaching the teacher fearlessly for doubts or other concerns. In a few classrooms students are also seen walking out of the classroom for taking a (water/ toilet) break without the permission of the teacher and come back to their activities on their own.

There are a lot of interactions related to learning among the students. These include explaining concepts or card contents, helping with craft work or reading correctly, correcting answers, helping find the next card or sit in the correct group. In terms of self-paced learning, students were seen to be working on different activities. Their ladder positions were different and extreme cases of ladder positions (especially where students were far behind others) were also observed indicating opportunities for self-paced learning in the class.

Interestingly, **10 out of 14 Type 1 classrooms are practicing Grouping with Card ladder.** 3 classrooms have other ways of grouping students (ability or teacher defined) and one class is practicing whole class teaching. However, even with other grouping methods or whole class teaching, students in these classrooms were highly engaged and had opportunities for self-paced learning as observed though opportunities for faster learners to work on additional/ advanced material and for slower learners to repeat tasks or get extra teacher support. This was also observed through differentiated instruction by the teacher (like teaching the same concept in different ways) and different homework assigned to different students in some cases.

Excerpts from a Type 1 Classroom

Students seem absolutely fear free and relaxed, as visible through their movement and body language (some students would lie down after an activity and get up again). A lot of participation was observed during activities as students would freely ask doubts from the teacher or each other. Students independently moved groups, asked several questions, and volunteered to help their peers. Some of them kept working on their own and approached teacher when they had doubts. Most students were enjoying themselves throughout. There were instances of students playing in between, looking out of

the window etc. but they would come back to their work. A CWSN student was particularly active and articulate, with the teacher giving him a lot of freedom to work at his own pace and desire.

Several instances of student volunteered peer learning were observed. These were during reading vachakas (readers), sentence formation, craft work, writing words etc. Students were helping correct mistakes and asking questions to each other. In one instance 2 students reached out to another girl in a different group who had done the card to ask something. Students were at different positions on the ladder and were seen doing different things. RA also checked several workbooks and all the previous pages were complete and checked by the teacher.

TYPE 2 CLASSROOMS

Students engaged and largely fear free; medium to low opportunities for self-paced and peer learning; and low exclusion observed (n = 16/110)

Like Type 1 classrooms, type 2 classrooms also have high levels of student engagement. Most students in the class are involved in learning activities and enthusiastically participate in the classroom processes. Students raise their hands, ask questions and are seen to be focused on what is being taught or assigned to them. In most of these classrooms (12/16) the environment is quite friendly and fear free. In the remaining few classes some sort of stricter teacher control was apparent. This was noticed through teacher shouting or admonishing some students or an occasional pulling of ears when students make noise etc.

Type 2 classrooms do not seem have to high opportunities for students in terms of either peer learning and/ or self-paced learning. Student interaction regarding learning activities is observed. But this is mainly in the form of students seen helping each other read or copying the correct answers/ previous exercises. Very few instances of students engaging in a discussion or explaining things to each other is observed in a classroom. Provision for self-paced learning also seems limited as observed through ladder positions of students cluttered around either the same card or milestone. Classes where whole class teaching is observed, these opportunities are limited to the extent of teacher repeating a concept for a few students, the entire class waiting for some students to finish or a couple of students asked to rework if they finish earlier. In a couple of classrooms teachers spend time with slow learners outside the classroom hours to bring them up to speed with the rest of the class.

10 out of 16 classrooms in Type 2 are practicing whole-class teaching. The remaining 6 are practicing grouping with either card-ladder or based on some criteria like student grades. These 6 classrooms in Type 2 where some form of grouping is observed also have relatively lower opportunities for self-paced and peer learning as compared to Type 1 classrooms with grouping.

Excerpts from a Type 2 Classroom

The children can speak or ask a question to the teacher whenever they want and the teacher is explaining things to them. She did not punish any child during these 3 days of observation and she did not lose her temper on these days. And she gives equal attention to all the children, even if they are

children who are lagging behind. The children said "if they speak some bad words in the classroom, if we hurt someone, if we steal the money, if we play inside the classroom, if we do these things our teacher will beat us. But it won't be paining. She will scold a lot rather than punishing. Despite this, we love our teacher very much." Parents said "Children want to go to school every day, even on Saturday". Children are very keen to read in front of the teacher and they memorized a lot of couplets and poems and told them to the teacher. Many children are doing their work even if the teacher is attending to other students.

Students were not picking up cards on their own- teacher was deciding what students of one class should do. She felt that they are at the same level. Though she seems to be taking some effort to teach all children, this doesn't seem to amount to 'self-paced' learning. There were instances of children learning from each other. Children were explaining things to other kids and once they have memorized the poem and the children were reciting to each other etc. But classroom was divided mainly into 2 groups based on class level.

