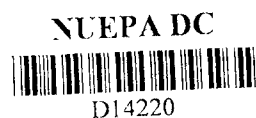


PROGRAMME EVALUATION REPORT

# ACTIVITY BASED LEARNING

# TAMIL NADU

December 2011



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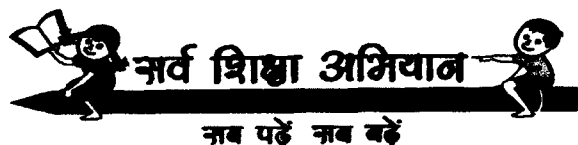


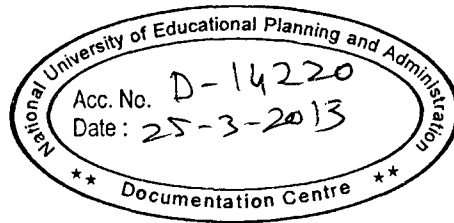
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NCERT

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्  
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

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SSA – Technical Cooperation Fund





December 2011

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The reports of all the four evaluation studies are available on request from the Department of Elementary Education:

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## Foreword

In 2002 the Government of India launched a nation-wide centrally sponsored scheme, Sarva Shiksha Abhiyan (SSA) with the aim to provide all children in the 6-14 years age group with access to a school/EGS centre, bridging gender and social category gaps with universal retention and providing education of satisfactory quality by 2010. In the second phase of support to SSA, the Ministry of Human Resources Department (MHRD) and the Development Partners (DP), Department for International Development (DFID), the World Bank and the European Commission (EU), agreed to finance a Technical Cooperation Fund (TCF) to support and facilitate strengthening of institutional capacities at the National Council for Educational Research and Training (NCERT) and, through it, the states in the specific areas of:

1. National Assessment Surveys and
2. Programme Evaluation of Quality Initiatives

A Technical Services Agency (TSA) was contracted to support NCERT in the process of capacity building to reach international professional standards in developing and carrying out education evaluation and national assessment.

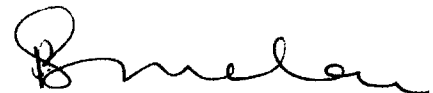
The methodology for capacity building involved continuous technical inputs through courses, workshops, conferences, exposure to best practices and experimental or "hands on" learning by actually conducting the evaluations with support from experts.

In 2009, the MHRD commissioned the Department of Elementary Education (DEE), NCERT to undertake the following evaluation studies of four quality initiatives:

- **Aadhar, Himachal Pradesh** – a state wide initiative to improve basic literacy and numeracy in primary level students.
- **Activity Based Learning, Tamil Nadu** – a project piloting the principle of learning through activities in Classes one to four.
- **Children's Learning Acceleration Programme (CLAPS), Andhra Pradesh** – an initiative that aims to improve learning levels in all areas of the primary school curriculum.
- **Multilingual Education (MLE) Programme, Orissa** – teaching tribal children in their mother tongue with the aim of improving education equity.

These evaluations were conducted during 2009-2011 with technical support and guidance from TSA. The reports of these studies, developed with mentoring support from an Advisory Panel and peer reviewed by eminent international experts in the field of evaluation are now available.

We hope they will be used and discussed extensively. We also hope the results will lead to further in-depth studies.



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# TABLE OF CONTENTS

<b>List of Figures</b>	<b><i>i</i></b>
<b>List of Tables</b>	<b><i>ii</i></b>
<b>List of Analysis Tables</b>	<b><i>iii</i></b>
<b>Acronyms</b>	<b><i>v</i></b>
<b>Acknowledgements</b>	<b><i>vii</i></b>
<b>Executive Summary</b>	<b><i>ix</i></b>
Recommendations	<b><i>xi</i></b>
<b>Section 1 Introduction and Background</b>	<b>1</b>
1.1 Background	1
1.2 Programme Description	2
1.2.1 Rationale for ABL	3
1.2.2 Development of ABL	4
1.2.3 Material Development	4
1.2.4 Phasing of the Initiative	5
1.2.5 Support Systems	5
1.2.6 Assessment	6
1.3 Evaluation Process of ABL	6
1.4 Programme Logic Model	6
1.5 Evaluation Framework	8
1.6 Evaluation Questions	9
<b>Section 2 Methods</b>	<b>11</b>
2.1 Evaluation Design	11
2.2 Sampling Frame	12
2.3 Instrumentation and Procedures	14
2.3.1 Field Staff Recruitment and Training	15
2.3.2 Description of Data Collection Instruments	15
2.4 Data Analysis	19
2.4.1 Quantitative Analysis	19
2.4.2 Qualitative Analysis	20
2.5 Quality of the Data	21
2.6 Limitations of the Study	22
<b>Section 3 Results</b>	<b>23</b>
3.1 Is ABL being implemented as intended? If not, why not?	23
3.1.1 ABL Training	23
3.1.2 Teachers' and BRTEs' Knowledge of ABL	24
3.1.3 Awareness of VEC Members about ABL	24
3.1.4 Self-perceived Competency of Teachers and BRTEs	25
3.1.5 Classroom Structure and Organization	26

3.2	To what extent are ABL support systems (curriculum, teacher training and support by BRTEs) effective in improving classroom practices?	28
3.2.1	Training in ABL	28
3.2.2	Quality of ABL Learning Materials for Students	30
3.2.3	Classroom Processes in ABL	33
3.2.4	ABL Support Systems and Classroom Processes in ABL	38
3.3	Has ABL improved student achievement in different subject areas? If so, to what extent?	39
3.3.1	ABL Achievement Tests	39
3.3.2	Comparison of Achievement Levels in Other Studies	44
3.4	What other outcomes are attributable to ABL?	45
3.4.1	Student Related Outcomes	45
3.4.2	Outcomes Associated with Teachers	48
3.4.3	Negative Outcomes	49
<b>Section 4 Conclusions And Recommendations</b>		<b>53</b>
4.1	Key Findings	53
4.1.1	Is ABL being implemented as intended? If not, why not?	53
4.1.2	To what extent are ABL support systems (curriculum, teacher training and support by BRTEs) effective in improving classroom practices?	54
4.1.3	Has ABL improved learning levels of children in different subject areas? If so, to what extent?	55
4.1.4	What other (non-academic) outcomes are attributable to ABL?	56
4.2	Recommendations	57
<b>References</b>		<b>59</b>
<b>Appendices</b>		<b>61</b>
	Appendix A: Grading of Schools Based on ABL Classroom Processes	61
	Appendix B: Evaluation Framework for Activity Based Learning	62
	Appendix C: Items and Competencies of Achievement Tests	62
	Appendix D: Analysis Tables and Descriptions	63
	Appendix E: Item-Wise Analysis Of Achievement Tests And Questionnaires	89
	Appendix F: List of Schools	109

## LIST OF FIGURES

Figure 1: Diagrammatic View of Sampling Design	14
Figure 2: Percentage of Students who are Positive about ABL Aspects	36
Figure 3: Class III Student Achievement across Phases	39
Figure 4: Class IV Student Achievement across Phases	40
Figure 5: Average Class Marks of Class III Students in Tamil Written, Tamil Oral and English Written	41
Figure 6: Average Class Marks of Class III Students in English Oral, Mathematics and Environmental Studies	41
Figure 7: Average Class Marks of Class IV Students in Tamil Written, Tamil Oral and English Written	42
Figure 8: Average Class Marks of Class IV Students in English Oral, Mathematics and Environmental Studies	42
Figure 9: Class 3 Student Achievement: Rural vs. Urban	43
Figure 10: Class 4 Student Achievement: Rural vs. Urban	44

## LIST OF TABLES

Table 1: Programme Logic Model for Activity Based Learning	7
Table 2: School Groups by Duration of ABL Implementation	11
Table 3: Evaluation Design	12
Table 4: Districts with Low Female Literacy Levels in Tamil Nadu, 2001	13
Table 5: Districts having Relatively Better Female Literacy Levels in Tamil Nadu, 2001	13
Table 6: Interviews	15
Table 7: Questionnaires	17
Table 8: Focus Group Discussions	18
Table 9: Post Test Reliability Analysis (Cronbach Alpha value)	19
Table 10: Composite Scores	20
Table 11: Percentage of Teachers and BRTEs reporting that they received training on various aspects of ABL	23
Table 12: Self Perceived Competency of Teachers and BRTEs across Phases	26
Table 13: F-Values of ABL Self Perceived Competency Scores	26
Table 14: Findings of ABL Classroom Structure and Organization	27
Table 15: Classroom Process Scores	34
Table 16: F-Values of Classroom Process Scores	34
Table 17: Means and SDs of Teachers' and BRTEs' Perception about ABL Methodology	35
Table 18: F-Values of ABL Methodology Scores	35
Table 19: Coefficients of Variables Influencing ABL Classroom Processes	38



## LIST OF ANALYSIS TABLES

Table 1	(A): Description of Variables	64
Table 1	(B): Pearson Correlation Coefficients of Dependent and Independent Variables	66
Table 2:	Difficulties faced by BRTEs while Imparting ABL Training	67
Table 3:	Percentage of Teachers who responded correctly to Awareness Questions	67
Table 4:	Percentage of BRTEs who responded correctly to Awareness Questions	68
Table 5:	ABL Issues Discussed in VEC Meetings in Sample Schools (%)	68
Table 6:	Creating Awareness among Villagers	69
Table 7:	Teachers' Views on Requirement of Additional Materials	69
Table 8:	Sources for Procuring Additional Materials	69
Table 9:	Observations Regarding Classroom Structure and Organization	70
Table 10:	Teachers' Views on Duration of Training (%)	70
Table 11:	BRTEs' Views on Training on ABL	70
Table 12:	Teachers' Views on Methodology Adopted in ABL Training	71
Table 13:	Teachers' Views on Contents of ABL Training	71
Table 14:	Teachers' Views on Follow-up Activities of ABL Training	71
Table 15:	Teachers' Views on trainers (%)	72
Table 16:	Teacher's Views on ABL Card Activities (%)	72
Table 17:	Teachers' Views on Sequencing of Milestones and Cards	72
Table 18:	Difficulties faced by Teachers in ABL Classes	73
Table 19:	Students' Ease of Handling Various Cards	73
Table 20:	Students' Preferences of Various Font Sized Letters	73
Table 21:	Students' Views about Various Graphics in Cards	74
Table 22:	Teachers' Responses on Innovations in ABL Methodology	74
Table 23:	Teachers' Responses on the Appropriateness of the Evaluation Strategy used in ABL	74
Table 24:	Teachers' Responses to why ABL Evaluation Strategy is Appropriate	75
Table 25:	Percentage of Students who are Positive about ABL Aspects	75
Table 26:	Learning in ABL Classrooms	76
Table 27:	Perception of Students on Learning with the help of the Teacher	76
Table 28:	Percentage of Students who Responded that they like to Learn most from ABL Cards rather than Textbooks	77

Table 29:	Students' Responses on Why they Like ABL Cards or Textbooks	77
Table 30:	Marks Scored by Students in Schools (in %)	77
Table 31:	Mean Differences in Achievement Tests across Schools	78
Table 32:	Mean Achievement of Students by Region	79
Table 33:	Mean Difference and T-values for Rural and Urban Students in different subjects	79
Table 34:	Marks Scored by Students by Gender	79
Table 35:	T-Values of Mean Marks of Boys and Girls in Different Subjects	80
Table 36:	Achievement Levels of Class 3 and 4 Students in Tamil Nadu, 2004-2010	80
Table 37:	Teachers' observations of the influence of the ABL programme on the Children: in school or out of school, in the ABL classes and others not in the ABL classes.	81
Table 38:	BRTes' observations of the influence if any, negative or positive, of the ABL programme on the following: Children: In school or out of school.	81
Table 39:	Community Members' observations of the influence of the ABL programme on the following: Schools and Classrooms	82
Table 40:	Teachers' views about learning through ABL approach	83
Table 41:	Parents' views regarding the advantages of introducing ABL	83
Table 42:	Teachers' views about innovation/improvement of classroom processes involved in ABL approach	84
Table 43:	Parents' observations regarding the influence of the ABL programme on Children: In school or out of school; ABL children or non ABL children	84
Table 44:	Community Members' observations regarding the influence of the ABL programme on children: in school or out of school, in the ABL classes and others not in the ABL classes	85
Table 45:	Teachers' observations regarding the influence of the ABL programme on the Teachers working with ABL classes and those who are not working with ABL classes	85
Table 46:	Parents' views regarding the overall impact of the ABL scheme?	86
Table 47:	BRTes' observations of the influence of the ABL programme on the Teachers working with ABL classes and those who are not working with ABL classes	86
Table 48:	VEC members' observations of the influence of the ABL programme on the Teachers working with ABL classes and those who are not working with ABL classes	87
Table 49:	Community Members' observations of the influence of the ABL programme on the Teachers working with ABL classes and those who are not working with ABL classes involved in the project	88
Table 50:	VEC Members' observations of the influence of the ABL programme on the Community including parents	88