TYPE 3 CLASSROOMS

Students somewhat engaged and fear free; medium to low opportunities for self-paced and peer learning; and instances of exclusion observed (n = 25/110)

In these classrooms students were not always engaged in learning activities. Different shades of student engagement were observed which varied from student engagement going down after the initial 10-15 minutes, to few students engaged throughout the observation period while others distracted or simply copying in their notebooks. A section of students, typically sitting at the back does not seem to be fully in the class. In terms of classroom environment, students in these classrooms are fear-free for more than half classes (14/25). Instances of stricter environment (11/25) are also observed where occasional physical punishment and /or shouting by the teacher are observed.

A mix of whole-class teaching (10/25), grouping *not* based on card and ladder (13/25) is observed in these classrooms. The basis of grouping in these classrooms is not consistent and varied from students' ability, students in the same grade, to group of friends sitting together. A couple of classes practicing grouping with card ladder (2/25) are also observed.

However, for all these classes there are fewer opportunities for self-paced and peer learning. In some classes despite sitting in groups all the students are seen working on the same task or at best one group is working on an activity which is different from the other group. Instances of students copying from each other with little discussion are observed. Mostly the conversation is between the student and the teacher. Some students in the class were not interacting at all.

Excerpts from a Type 3 Classroom

Most students seem engaged only when the teacher sat with them or asked them something. However on several instances, she just lets them be, and they do other things like EVS in the language period.

When teacher asked students, only half the students were responding and only 1 or 2 were seen asking questions. Students walk about freely in the classroom. Teacher points out a couple of students and keeps telling them that they don't know anything or they don't even know a word. Teacher discouraged students who were left behind. She also announces that everyone has to complete the workbook by so and so date. Many instances of students copying from each other observed. One instance of students seen taking help of each other in the group exercise to understand what is to be done in the group activity.

TYPE 4 CLASSROOMS

Medium to low student engagement and fear free environment; low opportunities for self-paced and peer learning; and instances of exclusion observed (n = 37/110)

Type 4 classes are seen to display lower degrees of student engagement. Students are seen working on the assigned tasks but get distracted easily. The classrooms seem to lack energy or enthusiasm of the students. A few students might be engaged in every class but most others are seen either copying from the blackboard/ other students' notebooks or working on some mechanical tasks like repeating sentences, writing tables. Groups of students are completely ignored and they are either waiting for teacher attention or playing among themselves. Students sitting in the front are given more attention than others and several classrooms had gender based grouping. Instances of physical punishment and teacher warnings are observed.

A mix of whole-class teaching (18/37) and grouping not based on card-ladder (17/37) is observed in these classrooms. The basis of grouping is inconsistent or not apparent sometimes. Instances of gender based, grade based and ability based grouping are also observed. There are a couple of classrooms practicing grouping with card and ladder (2/37) too. However, in this case the teacher is seen distributing cards to the students.

Opportunities of self-paced and peer learning remain medium to low in type 4 classes irrespective of the fact that students sit in groups of together. Few students who are seen asking doubts prefer asking teachers as compared to their peers. Very few students are seen talking or discussing about any learning activity.

Excerpts from a Type 4 Classroom

The group that the teacher works with seems engaged. Teacher sits with one group at a time and works, so the other two groups are quite lost during that time. Students are seen talking to each other, getting bored, sitting idle, fighting with each other etc. Some of them work too. Subtle discrimination on gender observed in terms of assigning tasks - sweeping and mopping done by girls only. Two students with special needs are not given any attention in the class. They just sit and do anything they like (chewing tearing papers etc.). Students, if not with teacher are seen loitering and fighting. There are some instances of teacher hitting the students. Teacher also warns students with "if you do not complete this task before lunch I will not send you for lunch".

Students work on what teacher tells them to do. In each group the teacher was deciding what is to be done. However a couple of class 3 students sat in class 1, 2, group as the teacher felt they were slow. Progress chart has not been maintained for months. Students do talk to each other but it's mostly a chit-chat or a fight. Some instances of copying from each-others' notebooks are observed.

TYPE 5 CLASSROOMS

Low students engagement and fearful classroom environment; low opportunities for self-paced and peer learning; and several instances of exclusion observed (n = 18/110)

Students in these classrooms were rarely seen engaged in learning activities. In many instances large part of the class sat idle or was given copying tasks. Students did not work at all if the teacher left the classroom for some reason. Instances of students sleeping, crying and not talking at all are also observed. These classes are very strictly controlled by the teachers. Students seem fearful and are not allowed to move about freely. Shouting by teachers and/ or physical punishment is seen in all these classrooms. For several classes students confirm getting punished physically and expressed a sense of fear. Instances of various exclusion practices were also particularly notable in these classrooms. Discouraging remarks on students based on caste, religion or gender.