# ACRONYMS

<b>BICS</b>	Basic Interpersonal Communication Skill
<b>ABL</b>	Activity Based Learning
<b>AEEO</b>	Assistant Elementary Education Officer
<b>ALM</b>	Active Learning Method
<b>BFL</b>	Better Female Literacy
<b>BRC</b>	Block Resource Centre
<b>BRTE</b>	Block Resource Teacher Educator
<b>CAL</b>	Computer Aided Learning
<b>CRC</b>	Cluster Resource Centre
<b>CWSN</b>	Children with Special Needs (CWSN)
<b>DEE</b>	Department of Elementary Education
<b>DESSH</b>	Department of Education in Social Sciences & Humanities
<b>DIET</b>	District Institute of Educational and Training
<b>DISE</b>	District Information System for Education
<b>DPEP</b>	District Primary Education Programme
<b>DPO</b>	District Project Office
<b>DTERT</b>	Department of Teacher Education, Research & Training
<b>EDUSAT</b>	Education Satellite
<b>EF</b>	Evaluation Framework
<b>EQ</b>	Evaluation Question
<b>EVS</b>	Environmental Studies
<b>FGD</b>	Focus Group Discussion
<b>JCSEE</b>	Joint Committee on Standards for Education Evaluation
<b>LFL</b>	Lowest Female Literacy Levels
<b>LLB</b>	Low Level Blackboard
<b>MCQ</b>	Multiple Choice Question
<b>MHRD</b>	Ministry of Human Resource Development
<b>NCERT</b>	National Council of Educational Research and Training
<b>NCF</b>	National Curriculum Framework
<b>NGO</b>	Non Governmental Organization

<b>PLM</b>	Programme Logic Model
<b>PRI</b>	Panchayati Raj Institution
<b>REC</b>	Rishi Valley Rural Education Centre
<b>RIE</b>	Regional Institute of Education
<b>SALM</b>	Simplified Active Learning Method
<b>SLM</b>	Self Learning Material
<b>SPD</b>	State Project Director
<b>SPO</b>	State Project Office
<b>SSA</b>	Sarva Shiksha Abhiyan
<b>TLM</b>	Teaching Learning Material
<b>TNSSA</b>	Tamil Nadu Sarva Shiksha Abhiyan
<b>UEE</b>	Universalization of Elementary Education
<b>VEC</b>	Village Education Committee

# ACKNOWLEDGEMENTS

The evaluation was conducted as part of the capacity building programme of National Council of Educational Research and Training (NCERT) under the Sarva Shiksha Abhiyan - Technical Cooperation fund (TCF). The TCF is supported by its development partners (viz., the World Bank, DFID and European Union) and Ministry of Human Resource and Development (MHRD); our sincere thanks to them.

We extend our heartfelt gratitude to Mr R. Venkatesan, Former State Project Director, SSA, Tamil Nadu, and his team for their continued support and assistance during the study. We would like to thank Dr R. Elangovan, Former Director, Directorate of Teacher Education Research and Training (DTERT), Tamil Nadu and his team for their support.

The team gratefully acknowledges the important contributions of the DIET principals, BRTes, and coordinators of the fifteen sample districts. The hard work of the field investigators, field supervisors, district and state coordinators engaged for data collection in the study is highly appreciated. We are also deeply indebted to Professor M.C. Sharma (IGNOU), Professor Mohammad Miyan (Vice Chancellor, Maulana Azad National Urdu University), Professor D. Brahadeeswaran and Professor B. Mukhopadhyaya (National Institute of Technical Teachers Training and Research, Taramani, Chennai) and Professor J.P. Mittal (retired professor, NCERT) for the guidance provided by them during the process of tool development.

Special thank you to all the students, teachers, head teachers, parents, Village Education Committee members and community members who contributed in collection of the data. The study would not have been possible without their support.

Dr Jayshree Oza, Team leader, SSA – TC Fund - Technical Services Agency and her entire team deserves a special mention for steadfast support and encouragement throughout the study.

We would like to thank the members of the Advisory Panel Professor J. Bradley Cousins, Dr Chris Coryn, Dr Darleen Opfer, and Dr Sanjeev Sridharan for providing continuous academic support and direction to the team, throughout the study. We are deeply indebted to Professor Stufflebeam and Professor John Owen for reviewing the final reports and providing valuable suggestions for future evaluations. The team would also like to thank the faculty of various universities and research institutions in UK, USA, and Canada, which were visited during the various study tours. Special thank you to Ms Robyn Sachs and Dr Wendy Ryan for their valuable assistance during the finalization of the report.

# EXECUTIVE SUMMARY

The Ministry of Human Resource Development (MHRD), Government of India assigned the evaluation study of Activity Based Learning (ABL) in Tamil Nadu to the Department of Elementary Education, NCERT, New Delhi.

Activity Based Learning is a major quality initiative introduced by Tamil Nadu Sarva Shiksha Abhiyan. It is based on the pedagogical principle of learning through activities. ABL is implemented in classes One to Four. Students in ABL classes use a variety of learning materials such as learning cards, learning ladders, Science and Mathematics kits and supplementary reading materials. Teaching-learning in ABL is meant to be child-centered. Teachers act as facilitators and children work with learning cards in six groups and move from the teacher-supported group to the self-evaluation group. In ABL, each child monitors his or her own learning and gets support from peers.

The initiative was introduced in a phased manner. In the first phase (2002-03), this initiative was piloted in 13 schools of Chennai Municipal Corporation. During the second phase (2003-04), all 264 schools of Chennai Corporation were brought under the purview of the ABL programme. In the third phase, in the year 2006-07, ABL was expanded to 4100 schools (10 schools in each block of Tamil Nadu). During the last phase, the ABL initiative was up-scaled to about 37,500 schools, i.e., all schools run by Tamil Nadu state government and the aided schools (schools receiving financial aid from the state).

## ***Evaluation Design and Data Sources***

The study aimed to answer the following four evaluation questions:

1. Is ABL being implemented as intended? If not, why not?
2. To what extent are ABL support systems (curriculum, teacher training and support by BRTes) effective in improving classroom practices?
3. Has ABL improved student achievement in different subject areas? If so, to what extent?
4. What other (non-academic) outcomes are attributable to ABL?

The study was conducted in 280 sample schools drawn from Chennai, Coimbatore city, and 13 other districts in Tamil Nadu. The study team consisted of faculty from NCERT, DTERT and TNSSA, as well as 113 field staff.

Data from interviews were collected from various stakeholders including 552 teachers of classes One to Four, 44 teachers of classes Five to Eight, 529 Block Resource Teacher Educators (BRTes), 2239 students studying in classes Two to Five, and 1317 parents of children studying in classes Two to Five. Questionnaires were administered to 882 ABL teachers and 526 BRTes. A total of 558 focus group discussions were held—; 280 with VEC members and 278 with community members. In addition, 1112 classrooms were observed. A nonequivalent control group design was used to assess the impact of the ABL programme on student achievement. In absence of an independent comparison group the students who were exposed to the programme for a longer duration (phases I and II) were compared to students exposed for a shorter duration (phases III and IV), with the assumption that longer exposure to the programme would result in higher performance from students.

## ***Findings for Evaluation Question 1: Is ABL being implemented as intended? If not, why not?***

Evidence suggested that ABL was not being fully implemented as intended. Firstly, though teachers reported that they received training and felt competent in ABL methodology, evidence from BRTes suggested poor attendance, participation and lack of cooperation from teachers during ABL training. BRTes also referred to teachers' perception of parental dissatisfaction about ABL and teachers' resistance in accepting the new ABL methodology.

Although teachers and BRTes possessed good knowledge and awareness of the ABL methodology, improvements

were still required with regard to their understanding of teachers' role with different groups, self-learning material, use of ABL cards and supplementary material, purpose of teacher cards and sequence of activities.

Secondly, the awareness of parents, community members and VEC members was found to be limited, especially with regard to how ABL differs from regular schooling in terms of non-usage of textbooks, self-assessment instead of examination, and lack of homework and progress cards.

Thirdly, results suggested that improvement in classroom organization was required, especially in phase III and IV schools. A large number of teachers (approximately 44%) felt the need for additional material during the teaching learning in ABL classrooms, and some teachers reportedly spent their own money to procure the additional material.

Possible reasons for ABL not being implemented as intended included inadequate training of teachers, BRTEs and VEC member and lack of knowledge and awareness among teachers, BRTEs and the community about ABL methodology. Teachers' enhanced workload and their inability to sit on the floor amongst students due to health problems may have further impeded proper implementation of ABL. Implementation gaps were also observed in infrastructural aspects such as lack of space, provision of cards and inadequacy of additional support material.

***Findings for Evaluation Question 2: To what extent are ABL support systems (curriculum, teacher training and support by BRTEs) effective in improving classroom practices?***

Overall, results were mixed with regard to the effectiveness of ABL support systems. With regard to teacher training, teachers expressed a positive perception towards ABL methodology and were satisfied with different dimensions of training. However, many teachers expressed that follow up activities were weaker in phase I and II schools. Evidence also suggested that a longer duration of training was needed by Coimbatore teachers and BRTEs, and more training was required for teaching of English and Mathematics. The content of training material was rated as good by experts; however, experts also expressed a need to make the training material more contextually relevant.

With regard to curriculum, educational experts, teachers and students demonstrated positive perceptions about ABL methodology. This included perceptions that ABL curriculum enabled the teaching learning process to move away from textbooks and use a variety of learning materials. Cards were rated as "good" on content and physical aspects, but needs for improvement were suggested in terms of inaccuracies of illustrations, restricted usability and relevance. Evidence also suggested that at times cards were used in a way that promoted drilling, or mechanical ways of learning. There was also some disagreement between experts and teachers with regard to the extent to which cards enhanced children's thinking capacity, sequencing of cards and milestones, and whether activities were appropriate, simple and easy.

Similarly, most of the supplementary material was rated from *satisfactory to excellent* by experts. However, there were some reports of poor quality of supplementary material, and reports of issues with regard to language used, illustrations, font size and factual inaccuracies. Concerns about the safety aspects of the Mathematics' kit were also raised. A suggestion to develop district specific supplementary books was also mentioned.

***Findings for Evaluation Question 3: Has ABL improved learning levels of children in different subject areas? If so, to what extent?***

The achievement of children throughout the state was found to be above 70%; however because there was no comparison group or counterfactual in this study, this high level of achievement cannot be attributed to the ABL programme. The comparison carried out in this study assessed whether those exposed to the programme for a longer time would have higher achievement compared to those exposed for a shorter time. Results did not support this assumption. Differences in achievement may be attributed to differences found in SES and urban versus rural. Data also showed that rural students outperformed urban students, and that girls out performed boys.

***Evaluation Question 4. What other (non-academic) outcomes are attributable to ABL?***

Qualitative data pointed to several non-academic outcomes associated with the ABL initiative. These included greater self-confidence, increased motivation and less fear of teachers and exams among students; improved student-teacher relations; better cooperation among students; increased teacher involvement; a greater focus on child-centered practices. An unintended negative outcome that emerged included increased teacher workloads. A few teachers also reported developing health problems due to sitting on the floor for long hours.

**RECOMMENDATIONS**

Based on the findings from this study, the following recommendations are offered for consideration:

- More effort should be made to understand teachers' resistance/problems in the acceptance of the ABL methodology, and address their issues and concerns with regard to increased workload.
- Make the following changes with regard to training of teachers and BRTEs:
  - Training should be strengthened in the following areas: teachers' roles with different groups; competence in organising ABL classrooms/activities; self-learning materials; ABL cards and the use of supplementary learning materials; teacher cards; and the sequence of activities. Emphasis should also be given to improve the classroom processes during training programmes, in order to help the teachers use a child-centred approach during the ABL teaching-learning.
  - Duration of training may be enhanced as per the needs of the teachers, and regular follow-up of training should be undertaken.
  - Training in teaching of Mathematics and English, both in content and methodology should be organized regularly.
  - Training materials should be adapted to local needs and context.
- Advocacy programmes need to be organized for creating awareness among parents, community members and VECs about various aspects of ABL methodology and its different aspects, such as no examinations, no homework.
- Make the following changes with regard to ABL material:
  - Improve the quality of supplementary learning materials in terms of content, language used, illustrations, font size and factual inaccuracies. For example, the content of the ABL activities should be reviewed to rule out the elements promoting rote learning, and include items that enhance the thinking capacities of children. Activities given in ABL cards should also be linked to children's daily life, and children should be given more concrete learning experiences outside the classroom.
  - Ensure availability of additional/supplementary materials in order to organise ABL activities effectively. The grant meant for Teaching Learning Material (TLMs) may be given to teachers in a timely manner so that they can procure supplementary/additional materials required for organising ABL classrooms.
  - Allow for flexibility to use textbooks along with the existing ABL material during school.
  - Items of the Mathematics kit should be examined to increase their safety for children.
- Strengthen the child-friendly aspects of ABL suggested by the results of this study, including the fact that it has enhanced students' self-confidence, removed the fear of teachers and examinations, and reduced the heavy load of bags.



Section 1

# Introduction and Background

# SECTION 1: INTRODUCTION AND BACKGROUND

Programme evaluation is one of the growing fields in the social sciences and policy research studies. It involves the use of a variety of social science research methods and scientific principles by the evaluators, to study and appraise an intervention for its effective conceptualization, implementation and completion, and to diagnose the issues affecting these for its improvement. It helps different agencies in not only achieving the desired objectives and deal with challenges they come across during the implementation of the planned interventions but also identify their strengths that can be replicated and/or adapted suitably.

The Government of India, in partnership with state governments, carries out a number of activities through various schemes of public welfare, for example, building infrastructure, providing healthcare, education and other essential services through the Five Year Plans<sup>1</sup> involving huge budget allocations. Sarva Shiksha Abhiyan (SSA) is a massive programme of the Government of India towards achieving the stupendous and time bound goal of Universalisation of Elementary Education (UEE). It aims to provide elementary education of a satisfactory quality to all children along with bridging social, regional and gender gaps with active participation of the community. The Indian states in partnership with the central government are empowered by the Indian Constitution to evolve their own educational interventions that are contextual to suit the local needs to achieve the objectives of the National Policy on Education 1986 and SSA.

Evaluation of an educational initiative is of interest to educational planners, managers, academicians and other stakeholders in different ways. It helps in providing feedback to the programme community, teachers, teacher-educators and educational functionaries, which further helps them to identify and address the challenges and use the strengths of the initiative for their relevance in the local context and also for replication in other parts of the country.

Keeping this in view, SSA implementation agency in Tamil Nadu has been taking up various evaluation studies.<sup>2</sup> However, so far, there have been no studies conducted by any national level agencies. The present study has been undertaken following the international evaluation standards.

The Ministry of Human Resource Development (MHRD), Government of India assigned the evaluation study of Activity Based Learning (ABL) in Tamil Nadu to the Department of Elementary Education, National Council of Educational Research and Training (NCERT), New Delhi. It also provided an opportunity to build the professional capacity of the NCERT faculty and the state counterparts on programme evaluation.

In this chapter, a brief background of the ABL initiative and process of evaluation is provided.

## 1.1 Background

The state of Tamil Nadu has one of the highest literacy levels amongst the states in India. According to the 2001 Census<sup>3</sup>, the literacy rate for the country was 64.8%, while in Tamil Nadu it was nearly 75%. There are approximately 54,000 schools in Tamil Nadu and 70% of these are either primary schools or have primary sections. More than 6 million children study in these primary classes.

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1 Planning Commission - an important organ of the Government of India established an independent body – Programme Evaluation Organization (PEO) in 1952 to conduct programme evaluation of various interventions of the departments of central government, through its state level offices. These evaluation studies help in improving the quality of interventions. See the website: <http://planningcommission.nic.in/>

2 For details, see Revathy (2008), Sakkthivel (2008). For important details of these study reports, see <http://www.ssa.tn.nic.in/Rcsearch.htm>.

3 <http://www.censusindia.gov.in/2011-common/censusdataonline.html>

To achieve universalization of elementary education, the Government of Tamil Nadu in partnership with the central government has been implementing a variety of welfare schemes. These include (i) Mid Day Meals for students from classes 1 to 10; (ii) Free slates for class 1 students; (iii) Free bus passes for all students to come to school; (iv) Free textbooks and uniforms for all students from classes 1 to 8; (v) Teaching learning materials through Operation Blackboard scheme in elementary classes; (vi) Infrastructural facilities under Operation Black Board scheme and (vii) Building schools, classrooms and other infrastructure under Prime Minister's Gramadoya Yojana programme; (viii) Area Intensive Programme and Educational Technology Scheme and (ix) Total Literacy and Post-Literacy Campaign.

Since 2001, the Tamil Nadu unit of the SSA has been evolving and implementing a variety of innovative programmes to achieve the goals of SSA. Some of them are: (i) The ABL programme; (ii) Active Learning Method (ALM); (iii) Enriching English language at the primary level; (iv) Design and development of "Simple English"; (v) Mathematics education at primary level; (vi) Supply of materials under 'Science is Fun' scheme; (vii) Development of self learning materials (SLM) & workbooks; (viii) Providing/ supplying television/Digital Video Disk players for every school; (ix) Computer Aided Learning (CAL) through Information Communication Technology; (x) Mobile science van; (xi) Reading cell development; (xii) Broadcast of interactive English lessons for class 5 students; (xiii) Special residential camps and (xiv) Use of Education Satellite (EDUSAT).

Among these, ABL is one of the initiatives that has received wide attention from scholars and policy makers, as this quality initiative aims at child-centered learning by using an innovative approach to improve classroom processes<sup>4</sup>. The ABL has also been viewed as a major systemic change, in doing away with rote learning and the dominating role of teachers in primary education.

## 1.2 Programme Description

ABL methodology is based on the pedagogic principle of learning through activities. In each subject, under ABL, the competencies are split into different parts or units called milestones that are developed into different activities. These milestones and activities are arranged in a logical sequence from simple to complex. Clusters of milestones are linked together into ladders. Each milestone has different steps of the learning processes represented by logos having six types of activities viz., introduction, practice, reinforcement, self-assessment or evaluation, remedial and enrichment activities. Group cards are used to engage students in group learning activities.

The ABL initiative aimed at the following dimensions to improve the quality of primary education in schools of Tamil Nadu: raising the achievement of students in different subjects at the primary level, changing the classroom practices by making them more child-centered, creating a conducive learning environment and most importantly, changing the role of the teacher to that of a facilitator. This shift in the role of the teacher provides children more freedom to express, ask questions, and learn through peer groups.

In this approach, students of classes 1 to 4 are provided opportunities to learn at their own pace. They carry out a number of activities with the help of teachers, peers and by themselves using a variety of materials such as learning cards, ladders, kits in Science and Mathematics, and supplementary reading materials. These cards contain activities students are expected to do in each group. All students in a typical ABL classroom sit in six groups and work with cards as directed by subject and class-specific ladder charts. Students sitting in group 1 are familiarized with the use of ABL learning material and ladder chart by the teacher. They are also taught how to pick up and use cards from various trays. This may take place at the beginning of every academic year and is expected to continue for not more than six weeks. Students sitting in group 2 are introduced to the concept of each milestone. Students then move to groups 3, 4, 5 and 6 to perform activities pertaining to practice, reinforcement and self-evaluation of the specific

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4 <http://www.ssa.tn.nic.in/CurrActivities-A.htm>

milestone concepts. During this time, students interact with other students sitting in the group, and use Low Level Black Board (LLB), note books and workbooks. Besides doing activities of milestones, they also carry out side-ladder activities. Most side-ladder activities are group activities to be performed outside the classroom with the guidance of teachers. The teacher sits with students in groups 1 and 2, facilitating their understanding of ABL learning materials and introducing each subject-specific milestone concept. She also monitors students' movement to other groups and their use of low level blackboards, checks their notebooks and workbooks, and also guides them outside the classroom while doing side-ladder activities and other activities such as filling up attendance sheets and use of Arogya Chakra and weather charts. Finally, she also records students' progress through an annual achievement chart.

The ideal ABL class size is not expected to exceed 40 students across classes 1 to 4 (multi-grade, multilevel). Classes 1 and 2 are combined<sup>5</sup> across all the schools. However, in case of classes 3 and 4, depending on the available space, number of teachers and the students enrolled in classes 1 to 4, the headmasters in schools are free to adopt a suitable option out of the following arrangements; (a) Classes 1 to 4 can be combined, which means each section will have students of all the four classes or (b) Classes 3 and 4 can be combined or (c) Classes 3 and 4 can be separate.

For instance, if there are only two teachers in a primary school having classes 1 to 5 then one teacher sits with all the students from classes 1 to 4 who work with ABL material in one room whereas class 5 students sit in another room and learn through Simplified Active Learning Method (SALM) with another teacher.<sup>6</sup>

In order to fulfill various requirements of the ABL initiative, the State Project Office (SPO) of Tamil Nadu SSA undertook various steps to familiarize the programme community (i.e., practicing teachers, teacher educators and all educational functionaries) to the alternatives available.

### 1.2.1 Rationale for ABL

Although Tamil Nadu has a relatively high literacy level, the quality of schooling was unsatisfactory. In a study, the achievement in language and Mathematics of class 3 students was found to be quite low; Tamil Nadu was ranked 10<sup>th</sup> among all the 35 states, and in Mathematics, the score was as low as 53.5%, with the state ranking 23 in the country (NCERT, 2008).

A research team constituted by the Tamil Nadu Sarva Shiksha Abhiyan (TNSSA) was asked to investigate the classroom practices and explore the reasons for low achievement of students.<sup>7</sup> It was found that the classroom practices were highly teacher dominated and involved rare use of teaching-learning material. The team also found out that great emphasis was placed on rote learning, and lecture mode was the common practice adopted by teachers who assumed that children did not know anything and needed to be taught everything by teachers. It was assumed that children learn at a uniform pace and achieve curricular competencies uniformly. It was also reported that the existing classroom practices did not offer a range of opportunities to the learners as there was an implicit assumption that each child learnt in the same way. There was a wide gap between teachers' expectations and children's learning. The team also observed that when students were absent for a few days, there was no way for them to recover the loss of learning during the period of absence.

In addition to that, the state also had problems due to multi-grade situations similar to those in other parts of the country. Teachers had to teach children in a mixed age-group scenario in more than two-thirds of primary schools

5 Combining different classes implies that students of these stages are required to sit together in one classroom.

6 During the field visits, it was noticed that teachers in two-teacher schools evolve their own strategy and share the work equally. For example, in one school, both the teachers work with ABL students. While the head master managed class 4 (ABL) and class 5 (SALM), another teacher looked after the students of classes 1 to 3 (ABL).

7 For further details of the study please visit <http://www.ssa.tn.nic.in/CurrActivities-A.htm>.

in the state, where the textbook was the only teaching-learning resource. They reported that it was just impossible to effectively teach five classes together with the prescribed 23 textbooks. There was no joyful learning and neither any scope for self, peer and group learning. Also the students were not exposed to modern ways of assessment. Hence, there was a need for an approach having learning processes that would offer scope for diverse learning styles, intelligences and abilities.