These classrooms also have low opportunities for self-paced and peer learning for students. **Most classes (11/18) practice whole class teaching**. However instances of grouping (not based on card-ladder) are also observed (7/18) in these classes. Basis of grouping is not apparent. Sometimes students are seen sitting with their friends. A couple of classrooms in Type 5 are also grade or ability based. Despite groupings, the students are not seen discussing or talking to each other.

Excerpts from a Type 5 Classroom

The students were sitting in rows and the teacher was standing throughout the classroom. The teacher spoke for the majority of the class, and explained the topic on the blackboard. Students did not ask any questions. Only 2-3 students were responding to teacher questions, and others were mostly silent in the classroom. It was evident that they were not able to understand, but did not ask doubts or questions. The teacher asked questions and when unanswered, moved on. The children seemed to be scared of the teacher; the teacher also used a hard loud voice from time to time in the classroom. Most children were not responding even when asked, had their heads down in the class. The students also reported that they are scared of this teacher as he scolds and beats them.

Students were not seen speaking to each other or helping each other learn in the class. All children were doing the same topic, in unison with the rest of the class. When student notebooks were observed several gaps in the previous work were observed.

5.4. TEACHER AND TEACHING PARAMETER DEFINITIONS

THE EFFORT TAKEN BY THE TEACHER

From the classroom observations, this was rated as high, low and medium considering signs such as:

- Whether the teacher is actually teaching the class or engaged in some other task – may be administrative
- Whether the teacher is seen teaching to at least some groups or if she is just clearing the doubts of those who approach her
- Whether the teacher ensures that the students complete the assigned task before moving on to another
- Whether the teacher moves around the class, attends to children when they need assistance.
- Whether the teacher makes resources on her own
- Whether the teacher uses multiple strategies to teach a concept and ensures that students understand
- Whether the teacher notices the errors that students make in their written work, marks it and gives appropriate feedback

When a teacher is found to be doing many of these things we assign a high on the effort that she takes in the class. For example: The extracts from the classrooms of teachers who have been rated high on effort will have things like:

Excerpts from a classroom where Effort taken by teacher is high

She appears to look around the classroom and ensure that no one is idle, and that specific student issues are looked into. She talks to individual students, often encouraging them to ask questions or asking if they are working. The teacher seems to be proactive. She has documentation of efforts put into the classroom. She has also made photocopies of particular cards, ones which the students take time to solve, so that multiple students can work on the same exercises simultaneously. Number of instances are noted where teacher helps students in need, often sensing on her own - "She calls a boy to her place, who is scratching his head staring at his notebook, and explains to him what is to be done in the exercise." She seems to ensure task completion and correction of work done happens. Select notebooks checked did not have any partially / completely unchecked exercises. The teacher has also made her own TLM.

The teacher makes material of her own and uses local material. One can find teacher's engagement with children fully. She gives time to group 1-3, spends 5-10 minutes to each group, she sits with G-1 to teach a poem. While sitting in group 1 she observed other children doing their work. When anyone approaches her she would teach them. She gives time to them when students want to say orally what they have written, or assess their work. She does not make them wait, but immediately attends to them, tells them what card to take if they are confused. She sits with student like Raghu and Suchithra make them write and pronounce several times. When Raghu could not pronounce syllables in the Khagunitha

(syllable matrix) properly even after number of times, she invited his brother to the class and told him to inform his uncle to help him at home also.

A teacher who is paying reasonable attention to the class and teaching the class/some groups as against doing other administrative work, or letting the students learn by themselves and restrict her role to just clearing doubts, we have considered as taking medium effort in the class. The following are examples of teachers who have been considered as taking medium effort.

Excerpts from a classroom where Effort taken by teacher is Medium

The teacher did not move from her place throughout the period of observation - nor did she was seen calling out to kids who were distracted. Work assigned for the Maths class was completed in 15 minutes by students and she did not give any further tasks. Most of the students were occupied with idle chatter for almost half an hour after that. The projects which involved thermocol models did involve a lot of teacher support - she had divided the students in groups and ensured that they do these projects. All records were maintained. The teacher also had initiated a system where she gives stars for 100% attendance and cleanliness.

Teacher was attempting to attend to all - group by group and goes around the class frequently. Every 10 minutes she takes a round. She stood throughout the period, explaining, correcting and discussing. But unable to ensure that the entire class is engaged - students wait for a long time to talk to her. No teacher made material seen in class; she has taken frequent tests, takes notebook for correction etc. but does not insist that everyone gives it for correction. She was not seen doing any follow up with students after explaining something.

The teachers who engage in other activities in the class, or not teach at all have been considered as taking low efforts in the class.

Excerpts from a classroom where Effort taken by teacher is Low

The students' records to be maintained by the teacher were incomplete and she did not ensure that children are doing their work. She would keep commenting on students like "these children don't listen; I keep on telling them and they don't do; every day I am reminding them and they don't bring assignments; after a gap of 10 days (Diwali holidays) I have to start all over again!" The teacher continuously kept making remarks like "How many times have I told you and you don't listen". She seemed to be shifting the blame on to the students for whatever was failing in the class. There was no clear task allocation or follow-up to completion seen. She did spend some time with a CWSN. When students were working with the cards, she was teaching only the groups/ students which came to her. During this time she was not able to keep an eye on the rest of the class.

On all three days of observation she left the classroom for a long duration 2-3 times to attend to phone calls. On day 3 she spent most of the class period time talking to the cleaning person of the school while the children were reading out a chapter. She checked work of students, but during the class she was distracted, not paying attention to what the children were doing. At times she corrected what the

children had written, other times she ignored the errors the children made on the blackboard. The worksheets were seen in the class but children did not know what to do with them. She seemed distracted, and paid attention to the children only occasionally, while at other times the children were chatting. Most children were facing difficulties in their work and were seen writing incorrect sentences. There was no attempt to explain the errors made by the students; instead the teacher just shouted corrected the error herself.

TEACHER'S ABILITY TO KEEP ALL STUDENTS ENGAGED

In ABL method, a class is divided into groups according to the extent of support needed for the activity that a student is doing. Also, each student is expected to be proceeding at her own pace. In a real classroom situation, different students would be at different activities or cards and hence it is likely that different students require different levels of attention from the teacher at different times. This needs an immense skill on the teacher's part to be able to manage the multiple demands on her time and keep the whole class engaged. When this is missing, we often find that only the group engaging with the learning activity is the one in which the teacher is present and other groups either sit idle, waiting for teachers' attention or not engaged in any constructive activity.

It seems this ability of the teacher to be able to keep the whole class engaged when she is engaging with one group of children is crucial for ABL model to result in an engaged class where learning happens. This particular ability of the teacher is understood from the classroom transactions and an attempt has been made to differentiate the teachers who are successfully doing this from those who are not able to. A few teachers also fall into the category of those who were doing this partially.

A teacher who is able to keep the whole class engaged for most of the time is assigned a 'high' on this. The teachers usually achieve this by some defined processes / strategies which are being followed in the class such as, by taking frequent rounds in the class, or by keeping a watchful eye on students and ensuring that they are engaged. Those who are not able to see beyond the group/student that they are addressing have been rated low on this. Teachers who attempt to do this and succeed to a reasonable extent have been rated medium. This teacher may be able to keep the majority of the class engaged, but there would be sections/groups in the class which are not.

Excerpts from a classroom where Teacher's ability to keep all the students engaged is High

Teacher tries to include everyone in the learning activities. While sitting in a group she keeps an eye on other students, asks students to help each other. On Day 2 and 3 Teacher practically remembered every student's position on the Pragati nota (progress chart).

Teacher spent a lot of time trying to include everyone and giving activities to students. She gave individual attention also where needed. Her commitment is also apparent in the fact that the class seems student-led, in the sense that if the teacher is not available for some time to a particular group the students go ahead and start using some material for the time being. For instance, class 3 students started using charts on their own. From this it appears that the teacher has spent a lot of time initially to help students work on their own and take interest in studying.

Excerpts from a classroom where Teacher's ability to keep all the students engaged is Medium

Students are sitting in groups; they have benches to sit in the class. The teacher calls each group one by one to the blackboard and explains to them. Each group has the same card, each student has a photocopy. After explaining they go back to do the reading/ writing. The students in other groups have to wait for the teacher to come to start their work.

There was grouping seen the class, often not differentiated enough. The teacher was addressing the group that was with her, primarily in lecture mode. This was half of the class or more at many times. She also tries to involve them by asking questions and trying to draw out the answers from them. She did not move from her place even once. The rest of the students were involved in some textbook work; she occasionally called out to them.

Excerpts from a classroom where Teacher's ability to keep all the students engaged is Low

While the teacher taught through the period there was no effort to include everyone, especially the students who were not answering.

While the teacher spent the whole time teaching the class, she was not going out of her way to either explain things or make sure that everyone is following her.

TEACHER BUY-IN OF THE ABL METHOD

It seems highly unlikely that a teacher would follow a method effectively, unless she buys into it. Any forced adherence is likely to wear off over a period of time, evolve into a different method, or be devoid of the spirit of the method. Therefore what teachers think about the method mandated by the state and if they buy in to it was investigated in the study.

This parameter was understood based on the views expressed by the teacher on the desirability of ABL, the kind of benefits and challenges that she sees in implementing it and to some extent on her beliefs in principles of child friendly learning centred education. This was also matched against the teacher's classroom practices. It is obvious that high student strength in classrooms is a genuine challenge for teachers, especially when it comes to paying attention to all students. At the same time, it is difficult to comment to a teachers' ability to pay attention when PTR is too low (below 10). Hence these extreme cases of very high or low PTR have been excluded while analyzing this parameter.