### 1.2.2 Development of ABL

The roots of ABL<sup>8</sup> can be traced to as early as 1994, when M.P. Vijayakumar, the erstwhile Collector of Vellore, took the initiative of educating children working as bonded labourers. In collaboration with colleagues, he opened a few special schools for the rescued young bonded labourers. One such school was functioning in a building adjacent to a regular school. In the alternative school, learning methods and materials were introduced in a child-friendly and joyful way so that children showed an interest in coming to school. The completely unexpected outcome of this effort was that both children and teachers in the regular school got interested in this new way of teaching and learning. In 1996, this programme called “*Katralil Inimai*” or “Joyful Learning” was documented as a teachers’ guide locally known as “*Karpathu Karkandey*” for the use of 7000 teachers in the state. In 2003, when Vijayakumar took charge as the commissioner of Chennai Corporation, he created an experimental group consisting of four programme coordinators working in the state run teacher education institutions and 26 primary teachers of the schools run by Chennai Corporation. This group worked to develop a holistic pedagogical framework that would help to address the concerns referred above through discussion and consensus. After visits to various innovative educational schemes across India, and inputs from diverse streams of educational thought and practice, this group evolved a set of basic principles. From 2003 to 2007, the vision of a small core group of teachers in Chennai was slowly up-scaled and extended into ABL programme for the whole state of Tamil Nadu. Since 2007, all schools run by local government, education departments, and private schools receiving aid from the Tamil Nadu government have implemented ABL.

### 1.2.3 Material Development

ABL teaching-learning material was developed in different phases. Its content was based on the syllabi and textbooks of all subjects brought out by the agencies of the Government of Tamil Nadu. In 2002-03, the experimental group that evolved the basic principles of ABL in Chennai was sent to observe the curricular practices and materials used at the Rishi Valley Rural Education Centre, an educational venture of Krishnamurthy Foundation of India in Chittoor, Andhra Pradesh.<sup>9</sup> They underwent a series of training programmes to understand Rishi Valley Rural Education Centre’s curricular materials and classroom practices, which helped them develop different modules and hence, the ABL material. The modules developed by the team were pilot-tested in 2003 in selected schools run by the Chennai Corporation. During this stage, classes 1 and 2 in ABL schools were combined. Since the results were encouraging,<sup>10</sup> this approach was extended to all 264 schools in Chennai Corporation during 2004. During this phase, learning cards for classes 1 and 2 (in 4 subjects) and teachers’ manuals were prepared, published and disseminated. In 2005, classes 3 and 4 were combined with classes 1 and 2. Workbooks for classes 1 and 2 for four subjects were also developed and disseminated during 2004-2005.<sup>11</sup> ABL learning materials such as cards and learning ladders were modified on the basis of feedback received from teachers.

8 The origin of important components of ABL such as learning ladder, bouquet of books and folk art activities can be traced to methods and materials used in Neel Bagh, an alternative school run by an English man David Horsburgh in Kolar District, Karnataka near Bangalore, and many enthusiastic teachers who have undergone training in the Neel Bagh and set up their own alternative schools in different parts of India. See <http://www.ssa.tn.nic.in/Docu/ABL-Report-by-Dr.Anandhalakshmi.pdf>

9 See [http://www.rishivalley.org/rural\\_education/training.htm](http://www.rishivalley.org/rural_education/training.htm) for more details on the Rishi Valley Rural Education Centre.

10 See Schoolscape (2005), Activity Based Learning Programme of the Corporation of Chennai - A Mid-Term Appraisal, unpublished study conducted, Chennai, 2005.

11 See <http://www.ssa.tn.nic.in/CurrActivities-A.htm> for more details on other aspects of Activity Based Learning such as teacher preparation and monitoring.

### 1.2.4 Phasing of the Initiative

Implementation of ABL began in 2002-03 and was carried out in a phased manner. During 2002-03, it was pilot-tested in 13 schools run by the Chennai Corporation, and was extended to all its 264 schools in 2003-04. In 2006-07, it was further extended to about 4,100 government run schools, covering 10 schools from each block of the whole state. These were later named as 'model schools'. In 2007-08, ABL was further up-scaled to about 37,500 schools, wherein all schools run by government education departments, and local governments such as municipal corporations and private schools receiving government aid were a part of this initiative.

### 1.2.5 Support Systems

ABL requires the production of a variety of teaching learning materials on a large scale. Most of them were produced and distributed to schools by SSA, Tamil Nadu. A few institutional mechanisms, like setting up the resource centers at the block and cluster levels, evolved during the District Primary Education Programme, are now replicated in SSA and have also been used to support ABL.

Two important institutions playing a major role in implementation of ABL were Cluster Resource Centres (CRCs) and Block Resource Centres (BRCs). During 2009-10, 385 Block Resource Centres, which included 285 rural BRCs and 28 upgraded CRCs in urban areas, were functional in Tamil Nadu. The TNSSA recruited a considerable number of Block Resource Teacher Educators (BRTes) to provide training and monitor the progress of all the SSA initiatives including ABL. During 2009-2010, around 6,000 BRTes were working in BRCs and CRCs. Each Block Resource Teacher Educator has been assigned the responsibility of 10-15 schools. BRTes visit schools to implement programme activities, involve the VEC/local community, and solve teachers' problems. They are also used by TNSSA to collect data on schools, undertake studies and monitor the working of the system in schools. About 4,100 CRCs are functional in Tamil Nadu. As most of the CRCs are located in schools, the head masters of these schools work as CRC supervisors. One CRC established for 10 to 15 schools provides opportunities to teachers working within the cluster to share their experiences and innovative practices through monthly meetings. The meetings are used to discuss various quality initiatives including ABL.

Training programmes, formulated at the state headquarters are organized in a cascade model, through a cadre of master trainers including BRTes at district, block and cluster levels, and faculty of District Institutes of Education and Training (DIETs)<sup>12</sup>. More than 6,000 BRTes and 1.22 lakh primary school teachers are involved in implementing ABL in Tamil Nadu.

ABL training is handled by both resource teachers and BRTes. Initially, all BRTes were trained by the resource teachers working in Chennai schools. Later, BRTes and resource teachers together became a resource group for training teachers in different parts of Tamil Nadu. While BRTes provide the details of theoretical aspects of ABL, practicing teachers share their experience through demonstrating ABL classroom activities. Training programmes were conducted, based on specific content to enrich ABL classroom activities and enhance the teacher's performance in implementing the ABL methodology. Training was focused on ABL cards, Villupattu, puppet show, use of self learning material, supplementary reader, logo, charts, self attendance chart, binding wires and low level blackboard. Follow-up activities after training were provided through regular visits by the BRTes. During the visits, they organised review meetings, and discussed records being maintained at the school level such as the consolidated reports of student achievement, self attendance charts, weather charts, and children's workbooks. Schools were also graded and monitored through a 2-point rating scale containing 12 items.<sup>13</sup>

12 These are institutions established and run by state governments in each district to provide mainly pre-service teacher education programmes (two-year diploma programme). They also provide in-service training to teachers working within the district. The faculty members of DIETs participate in training programmes organized under SSA.

13 See Appendix A for details. Some items of this grading sheet were also used in the classroom observation schedule of the present study.

### 1.2.6 Assessment

Under ABL, there is no external examination, as evaluation is in-built with the learning cards and ladders. After completion of each milestone, children are appraised by teachers who then record the completion of milestones in the achievement charts displayed in the classroom. Visitors to an ABL class could see that the achievement level of each student in different subject areas is displayed on the wall.

## 1.3 Evaluation Process of ABL

A team comprising faculty members from NCERT, Directorate of Teacher Education Research and Training (DTERT), Tamil Nadu, and two officers from State Project Office of SSA Tamil Nadu was constituted by the NCERT to conduct the evaluation study of the ABL initiative. This team was trained through a series of training sessions, workshops and conferences on programme evaluation in India and abroad.

In order to have a better understanding of ABL, all the team members also visited a few schools in the surrounding districts of Chennai. During the first two workshops, the draft Programme Logic Model (PLM), the Evaluation Framework (EF)<sup>14</sup> and the evaluation research design were developed. All members were also trained to understand and use the Programme Evaluation Standards<sup>15</sup> developed by Joint Committee on Standards for Education Evaluation (JCSEE). The sampling design, which includes the sample size for conducting the study, the criteria to be used for selecting schools, the feasibility and logistical requirements for conducting the study were also discussed at the workshops. Thereafter, the team presented its draft Evaluation Design and received comments and suggestions from evaluation experts (from India and abroad) and other participating evaluation team members during the third meeting and accordingly, the evaluation design was modified and finalized.

## 1.4 Programme Logic Model

The programme logic model (PLM) is a systematic representation of logical sequence of a programme and causal relationships among its components. Most PLMs contain identified needs, resources available to achieve the perceived impact, activities to be performed and perceived output, long term and short term impacts. The PLMs are being used mostly by programme evaluation communities for planning scientific and systematic evaluation. The detailed investigation of each dimension of the PLM helps in understanding the programme and to conduct evaluation based on evidence. It also provides the relationship between different resources, output and outcomes. They are also called “Chains Reasoning” (Torvatn, 1999), “Theory of Action” (Patton, 1997) and “Performance Framework” (Montague, 1997), to denote the same. For the present study, a PLM was developed after holding discussions with various stakeholders, understanding the initiative in its various dimensions and a few visits to schools in which the ABL has been implemented (Table 1). In the PLM for ABL, we can see all the five important dimensions (identified needs, inputs / resources, activities, outputs and outcomes). The remainder of this section will discuss the logic underlying the PLM; i.e. the assumptions of the ABL programme, including the expected relationship between activities and outcomes.

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14 See Appendix B

15 See <http://www.jcsec.org/>. For the latest edition of Evaluation Standards Statements see Yarbrough, D. B., Shulha, L. M., Hopson, R. K., and Caruthers, F. A. (2011).

**Table 1: Programme Logic Model for Activity Based Learning**

Identified Needs	Inputs / Resources	Activities	Outputs	Outcomes		
				Immediate	Intermediate	Long Term
<p><b>Children</b></p> <ul style="list-style-type: none"> <li>Develop inquiry and independent learning in children</li> <li>Enhance learning levels of children</li> <li>Improve Learning with understanding</li> <li>Enhance confidence level and self esteem among children</li> <li>Develop thinking skills</li> </ul> <p><b>Classroom Process</b></p> <ul style="list-style-type: none"> <li>Shift from teacher centred to learner centred, child friendly classrooms at the primary level</li> <li>promote self learning potentials of children</li> <li>Increase child participation and retention in schools</li> </ul> <p><b>Teacher</b></p> <ul style="list-style-type: none"> <li>Develop ability to deal with multigrade / multilevel situations effectively</li> <li>enable students to learn at their own pace</li> <li>make evaluation child friendly</li> <li>Develop capacity of teachers to create learner centred child friendly classrooms</li> </ul>	<p><b>Finance</b></p> <ul style="list-style-type: none"> <li>Local govt.</li> <li>State govt.</li> <li>Central govt.</li> <li>International Funding agencies</li> <li>VECs</li> </ul> <p><b>Human Resources</b></p> <ul style="list-style-type: none"> <li>Teacher Trainers</li> <li>Teachers</li> <li>NGOs</li> <li>Educational Administrators and functionaries</li> <li>VECs</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>Contextualised self learning materials</li> <li>Infrastructure for classroom management</li> <li>Training materials</li> </ul>	<p><b>Material Development</b></p> <ul style="list-style-type: none"> <li>Identification of institutions following alternative curricular practices (Rishi Valley Rural Education Centre – REC, Andhra Pradesh)</li> <li>Exposure visits of selected teachers to REC</li> <li>Setting up of working models (model schools in Chennai) for developing curricular materials (learning cards and ladders)</li> <li>Expansion of ABL initiative to more schools in Chennai</li> <li>Material development</li> </ul> <p><b>Teacher Preparation</b></p> <ul style="list-style-type: none"> <li>Series of training / orientation of Teachers</li> <li>Educational functionaries (AEEOs, DEEOs, CEOs, BRTes, CRC Supervisors, etc.)</li> <li>Demonstration and on-site support by trained practising teachers</li> </ul> <p><b>Up scaling of ABL</b></p> <ul style="list-style-type: none"> <li>Setting up of model schools in each block</li> <li>Expansion of ABL in all schools</li> <li>Provision of infrastructure required to implement ABL initiative</li> <li>Logistics, printing and distribution of materials required for use in ABL classrooms</li> <li>Monitoring</li> <li>Reorganising of activities of teacher educations (BRTes)</li> <li>Receiving feedback from teachers for improvement</li> <li>Review meetings at various levels of school administration</li> <li>Visits by state and district level functionaries</li> <li>Process based gradation of schools (performance)</li> </ul> <p><b>Other Activities</b></p> <ul style="list-style-type: none"> <li>Giving instructions through government orders to implement ABL</li> <li>Organisation of awareness programmes and orientation for Village Education Committees</li> <li>Mobilisation of support through media</li> <li>Development of various remedial measures</li> </ul>	<p><b>Material Development</b></p> <ul style="list-style-type: none"> <li>Practicing teachers, faculty members from DIETs / DTERT participated in exposure visits to REC</li> <li>13 schools and their teachers participated in material development</li> </ul> <p><b>Teacher Preparation</b></p> <ul style="list-style-type: none"> <li>Various modules and training manuals for teachers</li> <li>Training programmes conducted</li> <li>Teachers / Master trainers / BRTes visited (Chennai schools as part of Training)</li> <li>Training of educational functionaries</li> </ul> <p><b>Up scaling of ABL</b></p> <ul style="list-style-type: none"> <li>Number of cards and other ABL materials made ready</li> <li>Infrastructure provided</li> <li>Classrooms available for implementing ABL method</li> </ul> <p><b>Monitoring</b></p> <ul style="list-style-type: none"> <li>Amount of money spent for various ABL requirements</li> <li>Schools visits by various monitoring officials</li> <li>Review meetings held</li> <li>Awareness campaigns and orientation programmes held</li> <li>Revision of ABL materials based on Feedback</li> <li>Improvement in schools categorised on the basis of grades</li> </ul>	<ul style="list-style-type: none"> <li>Visible shift in classroom setting</li> <li>Change in classroom organisation and management</li> <li>Enhanced pupil involvement</li> <li>Improvement in teacher-pupil relationship</li> <li>Cleanliness and personal hygiene of the self and the classroom</li> <li>Child-friendly learner-centred classrooms</li> <li>Explicit knowledge –awareness of the children’s level of learning</li> <li>No fear of examination</li> <li>Easy management of multi-grade classes</li> <li>Facilitate each student to learn at her or his own pace</li> <li>Receive the support of peer group when required</li> </ul>	<ul style="list-style-type: none"> <li>Increased student participation and retention and enrolment</li> <li>Children understand concepts better</li> <li>Meaningful participation of children in classroom activities</li> <li>Children exhibit independent learning and spirit of enquiry</li> <li>Teachers are facilitators</li> <li>Shift in classroom environment from teacher centred to learner centred</li> <li>Progression through mastery learning</li> <li>Improved reading and writing skills</li> <li>Teacher empowerment in terms of perception, attitude and development of various competencies</li> <li>Establishment of classroom democracy</li> <li>Other unintended outcomes</li> </ul>	<ul style="list-style-type: none"> <li>Sustained retention of children in all schools</li> <li>Increase in level of achievement in all the curricular areas</li> <li>Enhanced confidence levels and self esteem among children</li> <li>Classrooms become child centred</li> <li>Children develop thinking skills</li> </ul>