For a teacher who explicitly said that she prefers the traditional method to ABL, we took the buy in to be low. Following are examples of responses which we classified as low buy in.

Excerpts from a classroom where Teacher Buy-In is Low

The teacher feels teachers in general have lost respect in ABL method of teaching and that learning is not happening as it should. "In traditional method, when we learn we will memorize lots of words in the first standard itself, now after this ABL, the children are even finding difficulty in learning letters." Teacher also expressed that the records are too many and that the method is imposed on them and

said that she is trying to move to higher class teaching because of ABL. "They want us to follow irrespective of our difference of opinion."
"Such methods might work at the city level, but in the regions where our school is most students are tribals who do not get revision in the evening at their homes. In such cases, this method doesn't work effectively."

Responses like the following where the teacher does see some benefits, but sees a lot of challenges too and does not have a strong preference for traditional method has been classified as medium buy-in. This was also matched against teacher classroom practice.

Excerpts from a classroom where Teacher Buy-In is Medium
He preferred Pragnya to the old methodology, although he said (with a smile) that perhaps Pragnya should be allocated to younger more active teachers. The constant getting up, sitting down, floor sitting and the need for mobility was not meant for old teachers like himself.

She said that ABL is good, but there are problems in implementation. Provided the class strength is low, sufficient number of cards is there, fewer records need to be maintained and multigrade grouping is not there, they would go with ABL. In the classroom, students are seen copying from textbooks and most of them are doing the same thing, despite sitting in different groups.

Responses where the teacher sees very few challenges in implementing ABL and believes that it is the best method to go ahead with have been rated high on buy-in.

Excerpts from a classroom where Teacher Buy-In is high
Teacher while explaining ABL mentions "even if students remain absent for some time, they can pick up from where they left on returning. Earlier, the slow learners were the sufferers. Only through Pragna students learn from the foundation, the child learns out of interest. At his/her own pace. There is no sense of competition"

Teacher mentioned that she will obviously choose Nali Kali as she can give individual attention and there is no competition for students in this method. However, she would prefer mono-grade classes. Teacher also believed that since method is fun for children, "they have become more independent, have developed social skills and come to the school. Children are able to connect their learning experiences to their daily life - that's what learning is supposed to be."

LEARNING MATERIALS – AVAILABILITY AND USAGE:

Usage of a variety of resources is an integral part of child friendly pedagogy. This is more so in the case of primary classes. Variety of materials, especially the ones which students can handle by themselves, goes a long way in aiding understanding of concepts. States like Tamil Nadu and MP provide schools with such resources, and others like Gujarat give a grant to purchase these as needed. Many states also encourage teachers to use locally available material and make resources.

Availability and usage of resources in the classrooms was observed. On availability, a classroom that has a variety of resources in the form of abacus, beads, ice-cream sticks etc. in addition to charts and wall paintings was rated as having high resources.

Excerpts from Classroom with High Resource availability

The classroom has charts on the wall, some of which are bought pre-prepared from the market, and some others have been made by the teachers. The activity materials include card games, puzzles, flash cards and board games. There is some material that the teacher has made/collected himself. This includes marbles, abacus made from plywood and metal wire and numbering cards to arrange in ascending/descending order. There is also a wooden pinball like implement for an activity to find out place values. There are also some story books and picture books that seem to be there in the class (Panchatantra, Amar chitra Katha).

Classrooms which have only charts, maps and pictures and other such resources have been classified as medium availability on Resources.

Excerpts from Classroom with Medium Resource availability

Cards in trays, low level blackboard, a student library in the class, ladder hung, and teacher used some cards, children had textbooks and notebooks, no other TLMs reported in the class. Teacher says she uses different objects from daily life and has made some material, but these were not seen during the 3 day observations.

Classrooms which do not have any other resources other than textbook, notebooks and blackboard have been rated low on this. Classrooms where many children are using the TLM frequently have been rated high. If students use TLM sparingly, or if it is used by teacher for demonstration purposes alone, such classrooms have been rated medium. Classrooms where resource usage is not seen during the days of observation have been rated low.