Conventionally, students studying in primary classes worked with textbooks, slates, notebooks and other stationery. Since instructional materials and their format have a direct effect on the performance of the learners using those material (Sweller,1988), a need was felt to prepare alternative instructional material to improve children's learning levels. It was assumed that the use of a variety of learning material prepared under ABL would not only improve the learning levels but also motivate learners to participate actively in the learning process, and see learning as a joyful activity. Hence, it was assumed that the departure from the traditional practice of using textbooks to cards for developing competencies among learners would facilitate teaching-learning better. Learning in ABL is organized through activities based on cards as per the state syllabi in different subject areas. Use of cards also requires that teachers act as facilitators and motivate learners for peer learning, self learning and learning in small groups. The freedom and democratic set up of classrooms provides ample scope for both teachers and learners to interact, and is expected to produce quality classroom processes. Activities provided in ABL cards are evolved keeping in view the local context. Although the ABL materials were originally developed in selected schools in Chennai city, while organizing activities, space was also provided in ladders to include district-specific examples.

The ABL materials were made by teachers with the support of resource persons working in District Institute of Education and Training, Block Resource Teacher Educators and a few retired teachers. This has been done with the objective of empowering teachers; raising their self-confidence in developing curricular materials in the form of cards which are based on competencies. This involvement is expected to develop better understanding of content and how learning experiences can be organised, and to practice child-centered pedagogy.

Schools in which ABL cards were developed were used as laboratory schools for training teachers of other schools. To reach out to all teachers in the state, the ABL training programmes adopted demonstration and discussion methods.

Conventionally teacher-organized lesson plans, transacted curriculum as given in textbooks and conducted examinations. In the past, the role of educational functionaries was mainly to monitor the details of numbers in registers (i.e. attendance of teachers and students). A variety of training programmes organized for teachers under ABL aimed at changing their role to that of facilitators helping learners in the activities in the changed classroom. Orientation of educational functionaries on the various aspects of Activity Based Learning intended not only to understand, monitor its effective implementation but also to offer on-site support to teachers.

All the ABL learning materials and new arrangements made in ABL classrooms viz., the availability of low level blackboards, various charts, workbooks, story books, picture books in *bouquet of books*, self attendance sheets, Montessori materials, sitting arrangement for learners and teacher, and demonstration and discussion-based teacher training, and on-site support by BRTes, are expected to meet the identified needs of children, classroom process and primary teachers. This would pave the way for motivating children to come to school regularly, to see learning as joyful, raise their self confidence and self esteem and at the same time, raise their learning of curriculum.

## 1.5 Evaluation Framework

An evaluation framework (Appendix B) was developed using a participatory approach. Besides NCERT faculty members, international programme evaluation experts, the officials of TNSSA, BRTes and the faculty members of DIETs in Tamil Nadu actively participated in the study, from development of the logic model and framework to data collection, analysis and report writing. The evaluation framework contains evaluation questions, indicators associated to answer each question, data sources and methods to be used to gather data from different sources. This has benefitted evaluators in many ways, ranging from understanding the nature of the programme and its implementation, to receiving all the required logistical support. It was also beneficial for the programme community to understand the issues and concerns of the programme, and for monitoring purposes.

## 1.6 Evaluation Questions

During August 2009 to March 2010, the ABL evaluation study team conducted the study to answer the following evaluation questions.

1. Is ABL being implemented as intended? If not, why not?
2. To what extent are ABL support systems (curriculum, teacher training and support by BRTes) effective in improving classroom practices?
3. Has ABL improved learning levels of children in different subject areas? If so, to what extent?
4. What are the other major outcomes attributable to ABL?

The details of the study are discussed in the next section.



Section 2

# Methods

## SECTION 2: METHODS

The following aspects are discussed in this section: (i) Evaluation design; (ii) Sampling design; (iii) Instrumentation and procedures; (iv) Analysis plan and (v) Quality of the data.

### 2.1 Evaluation Design



In this study, a mixed method evaluation design involving qualitative and quantitative analyses has been used to answer the evaluation questions. As pointed out earlier, ABL was first pilot-tested in Chennai Corporation schools in 2002-03 and 2003-04 (phases I and II), and subsequently scaled up to the rest of the schools in the state in 2006-07 and 2007-08 (phases III and IV). The ABL implementation also shows that while Chennai Corporation schools implemented ABL for 7-8 years, schools in the rest of the state implemented ABL only for 3-4 years.

To best assess the impact of an initiative, baseline data and suitable comparison groups are required. Unfortunately, neither baseline data related to teacher aspects, classroom processes and students' achievement prior to the implementation of ABL nor a suitable comparison group were available.

Keeping these limiting factors in view, the alternative option available was to compare different groups of schools in which ABL was implemented at different points of time. It was assumed that the longer the implementation, the more child-friendly the classroom processes, and thus the better the student outcomes in curricular areas.

Four groups of schools were identified. These are listed below, and the details of school groups and evaluation design are given in Tables 2 and 3.

1. *Schools implementing ABL for a longer duration (phases I and II):* ABL was implemented in classes 1 and 2 in 2002-03 in 13 schools run by Chennai corporation (phase I). It was further extended to classes 3 and 4 and implemented in all schools run by Chennai corporation in 2003-04 (phase II). Phase I and phase II schools were combined together to form one group for analysis, as ABL was implemented only in phase I schools (classes 1 and 2 only) in 2002-03 and in 2003-04 in phase 2 schools (classes 1 to 4) along with phase I schools
2. *Coimbatore city schools:* Purposively selected, as its urbanization and literacy levels are comparable to Chennai city.
3. *Model school:* 4100 schools in which ABL was implemented in 2006-07. It was felt important to compare these schools with phase I and II schools.
4. *Schools in which ABL was implemented in 2007-08:* It is justified to have this group for comparison as it represents the remaining more than 37, 500 schools in the state.

**Table 2: School Groups by Duration of ABL Implementation**

Year in which ABL was implemented	Group of Schools	Notational Form
2002-04	Chennai Schools (Phase I and II)	NR $X_H$
2006-07 and 2007-08	Coimbatore City schools (Model Schools (Phase 3) and Other Schools (Phase IV))	NR $X_L$
2006-07	Model Schools (Phase III) in the rest of Tamil Nadu	NR $X_{11}$
2007-08	Other schools (Phase IV) in the rest of Tamil Nadu	NR $X_{12}$

NR X<sub>H</sub> - refers to non-randomized (NR) schools of Chennai city in which ABL was implemented in 2002-03 (Phase I) and 2003-04 (Phase II). NR X<sub>L</sub> refers to non-randomized scaled-up group of schools in Coimbatore City where ABL was implemented during 2006-07 (Phase III) and 2007-08 (Phase IV), NR X<sub>L1</sub> refers to group of schools in which ABL was implemented during 2006-07 (Phase III) and NR X<sub>L2</sub> refers to group of schools in which ABL was implemented during 2007-08 (Phase IV).

<b>Table 3: Evaluation Design</b>	
<b>Evaluation Design</b>	
	NR X <sub>H</sub> - NR X <sub>L</sub>
	NRX <sub>H</sub> - NR X <sub>L1</sub>
	NRX <sub>H</sub> - NRX <sub>L2</sub>
	NRXL1 - NRX <sub>L2</sub>

It is assumed that: (i) The implementation of ABL should be better in Chennai city schools than in Coimbatore city schools followed by other schools; (ii) Classroom processes and their effectiveness are better in Chennai city schools than in other school groups; (iii) Students studying in Chennai city schools will perform better than their counterparts in other groups of schools; (iv) Implementation of ABL will lead to improvements in non-academic aspects of a child's personality and positive change in the perception of teachers and parents towards children's schooling.

The documents available on the implementation of ABL indicate that the ABL was pilot-tested in phases I and II. This means that all the learning material that was being used in all schools were prepared and put into use in these schools. Most teachers working in these experimental schools received a considerable amount of training while preparing the learning material. They were sent to many experimental schools and training centres run in different parts of India and received training on the use of learning material in those schools and centres. All this happened under the constant monitoring of teacher educators deputed for this purpose. Hence, it was assumed that students studying in phase I and II schools would be in advantageous position than their counterparts in other schools.

Also, teachers working in Model schools (phase III) have received much better training and exposure than their counterparts working in phase 4 schools. Most model school teachers were brought to Chennai and were trained and exposed to schools in which ABL was evolved and experimented. All the phase IV school teachers have received training from their cluster resource centres or model schools which did not have the kind of facilities the Chennai experimental schools had. All these reasons led the evaluators to assume that there would be considerable differences in the way ABL was being implemented in different schools and its impact on students' learning.

## 2.2 Sampling Frame

In all, 264 schools are run by the Chennai Corporation in ten zones of Chennai. Out of which thirty schools were selected randomly. There were 25 schools run by the Coimbatore municipal corporation, all of which were taken in the sample. There are 30 districts in all in Tamil Nadu. To identify districts other than Chennai and Coimbatore located in different regions of the state, the report of Census 2001 was used. The Nilgiris, being the hill district and having highest proportion (3.31%) of scheduled tribes in the state was purposively chosen to capture the impact of the initiative on a tribal and hill region. Using female literacy as a significant indicator of socio-economic backwardness as followed under District Primary Education Programme (DPEP), 28 districts, other than Chennai and the Nilgiris, were ranked according to female literacy levels. Accordingly, ten districts having the Lowest Female

Literacy Levels (LFL) were grouped together (Table 4). The remaining 18 districts constituted another group of Better Female Literacy (BFL) districts (Table 5). Four LFL districts and eight BFL districts were picked randomly out of their respective groups. These included: (1) Dindigul (LFL); (2) Thiruvannamalai (LFL); (3) Perambalur (LFL); (4) Karur (LFL); (5) Coimbatore (BFL); (6) Madurai (BFL); (7) Pudukottai (BFL); (8) Ramanathapuram (BFL); (9) Thanjavur (BFL); (10) Thiruvallur (BFL); (11) Thiruchirapalli (BFL) and (12) Tirunelveli (BFL).

**Table 4: Districts with Low Female Literacy Levels in Tamil Nadu, 2001**

SL.No	District	Female Literacy (percent)
1	Ariyalur	49.1
2	Dharmapuri	52.03
3	Dindigul	53.16
4	Erode	57.30
5	Karur	56.31
6	Namakkal	55.61
7	Perambalur	55.26
8	Salem	57.04
9	Tiruvannamalai	54.26
10	Viluppuram	59.30

Source: Census of Tamil Nadu 2009

**Table 5: Districts having Relatively Better Female Literacy Levels in Tamil Nadu, 2001**

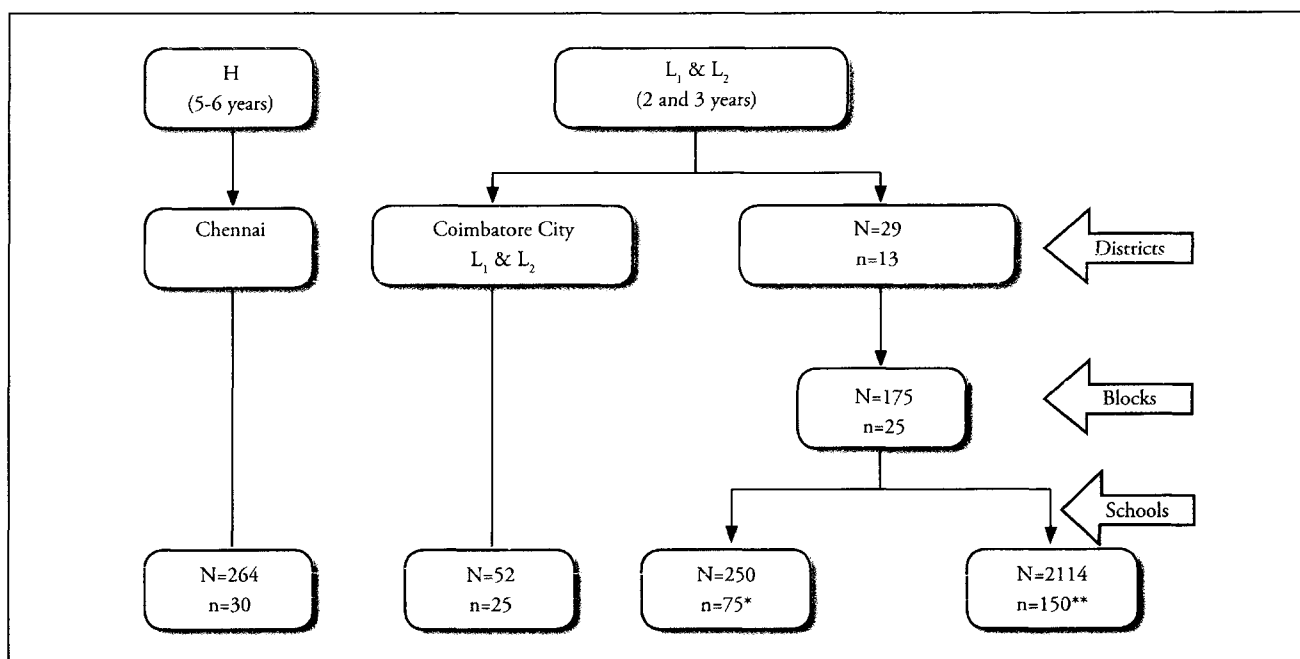
Sl. No.	District Name	Percent of Literate Females	Sl. No.	District Name	Percent of Literate Females
1	Coimbatore	69.80	10	Thanjavur	66.95
2	Cuddalore	60.86	11	Theni	61.41
3	Kancheepuram	70.21	12	Thiruvallur	68.23
4	Kanniyakumari	85.38	13	Thiruvarur	68.36
5	Madurai	69.93	14	Thoothukkudi	75.64
6	Nagapattinam	68.35	15	Tiruchirappalli	71.19
7	Pudukkottai	60.94	16	Tirunelveli	68.50
8	Ramanathapuram	63.55	17	Vellore	63.53
9	Sivagangai	62.12	18	Virudhunagar	64.09

Source: Census of Tamil Nadu 2001

Two blocks<sup>16</sup> were randomly selected out of each of these 12 districts, except Nilgiris in which only one block was chosen, thus identifying 25 blocks in all. Overall, the sample consisted of 280 schools (including 30 Chennai schools, 25 schools from Coimbatore City, 75 model schools, and 150 schools from other districts). Figure 1 provides a diagrammatic view of the sampling frame.

16 A block is the second lowest administrative unit for implementing various development programmes in many states of India. Many government departments including education department use this unit for planning and implementing their welfare services.

**Figure 1: Diagrammatic View of Sampling Design**



Notes: (\*) – 3 schools from each block; (\*\*) - 6 schools from each block

A list of schools provided by Tamil Nadu SSA based on data collected under District Information System for Education (DISE) for the year 2008-09 was used as sample frame. In each selected block, the schools were categorized into model schools and other schools through computer-generated lists, and the identified numbers of schools were picked randomly from these lists. During the selection process, some schools in rural blocks had very few students in classes 3 and 4, so, those were replaced with ones having at least 10 students in these classes. The final list of schools can be found in Appendix F.

### 2.3 Instrumentation and Procedures

The instruments used in the present study included: (i) Interview schedules; (ii) Questionnaires; (iii) Observation schedules; (iv) Proformas for school and document analysis (v) Schedules for focus group discussions and (vi) Achievement tests. All tools developed for the study were pilot-tested in four schools, selected purposively by the study team, in *Kancheepuram*, a district adjacent to Chennai city. Schools were located at *East Perungalathur*, *Otteri*, *Rathnamangalam*, *Moongilери*. Teachers, students, parents and village education community members were administered these tools. About 35 to 40 students studying each in classes 3 and 4 took up two alternative achievement test papers in each of the four subject areas – Tamil, English, Mathematics and Environmental Studies. Each question paper consisted of 40 multiple-choice questions. These test papers were based on the state syllabi meant for classes 2, 3 and 4.

One test paper containing 40 items was finalized for each subject, after carrying out the simple item analysis and calculating the discrimination indices. Other than the achievement tests, all tools were modified were based on the responses received from different stakeholders.

Except for the interview schedule for educational administrators, all data collection instruments were administered by field staff who were fluent in Tamil.



### 2.3.1 Field Staff Recruitment and Training

Field staff consisted of 15 district research officers and 96 field investigators who were recruited through an open advertisement in the state newspapers followed by short listing and face-to-face interviews of the applicants. They were oriented by the members of the study team with the help of TNSSA officials for a week through lectures, presentations and discussion followed by visits to ABL schools to provide hands-on experience to administer and collect the data using different tools. Field staff were given the Training Manual and *Field Notes Handbook* prepared especially for the present study, as well as a *Teachers' Handbook on ABL* prepared by TNSSA for further clarification and reference.

### 2.3.2 Description of Data Collection Instruments

The tools described below were developed in collaboration with members of the programme community (SSA and DTER, Tamil Nadu), and were also reviewed by international experts in the area of evaluation. The concerned functionaries (administrators, BRTes, teachers etc.) of the state were issued circulars by the State Project Director (SPD), TNSSA to familiarize them with the ABL evaluation study. The details of tools, sampling procedures and sample size are provided below.

#### 2.3.2.1 Interview Schedules

Interviews were conducted privately on the school premises with ABL teachers (teaching classes 1-4), non-ABL teachers (teaching classes 5-6), students, BRTes, parents of ABL and non-ABL students, VEC members and district/state level educational administrators. All interviews except those of the administrators were undertaken in Tamil, and it took about 30-60 minutes to conduct each interview. The interview schedules were mostly semi-structured, containing many open-ended questions and hence aiming to collect qualitative data regarding various aspects of ABL. The field staff recorded the information during interviews on the prescribed schedules. Sampling procedures and sample size for each interviewee group are presented below in Table 6. The number of interviews conducted was relatively larger than expected. The number of ABL stakeholders was large in number and were also spread across a large and diversified area - more than 30 lakh students and their parents, 1.2 lakh teachers and about 6000 BRTes working in nearly 40000 schools. It was felt that a larger sample of each of this group would help in understanding the implementation and effectiveness of ABL better. However, since this limited the depth of the analysis of this information, this has since been identified as a limitation of the study (2.6: Limitations of the Study).

Further details about the types of data collected from each interviewee group are subsequently provided (Table 6).

**Table 6: Interviews**

Tools	Sampling procedures	Sample size
Interview Schedules		
Teachers (ABL)	Two teachers (one female and one male) from each sample school. If there was no male teacher available, two female teachers were selected randomly.	552
Grade V and VI teachers (non-ABL teachers)	One or two teachers from 30 sample schools in the sample middle schools in Chennai were selected randomly.	44
Students	Two students each from classes 2 to 5 (one boy and one girl) of all sample schools.	2239
BRTes	Two for each sample school (one who was attached to the sample school and one deputed by district officials from adjacent block).	529
Parents	One parent each from classes 2-5.	1317
Educational Administrators	Selected by ABL Team members.	9

### **A. Teachers (ABL)**

The interview schedule for teachers (Appendix G, Tool 1) was designed to assess teachers' perceptions about various components of the ABL such as training, learning materials, and evaluation strategies. Teachers were also asked for their opinion on the impact of ABL on schools and classrooms, teachers, children, community, enrolment, transition rates, and achievement. Challenges faced during implementation were also probed.

### **B. Grade V and VI teachers (non-ABL teachers)**

In class 5, students are required to use textbooks instead of cards. Self-learning and group learning is replaced by the whole class learning system. Students move from self-assessment to periodic assessment. In order to understand how ABL students cope with these changes in class 5, one to two teachers teaching classes 5/6 from sample middle schools in Chennai were interviewed. They were asked to give their views about the objectives, methodology of teaching, content and impact of ABL (Appendix G, Tool 2).

### **C. Students**

Students were asked to give their opinions on various aspects of learning in ABL classrooms such as learning materials, classroom processes, self-evaluation, completing learning cards and milestones, and assistance available to them (Appendix G, Tool 3). For 11 questions, they were asked to respond on a 2-point scale (yes/no or agree/disagree). Some of the questions were designed to understand the utility of ABL materials for Children with Special Needs (CWSN). Class 5 students do not learn through an ABL approach, but they were asked about their past experiences with ABL in order to compare the learning through ABL and non-ABL methods. Students' views about the quality of cards and the appropriateness of size, colour, text and pictures were also recorded. They were shown different cards having variations on the above aspects and were asked to express their preferences.

### **D. Block Resource Teacher Educators**

BRTes were asked about the training, its follow-up and other monitoring activities (Appendix G, Tool 4). They were also asked to identify the areas where further training for them and the teachers was required. Their opinions were sought on the impact of ABL on schools and classrooms, teachers, children and the community.

### **E. Parents**

Parents were asked about their awareness and understanding of ABL, their opinions on any perceived impact of ABL on schools, classrooms, teachers, children, community, enrolment, transition rates and achievement (Appendix G, Tool 5).

### **F. Educational Administrators**

This group, identified by the ABL study team and consisting of nine individuals, was expected to offer important views on each evaluation question of the study. They were also asked for their opinion on the strengths of the ABL initiative, the usefulness of various ABL learning materials, the classroom practices, the challenges they face while implementing the initiative and their future plans for taking ABL forward (Appendix G, Tool 6).

#### **2.3.2.2 Questionnaire for Teachers and Teacher Educators**

Questionnaires were used to obtain information from the actual implementers of ABL at the ground level i.e. teachers and BRTes (Appendix G, Tools 7 and 8). These were designed to assess their knowledge on different aspects

of ABL and the details of training received and self-competency to implement the ABL. Their perception on ABL methodology and processes were also taken through different scales developed. All the teachers working with ABL classes in sample schools and two BRTes for each sample school were administered this tool. Sampling procedures and sample sizes for the questionnaires are outlined below in Table 7.