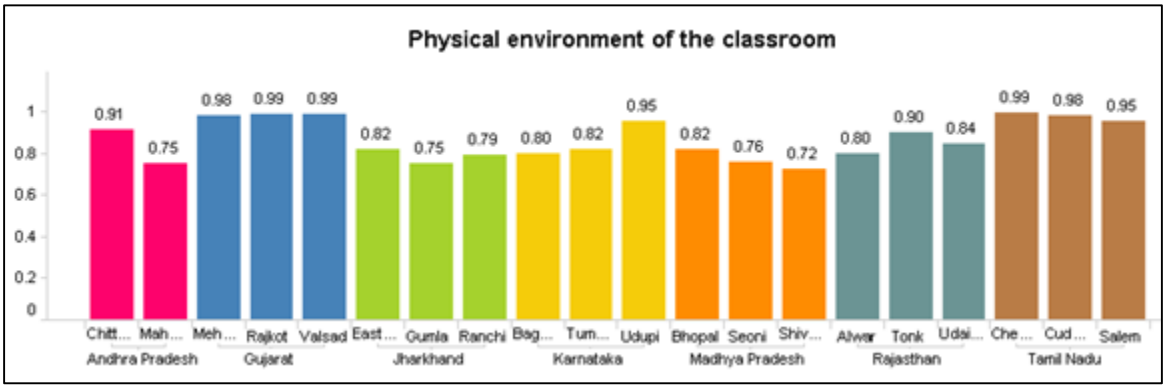
5.5. SCHOOL PHYSICAL ENVIRONMENT

In order to understand the availability of basic infrastructural facilities in all schools tested across states, information on school and classroom infrastructural facilities was collected through the School Proforma and the Classroom Observation tools.

The school proforma tool collected information about whether: there is drinking water available in the school, the drinking water is clean, there is a toilet in the school, the toilet is clean, whether there is a separate toilet for girls, there is a playground in the school, and there is a library in the school. Analyzing the availability of these resources across states, it is revealed that:

- Most states have these indicators of ***school physical environment*** in place
- Playground facility was observed to be lower in Andhra Pradesh, Jharkhand and Rajasthan.
- In Andhra Pradesh, Mahabubnagar fewer schools had access to clean drinking water and separate toilets for girls.

The classroom observation collected information on whether there are fans, lights in the class, whether there is enough space and ventilation in the class. These indicators of ***classroom physical environment*** were analysed across states and this is summarized below.



- Karnataka, Gujarat and Tamil Nadu saw high physical environment scores across districts.
- It is interesting to note that the district with the most comfortable physical environment in each state is also the best performing district in learning achievement.

5.6 ANALYSIS OF PERFORMANCE BY GENDER AND SOCIAL GROUPS

PERFORMANCE BY GENDER

Scores by Gender– ABL Schools

	Boys			Girls						
State/ Class Subject	N	Avg	SD	N	Avg	SD	t-critic	sig at 99%	Cohen's D	effect
Andhra Pradesh	4116	517.4	84.6	4671	524.3	85.7	3.7	YES Sig	-0.1	notsig
2L	945	512.5	83.0	1094	522.0	83.7	2.6	NO Sig	-0.1	notsig
2M	952	519.2	82.2	1095	528.7	76.4	2.7	YES Sig	-0.1	notsig
3L	1110	518.8	85.1	1241	526.7	89.0	2.2	NO Sig	-0.1	notsig
3M	1109	518.8	87.4	1241	519.8	91.3	0.3	NO Sig	0.0	notsig
Gujarat	4967	557.2	71.7	4700	561.6	67.8	3.1	YES Sig	-0.1	notsig
2L	1183	555.2	71.4	1214	564.3	65.4	3.3	YES Sig	-0.1	notsig
2M	1173	547.9	67.2	1213	551.2	64.3	1.2	NO Sig	-0.1	notsig
3L	1306	559.9	73.3	1137	565.1	71.1	1.8	NO Sig	-0.1	notsig
3M	1305	564.6	73.5	1136	566.5	69.5	0.6	NO Sig	0.0	notsig
Jharkhand	3104	475.1	92.0	3757	478.1	91.7	1.3	NO Sig	0.0	notsig
2L	697	479.2	97.4	908	486.9	92.0	1.6	NO Sig	-0.1	notsig
2M	696	495.7	94.7	908	491.2	93.4	1.0	NO Sig	0.0	notsig
3L	856	459.4	86.8	971	465.7	89.1	1.5	NO Sig	-0.1	notsig
3M	855	470.8	86.9	970	469.9	89.9	0.2	NO Sig	0.0	notsig
Karnataka	4808	551.7	76.0	5055	558.4	73.0	4.4	YES Sig	-0.1	notsig
2L	1136	553.3	68.5	1322	557.6	64.9	1.6	NO Sig	-0.1	notsig
2M	1136	550.4	68.6	1322	554.6	66.7	1.5	NO Sig	-0.1	notsig
3L	1267	557.5	81.8	1205	570.6	77.5	4.1	YES Sig	-0.2	notsig
3M	1269	545.7	82.2	1206	551.1	81.3	1.6	NO Sig	-0.1	notsig
Madhya Pradesh	3301	424.0	97.4	3453	416.7	98.4	3.1	YES Sig	0.1	notsig
2L	812	411.1	98.6	885	410.9	95.2	0.0	NO Sig	0.0	notsig
2M	811	425.4	106.7	884	414.6	109.6	2.1	NO Sig	0.1	notsig
3L	836	426.1	88.7	840	420.9	92.1	1.2	NO Sig	0.1	notsig
3M	842	433.0	93.8	844	420.7	95.1	2.7	YES Sig	0.1	notsig
Rajasthan	2672	456.4	100.5	2825	457.5	102.6	0.4	NO Sig	0.0	notsig
2L	629	449.0	102.8	644	447.1	105.1	0.3	NO Sig	0.0	notsig
2M	623	467.9	103.5	638	457.5	111.6	1.7	NO Sig	0.1	notsig
3L	714	449.1	93.1	777	461.7	93.0	2.6	YES Sig	-0.1	notsig