**Table 7: Questionnaires**

Questionnaires		
Tools	Sampling procedures	Sample size
ABL Teachers	All teachers working with ABL classes in sample schools	882
BRTes	Two (one who was attached to the sample school and one deputed by district officials from adjacent block) for each sample school.	526
Classroom Observation Schedule	One classroom each of four subjects (English, Tamil, Environmental Studies and Mathematics) in sample schools	1112
School Proforma	All sample schools. Headmasters are required to fill the details.	280

### 2.3.2.3 Observation of ABL Classrooms

One classroom for each of four subjects (English, Tamil, Environmental Studies and Mathematics) in sample schools was observed. Field staff was required to observe an ABL classroom for 60 to 90 minutes and simultaneously record the observations on a Classroom Observation Schedule (Appendix G, Tool 9). They were asked to observe some of the important physical aspects of ABL classrooms and use rating scales to capture various activities undertaken by students. The observation schedule also consisted of a few items to observe the expected behaviour of ABL teachers and students in a typical ABL classroom. A total of 1112 classroom observations were undertaken.

### 2.3.2.4 Proforma for Schools

A proforma (Appendix G, Tool 10) seeking the details of school location, management, school infrastructure, organization of ABL classes, enrolment and attendance, and other data related to students was filled in by the school headmasters of all sample schools.

### 2.3.2.5 Proforma for Document Analysis

ABL requires development of learning materials both for students and teachers, procurement of materials from other organizations, and issuing instructions to teachers and educational administrators through circulars. A five-day workshop was organized in Chennai, during which four education experts working in Tamil Nadu (Indian Institute of Technology, Chennai; Alagappa University and SchoolScape) were invited to review materials used in the ABL initiative. These members were purposely selected by the ABL evaluation team. Experts were given a checklist to evaluate the documents (Appendix H).

### 2.3.2.6 Interview schedules for Focus Group Discussions

Focus group discussions (Appendix G, Tools 11 and 12) were conducted among the members of Village Education Committees (VECs) from the respective sample schools and with a few members from the Panchayati Raj Institutions (PRIs). These were meant to collect information on their awareness, perceived impact of ABL on children, teachers and other stakeholders. They were also requested to offer suggestions for enhancing effectiveness of the ABL

programme. The VEC members were asked for their opinions on the role, functioning and effectiveness of school VECs as well. The VEC and community members were invited by the headmaster to participate in the focus group discussions. The criteria suggested to headmasters for identifying community members was that ‘they should reside in the vicinity of the sample schools and represent a cross section of people such as women, parents, VEC members, and members of PRIs.’ Sampling procedures and sample sizes for the focus groups are outlined below in Table 8. It should be noted that if the FGDs were reduced in number, there would have been greater scope to collect in-depth details of perceptions of VEC and community members. This is one of the limitations of the study.

**Table 8: Focus Group Discussions**

Focus Group Discussions		
Tools	Sampling procedures	Sample size
Schedule for VEC Members	Members of all sample schools	280
Schedule for Community Members	(i) Reside in the vicinity of sample school (ii) not more than 10 people were considered; (iii) they were selected and invited by headmaster of sample schools.	278

### 2.3.2.7 Achievement Tests

In order to know the impact of ABL classroom processes on students’ learning levels, students of classes 3 and 4 were administered achievement tests in different subjects – Tamil, English, Environmental Studies and Mathematics (Appendix I, Tools 13 to 24). As mentioned, the achievement tests for the present study were based on the pilot tests conducted in four schools. The items in these tests were Multiple Choice Questions (MCQs) having 3-4 alternatives. To assess the reading and listening competencies, two additional oral tests for language (Tamil and English) were conducted.

For the students of class 3, test papers comprised of questions pertaining to competencies of classes 2 and 3, and for class 4 students the questions based on the competencies of classes 2, 3, and 4<sup>17</sup> were included. Since the data collection was carried out in the middle of academic year<sup>18</sup> i.e. December 2009 to March 2010, only a part of syllabi (taught between June, 2009 to December 2009) of class 3 was considered for developing test items for class 3 students; a similar approach was adopted for developing test items for class 4 as well. All the test papers were developed involving ABL teachers and BRTEs.

Hence, six test papers were administered for each of classes 3 and 4: (i) Tamil (Written); (ii) Tamil (Oral); (iii) English (Written); (iv) English (Oral); (v) Mathematics and (vi) Environmental Studies. Except for oral examinations, all the test papers contained 40 multiple choice questions. Students were asked to round the correct answers or write the code number of the appropriate answer in the required box. Students took 15 to 90 minutes to complete the written tests; however, they managed to complete the oral tests in about 5-10 minutes.

All class 3 and 4 students were included in the sample if the class contained less than 40 students. If the total students in a class exceeded 40, forty students were selected randomly. For each subject, 5500-6500 students were sampled.

Achievement test results from students in schools having shorter duration of exposure to ABL were compared to those of schools having longer duration of exposure to ABL to explore whether length of exposure to ABL is associated with higher achievement.

17 See Appendix C tables 1, 2 and 3.

18 In Tamil Nadu, the academic year starts in June and ends in April every year.

As pointed out earlier there was no baseline data on student's achievement available, so studies conducted in Tamil Nadu by NCERT were also considered<sup>19</sup> in order to answer the third evaluation question (has ABL improved learning levels of children in different subject areas? If so, to what extent?).

#### A. Post-test Reliability Measures

Cronbach's Alpha values calculated for internal consistency of all the twelve tests (Table 9) established that these tests were highly reliable in measuring the learning abilities of ABL

**Table 9: Post Test Reliability Analysis (Cronbach Alpha value)**

Subject	Class 3			Class 4		
	No. of items	No. of Students	Cronbach Alpha value	No. of items	No. Of Students	Cronbach Alpha value
English Oral	14	5,546	0.91	11	6,253	0.88
English Written	40	5,570	0.93	40	6,261	0.92
Environmental Studies	40	5,519	0.93	40	6,179	0.93
Mathematics	40	5,552	0.94	40	6,325	0.94
Tamil Oral	14	5,588	0.85	18	6,292	0.93
Tamil Written	40	5,634	0.93	40	6,275	0.93

## 2.4 Data Analysis

Both quantitative and qualitative analysis was attempted to find answers to the evaluation questions.

### 2.4.1 Quantitative Analysis

All the quantitative details collected from sample schools (school proforma), ABL classrooms of sample schools (classroom observation schedule), responses of teachers and BRTEs (questionnaires for teachers and teacher educators) and interview schedules were used. Scores of students in achievement tests were analyzed separately. A few descriptive and inferential statistical techniques such as mean, standard deviation, t-ratios, F-tests, correlation and regression were used to analyze the data.

#### 2.4.1.1 Composite Scores

Questionnaires, interview and classroom observation schedules contain details relating to implementation of ABL, effectiveness of support systems in its implementation, and perceptions of teachers and students towards ABL. Most of these details are available in the form of 2-5 point scales. Rather than analysing the response for each individual item separately, composite scores were developed. Composite scores help in data reduction and hence in reducing the information load, and also address the problem of measurement error inherent in single items. Seven composite scores were developed from these details. They are used to answer evaluation questions associated with implementation and effectiveness of support systems. The descriptive statistics of these scores are given in Table 10.

<sup>19</sup> National Achievement Survey NCERT (2004 and 2008).

**Table 10: Composite Scores**

Name of the Composite Score	Tools	Items	Types of items	Total no. of items	Scale	Cronbach Alpha	Mean (SD)
Perception of Teachers on ABL competency	Questionnaire for Teachers (Appendix G, Tool 7)	18 - 33	Self-perceived ability to: organize the classroom; introduce ABL related logos to students during preparatory activities; provide the necessary help to students; monitor student activities; prepare and maintain ABL achievement charts;	16	2-point scale: (Yes:1, No: 0)	0.80	15.32 (1.63)
Perception of BRTes on ABL competency	Questionnaire for Teacher Educators (Appendix G, Tool 8)	18 - 28	Self-perceived ability to: undertake need assessments of teachers in all subjects; plan, organize, develop materials for, use ICT/audio visual aids for, monitor, and follow up on in-service teacher education;	11	2-point scale (Yes:1, No: 0)	0.80	10.58 (1.01)
Perception of Teachers on ABL methodology	Questionnaire for Teachers (Appendix G, Tool 7)	34-53	Transacting curriculum through cards; no scope for rote learning in ABL approach; monitor the progress of each child; fixing the level of the student in the initial stage is methodical; peer learning is crucial in ABL approach; students studying under the ABL methodology have become more confident; students using ABL methodology speak more freely; accurate self evaluation by a student is not always possible in the ABL approach	20	4- point scale (Very Much Agree (1), Agree (2), Disagree (3), Very Much Disagree (4))	0.89	61.85 (9.21)
Perception of BRTes on ABL methodology	Questionnaire for Teacher Educators (Appendix G, Tool 8)	29-52	Transacting curriculum through cards; monitor the progress of each child; students studying under the ABL methodology have become more confident; easy to organize remedial teaching under the ABL approach; students using ABL methodology speak more freely	24	4- point scale (Very Much Agree (1), Agree (2), Disagree (3), Very Much Disagree (4))	0.89	84.81 (8.50)
ABL Implementation	Classroom Observation Schedule (Appendix G, Tool 9)	3, 4, 7, 8, 9, 11, 12, 15, 16, 17,	Students sitting in groups as required in ABL; adequate space for all students; binding wires tied based on the height of students; recent works of students hung for display; lower level blackboards (LLB) available to each student; achievement chart marked regularly; weather chart filled;	10	2-point scale (Yes:1, No: 0)	0.74	8.39 (1.64)
Classroom Practice	Classroom Observation Schedule (Appendix G, Tool 9)	5, 6, 10, 13, 14, 19, 25 to 28	Logos pasted on the ABL trays; ladders and trays kept at a place accessible to students; students writing on the LLB as part of their learning activity; self-attendance cards kept in the class marked by students present; students describe health chart (arogya chakra) activities;	10	4-point scale (all/very often: 4, many/ sometimes: 3, some/rarely:2, none/not at all:1)	0.66	33.55 (2.34)
Teacher - Student Behaviour	Classroom Observation Schedule (Appendix G, Tool 9)	33 - 42	To what extent the following were observed: encourages sharing of ideas with students participation; presentation and use of TLM by the teacher; nature of questions for revealing the main theme(s); interest generated for the lesson / class discussions; provides opportunity and responds to students' queries and questions; instances and quality of students' question;	10	5-point scale (Very Good: 5, Good: 4, Satisfactory: 3; Bad: 2, Very bad: 1).	0.93	39.67 (6.37)

### 2.4.1.2 Regression Analysis

A simple linear regression analysis was computed to answer the evaluation question "to what extent are ABL support systems effective in improving classroom processes?" Three composite scores of classroom processes i.e. ABL implementation score, classroom practices score and teacher behaviour score are considered as dependent variables. The mean scores, standard deviations of, and other descriptive statistics of these scores are available in Table 10 above.

### 2.4.2 Qualitative Analysis

Answers to open-ended questions in various tools were coded and organized according to themes. They were cross-tabulated and provided in the form of tables and charts. A few quotations pertaining to specific issues were identified by picking up the tools randomly, and were translated from Tamil to English for illustrative purposes.

## 2.5 Quality of the Data

### A. Selection of Field Staff

While recruiting field investigators, the ABL team made certain that the field investigators and District coordinators are well aware of the programme of Sarva Shiksha Abhiyan and Activity Based Learning. It was also ensured that they had some experience of administration of tools and data collection.

### B. Construction of Tools

Achievement tests were developed from the curriculum in use for classes III and IV under ABL in Tamil Nadu. Various items were selected from the course content that was being taught to children in the subject areas of Mathematics, Tamil, English and EVS. Two sets of tools were constructed in each subject area for the tryout.