Scores by Gender– ABL Schools

	Boys			Girls						
State/ Class Subject	N	Avg	SD	N	Avg	SD	t-critic	sig at 99%	Cohen's D	effect
3M	706	460.2	101.9	766	462.0	101.5	0.3	NO Sig	0.0	notsig
Tamil Nadu	3659	503.3	86.0	3768	505.8	83.0	1.3	NO Sig	0.0	notsig
2L	850	511.9	79.3	961	521.0	73.9	2.5	NO Sig	-0.1	notsig
2M	851	509.9	83.9	943	503.4	81.4	1.7	NO Sig	0.1	notsig
3L	979	493.1	91.3	932	501.8	88.3	2.1	NO Sig	-0.1	notsig
3M	979	500.1	86.7	932	496.8	86.2	0.8	NO Sig	0.0	notsig

Scores by Gender – non-ABL Schools

	Boys			Girls						
State/ Class Subject	N	Avg	SD	N	Avg	SD	t-critic	sig at 99%	Cohen's D	effect
Gujarat	2525	483.3	103.1	2382	494.2	102.4	3.7	YES Sig	-0.1	notsig
2L	599	463.8	106.9	602	483.0	102.5	3.2	YES Sig	-0.2	notsig
2M	599	463.2	110.3	602	470.4	109.9	1.1	NO Sig	-0.1	notsig
3L	664	497.4	92.9	589	513.5	92.0	3.1	YES Sig	-0.2	notsig
3M	663	504.8	95.7	589	510.5	97.9	1.0	NO Sig	-0.1	notsig
Jharkhand	1159	466.0	96.1	1257	464.7	102.7	0.3	NO Sig	0.0	notsig
2L	285	462.9	93.1	293	457.4	104.3	0.7	NO Sig	0.1	notsig
2M	284	467.8	101.9	292	463.8	100.1	0.5	NO Sig	0.0	notsig
3L	296	460.2	95.5	336	464.0	100.8	0.5	NO Sig	0.0	notsig
3M	294	473.0	93.9	336	472.5	105.3	0.1	NO Sig	0.0	notsig
Madhya Pradesh	1528	427.8	95.3	1405	411.8	94.5	4.6	YES Sig	0.2	notsig
2L	386	433.0	90.2	356	407.0	94.3	3.8	YES Sig	0.3	small
2M	387	440.8	103.6	357	412.4	107.0	3.7	YES Sig	0.3	small
3L	382	417.6	92.3	342	419.7	86.7	0.3	NO Sig	0.0	notsig
3M	373	419.5	92.9	350	408.5	88.0	1.6	NO Sig	0.1	notsig
Rajasthan	1233	422.5	109.7	1239	429.5	104.8	1.6	NO Sig	-0.1	notsig
2L	276	415.1	108.4	285	427.1	104.1	1.3	NO Sig	-0.1	notsig
2M	266	419.4	128.6	275	435.0	113.0	1.5	NO Sig	-0.1	notsig
3L	344	425.6	93.9	339	425.3	91.1	0.0	NO Sig	0.0	notsig
3M	347	427.7	109.6	340	431.1	111.5	0.4	NO Sig	0.0	notsig

PERFORMANCE BY SOCIAL GROUPS - INTERVENTION AND CONTROL

Scores by Social Groups– ABL - Schools *Rows with N<50 ignored for Intervention									Scores by Social Groups– non-ABL schools						
State/ Cat*	N	Avg	SD	t-statistic	Sig @ 99%	Cohen's D	effect		N	Avg	SD	t-statistic	Sig @ 99%	Cohen's D	effect
Andhra Pradesh	8787	521.1	85.2												
BC	110	513.8	94.7	0.9	NO Sig	0.1	notsig								
GEN	846	547.6	73.1	8.7	YES Sig	-0.3	small								
OBC	4869	519.4	83.7	1.1	NO Sig	0.0	notsig								
OTH	354	525.8	85.9	1.0	NO Sig	-0.1	notsig								
SC	1916	514.5	90.4	3.0	YES Sig	0.1	notsig								
ST	666	517.5	87.3	1.0	NO Sig	0.0	notsig								
Gujarat	9667	559.3	69.9						4907	488.5	102.9				
GEN	266	565.7	63.7	1.5	NO Sig	-0.1	notsig		32	551.2	71.7	3.4	YES Sig	-0.6	medium
OBC	4638	565.6	69.2	5.0	YES Sig	-0.1	notsig		2873	492.0	106.8	1.4	NO Sig	0.0	notsig
OTH	806	587.3	54.4	11.1	YES Sig	-0.4	small		510	521.2	89.8	6.9	YES Sig	-0.3	small
SC	960	571.9	65.7	5.3	YES Sig	-0.2	notsig		455	494.6	94.3	1.2	NO Sig	-0.1	notsig
ST	2997	537.5	70.9	14.9	YES Sig	0.3	small		1037	458.4	94.2	8.7	YES Sig	0.3	small
Jharkhand	6861	476.7	91.8						2416	465.3	99.6				
GEN	68	504.4	80.0	2.5	NO Sig	-0.3	small		78	469.2	97.8	0.3	NO Sig	0.0	notsig
OBC	2774	480.7	91.9	1.9	NO Sig	0.0	notsig		712	472.1	99.5	1.6	NO Sig	-0.1	notsig
OTH	246	495.7	84.0	3.2	YES Sig	-0.2	small		88	436.8	93.5	2.6	YES Sig	0.3	small

Scores by Social Groups– ABL - Schools *Rows with N<50 ignored for Intervention									Scores by Social Groups– non-ABL schools						
State/ Cat*	N	Avg	SD	t-statistic	Sig @ 99%	Cohen's D	effect		N	Avg	SD	t-statistic	Sig @ 99%	Cohen's D	effect
SC	589	466.0	92.8	2.7	YES Sig	0.1	notsig		302	449.3	106.5	2.6	YES Sig	0.2	notsig
ST	3176	473.1	92.0	1.8	NO Sig	0.0	notsig		1236	467.1	97.8	0.5	NO Sig	0.0	notsig
Karnataka	9863	555.1	74.5												
OBC	6489	562.0	69.5	5.9	YES Sig	-0.1	notsig								
OTH	304	561.1	67.2	1.4	NO Sig	-0.1	notsig								
SC	2273	542.4	81.4	7.2	YES Sig	0.2	notsig								
ST	791	532.9	86.4	8.0	YES Sig	0.3	small								
Madhya Pradesh	6754	420.3	98.0						2933	420.2	95.2				
GEN	216	409.9	88.0	1.5	NO Sig	0.1	notsig		116	427.1	97.1	0.8	NO Sig	-0.1	notsig
OBC	3620	419.9	99.1	0.2	NO Sig	0.0	notsig		1506	427.6	93.8	2.5	NO Sig	-0.1	notsig
OTH	84	436.2	111.2	1.5	NO Sig	-0.2	notsig		22	439.1	80.4	0.9	NO Sig	-0.2	notsig
SC	1537	425.1	100.3	1.7	NO Sig	0.0	notsig		702	408.6	96.5	2.9	YES Sig	0.1	notsig
ST	1261	417.6	92.3	0.9	NO Sig	0.0	notsig		579	412.0	96.0	1.9	NO Sig	0.1	notsig
Rajasthan	5497	457.0	101.6						2472	426.0	107.3				
GEN	162	491.3	87.2	4.3	YES Sig	-0.3	small		52	438.9	86.1	0.9	NO Sig	-0.1	notsig
OBC	2399	463.8	102.3	2.7	YES Sig	-0.1	notsig		1263	425.7	106.2	0.1	NO Sig	0.0	notsig
OTH	123	501.6	91.5	4.8	YES Sig	-0.4	small		48	513.2	96.6	5.6	YES Sig	-0.8	large
SC	1138	444.8	98.4	3.7	YES Sig	0.1	notsig		386	426.0	112.8	0.0	NO Sig	0.0	notsig
ST	1644	449.5	102.4	2.6	YES Sig	0.1	notsig		710	418.6	105.6	1.6	NO Sig	0.1	notsig

Scores by Social Groups– ABL - Schools *Rows with N<50 ignored for Intervention									Scores by Social Groups– non-ABL schools						
State/ Cat*	N	Avg	SD	t-statistic	Sig @ 99%	Cohen's D	effect		N	Avg	SD	t-statistic	Sig @ 99%	Cohen's D	effect
Tamil Nadu	7427	504.6	84.5												
OBC	4198	508.3	83.9	2.1	NO Sig	0.0	notsig								
SC	3115	499.2	85.0	2.8	YES Sig	0.1	notsig								
ST	82	500.9	89.7	0.4	NO Sig	0.0	notsig								