### C. Pilot -Testing of Tools

Tools developed for the study were tried out in four schools located at East Perungalathur, Otteri, Rathnamangalam and Moongileri. Accordingly, tools were modified for any ambiguity or inaccuracy. Special efforts were made to have language clarity in the tools. For achievement tests, two sets assessing similar competencies were administered on the same students of class 3 and 4. Based on the facility values and the discrimination index of items, test items were finalized from a larger pool of questions. Post test reliability analysis of achievement tests revealed that all the achievement tests used in the study have high Cronbach's alpha values. For class 3 achievement tests, this value ranged between 0.85 to 0.94, while for class 4 achievement tests, this value ranged between 0.88 to 0.94, for tools other than achievement tests i.e. questionnaires, interview schedules and classroom observation schedule etc were all reviewed by experts before finalization.

### D. Translation of Tools

Interviews and focus group discussions were recorded by field investigators. Field investigators were teachers who mostly either possessed a degree or diploma in teaching. Most teachers were found to have either a B.Ed or D.Ed. Further, both district coordinators and field investigators were given in-depth training (by the ABL team) to ensure that they become equipped to collect quality data. The tools were translated by qualified translators and reviewed for correctness. While translating the tool from Tamil to English, precautions were taken to ensure that meaning was not lost during the process of translation.

### E. Guidelines for Data Collection and Training of Field Staff in Administration of Tools

Guidelines were provided to each field investigator to be objective and systematic in all aspects of data collection. To ensure that objective and reliable data were collected, the field investigators were extensively trained in the methodology of data collection. Various precautions and measures for ensuring data quality were spelt out by the team members, and hands-on experiences were provided to all the field staff in gathering of valid and reliable data.

### F. Maintaining Confidentiality

For maintaining confidentiality, individual identities were not revealed. Instead of names, unique codes were assigned to each respondent and participants were requested to give only free and frank opinions on the questions they were being asked. It was also communicated to the respondents through guidelines printed in the questionnaires for

teachers and teacher educators. Although a master list of codes was prepared, it was used only for cleaning, managing and analyzing data.

### G. Monitoring of Data Collection

Data collection was rigorously monitored by supervisors and BRTEs at state level. Constant monitoring of the data collection activities was also carried out by the National level ABL team members. Faculty members from the NCERT periodically visited the field to monitor the data collection in all sample schools, including interior and rural pockets.

### H. Data Cleaning

After entry of data, almost one month was dedicated to the task of data cleaning. Data cleaning involved filtering of data for correcting wrongly entered data, entering missing data, removing overlaps in data entry and cross checking data for school, block and district as per the codes assigned.

## 2.6 Limitations of the Study

Several factors limited our ability to answer the evaluation questions. These are discussed below and organized according to evaluation questions.

1. The unavailability of a clear description of the ABL implementation plan was a major limiting factor to answer the first evaluation question.
2. Clear operational definitions of classroom practices and, support systems to measure these constructs should have been developed. This led to difficulties in answering the second evaluation question.
3. Non availability of appropriate baseline data and data from suitable comparable non-ABL regions made it very difficult to answer the question of whether ABL has improved student achievement i.e. the third evaluation question.
4. The scope for improving achievement tests which are standardized with excellent psychometric properties still existed.
5. Some of the problems with qualitative instruments, data collection methods and analysis are following:
  - In order to elicit the type of information sought, there was scope to improve the items of gathering qualitative data.
  - A large number of interviews/ FGDs to be conducted by the interviewers restricted them from probing deeply and eliciting better quality data.
  - The translation of tools was only done from English to Tamil, however, the back translation of the Tamil version of instruments to English could not be carried out. This could have improved the data quality.
  - As interviews were not audio-recorded, it was not possible to verify whether members of the field team took complete and accurate notes during interviews and focus groups.
  - Some of the field notes were not translated into English. This would have improved the quality of data.
  - The categories that resulted from the coding of qualitative data were sometimes overlapping and sometimes contained multiple ideas.
  - Inter-rater reliabilities were not calculated for observations or interview/focus group coding.



Section 3

# Findings

## SECTION 3: FINDINGS

The findings will be organized according to evaluation questions.

### 3.1 Is ABL being implemented as intended? If not, why not?

In order to answer this question, the following indicators were used: (i) ABL Training; (ii) Knowledge and Awareness of Teachers and BRTes; (iii) Awareness of Community Members; (iv) Teacher Competency and (v) Classroom Structure and Processes. Results for this question will be organized according to indicators and themes.

#### 3.1.1 ABL Training

Learning to teach in a new methodology is a major change for teachers, and a challenge to implement. Such a change is possible if the nature of training is in accordance with the change envisaged. Implementation of ABL requires a major shift in pedagogic and evaluation practices in primary education, hence it is quite demanding for teachers working in ABL classrooms.

In order to implement ABL, teachers and BRTes need to be provided with appropriate training.

Almost all teachers (n=882) and BRTes (n=526) surveyed (using a questionnaire) replied that they had received training on the following topics:

1. Use of ABL cards and organization of ABL classrooms;
2. Development and use of self-learning materials and
3. Use of audio/video CDs, craft work

However, with regard to 2, Coimbatore and Other Schools' BRTes responses decreased by almost 10%. Teachers' and BRTes' responses in percentages are presented in Table 11.

**Table 11: Percentage of Teachers and BRTes reporting that they received training on various aspects of ABL**

Details of Training	Educational Functionaries	Chennai Schools (Phases I & II)	Coimbatore City Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Use of ABL cards and organization of ABL classrooms	Teachers	100.0	100.0	100.0	99.2	99.6
	BRTes	99.2	96.2	97.7	96.6	97.2
2. Development and use of self learning materials	Teachers	100.0	97.8	98.7	98.1	98.4
	BRTes	100.0	90.0	92.1	90.5	92.1
3. Use of audio and video CDs, craftwork, puppet show, villu pattu and handwork	Teachers	100.0	100.0	100.0	99.0	99.4
	BRTes	99.2	93.0	94.8	94.3	94.9
Total No. of respondents	Teachers	122	130	217	413	882
	BRTes	49	46	158	273	526

BRTes that were interviewed reported facing difficulties while imparting ABL training. These were lack of cooperation from teachers; difficulties in convincing teachers about the new method; parents' dissatisfaction; lack of space; insufficient learning materials and poor attendance for training. Only about one-tenth (10.9%) of their responses indicated that they did not face any problems. Challenges were reported more frequently by BRTes working in the later phase schools where ABL was still relatively new (Appendix D, Table 2).

### Summary

Almost all teachers and BRTes reported that they had been trained on important aspects of ABL. However, BRTes also indicated that there was difficulty with poor attendance of teachers during ABL training. Other challenges that BRTes faced included lack of cooperation from teachers, teachers' resistance in accepting the new methodology introduced in ABL classrooms, and teachers' perception of parental dissatisfaction about ABL.

### 3.1.2 Teachers' and BRTes' Knowledge of ABL

Teachers and BRTes were assessed on their knowledge and awareness of various practical aspects of the ABL methodology using a questionnaire. There were 13 yes/no questions and 5 multiple-choice questions.<sup>20</sup> Answers were analyzed to understand the extent of knowledge of various components of ABL among teachers and BRTes. (Appendix D, Tables 3 and 4).

Item-wise analysis revealed that almost all the teachers and BRTes correctly answered 13 yes/no type questions related to various aspects of ABL methodology (scores for each item ranged from 75.3% to 99.6%). This indicated that the overall awareness level of teachers and BRTes about ABL methodology was good. However, there were five questions related to implementation of ABL methodology in which a substantial number of both teachers and BRTes demonstrated lack of knowledge and awareness. On these five questions the percentage of teachers who could not correctly answer items ranged from 41.1% to 55.1%. For BRTes, this range was from 31.6% to 43.3%. Results for these questions revealed that: 1) Nearly one-third of BRTes (31.6%) and about 40% of teachers (41.1%) thought that group 4 was partially teacher supported, which is not correct. 2) 37.1% of BRTes and 55.1% of teachers opined that self-learning material was always two dimensional, which again was incorrect. 3) About two-fifths of BRTes (39.9%) and just under half of teachers (45.1%) were of the view that only ABL cards of Tamil subject indicated the usage of bouquet of books (supplementary materials), which was inappropriate as per the provisions in ABL. 4) One-thirds of BRTes (32.9%) were not aware of the purpose of teacher cards in comparison to 45.6% of teachers. 5) More than forty per cent of BRTes (43.3%) and teachers (42.1%) were not able to identify the correct sequence of activities suggested in each milestone in ABL ladders (introductory activity – practice – reinforcement – enrichment-remediation-evaluation).

### Summary

Teachers and BRTes possess good knowledge and awareness of the ABL methodology. Most of them were able to respond correctly to most questions related to ABL. However, teachers' and BRTes' knowledge needs improvement in the following areas: 1) Teachers' role with different groups; 2) Self-learning material; 3) ABL cards and the use of supplementary material; 4) Purpose of teacher cards and 5) the sequence of activities.

### 3.1.3 Awareness of VEC Members about ABL

Community support is an essential component of the ABL initiative. Focus group discussions held among VEC

<sup>20</sup> See items numbered 1 to 17 in Appendix G, Tools 7 and 8.

members of all sample schools indicated that most of the VEC members were aware of at least some features of ABL, such as children sitting on mats and learning through cards. These aspects were also discussed in VEC meetings. In one VEC focus group discussion, the need for giving extra training to 'children with special needs' was highlighted. On an average, in 11.6% of responses from the FGDs (ranging from 2.4% in Chennai to 43.2% in Coimbatore), it was stated that no discussions on ABL took place. Teachers held discussions about different aspects of ABL methodology in 38.9% of VECs meetings (Appendix D, Table 5).

VEC members were also asked during the FGD whether or not they made villagers aware about ABL methodology. In 29.2% of responses during the FGDs, VEC members indicated that they did make them aware. It was also mentioned that awareness was created through self-help groups and children as well (37.2% of responses). However, there was no response from the VEC members from Coimbatore City about this. In 20.9% of responses across phases there was an indication that no awareness was created (Appendix D table 6).

### Summary

VEC members were aware of some of the ABL features to some extent. Moreover, a wide variation for spreading awareness about ABL among the villagers by the VEC members existed across school of different phases. VEC members from Coimbatore city gave no response to spreading awareness through SHG and children. There is, therefore, a strong need to have advocacy programmes of ABL for VEC members and parents.

### 3.1.4 Self-perceived Competency of Teachers and BRTEs

Teachers and BRTEs were asked about their self-perceived competency in implementing various aspects of ABL. Their responses were used to develop a composite score.<sup>21</sup>

The mean scores of both teachers and BRTEs were very high on their self-perceived competencies in implementing ABL (Table 12). This indicates that teachers felt competent to undertake the following activities: organize the classroom; introduce ABL related logos to students during preparatory activities; provide the necessary help to students; monitor student activities; prepare and maintain ABL achievement charts; interact with parents about student progress; monitor student health and hygiene and display student work. BRTEs felt competent to undertake the following activities: undertake need assessments of teachers in all subjects; plan, organize, develop materials, use ICT/audio visual aids, monitoring, and follow up on in-service teacher education; communicate with teachers to facilitate their learning; undertake evaluation of teacher development; ensure co-operation among the teachers; and prepare a report on teacher education programmes undertaken. Coimbatore teachers and BRTEs scored relatively lower on the measure of self-perceived competency than their counterparts. The low values of standard deviation of the self-perceived competency scores in all schools except Coimbatore indicate that teachers and BRTEs had little variation in their scores with regard to self-perceived competencies. Higher standard deviations in scores of Coimbatore teachers and BRTEs indicate a greater variation in self-perceived competency.

<sup>21</sup> See Table 10 in the Methods section for details.

**Table 12: Self Perceived Competency of Teachers and BRTes across Phases**

Group of Schools	Teachers (maximum: 16)		BRTes (maximum: 11)	
	No. of Teachers	Mean (SD)	No. of BRTes	Mean (SD)
Chennai Schools (Phases I & II)	122	15.7 (1.4)	49	11 (0.00)
Coimbatore City Schools (Phases III & IV)	130	14.6 (2.2)	46	10 (1.5)
Model Schools in Other Districts (Phase III)	217	15.4 (1.4)	158	10.6(0.9)
Other Schools in Other Districts (Phase IV)	412	15.4(1.5)	273	10.6 (0.9)
Total	881	15.3 (1.6)	526	10.6 (1.0)

Note: Cronbach alpha value for self perception score for teachers and BRTes were 0.80 and 0.67 respectively; SD – Standard Deviation

The F-values (Table 13) indicate that there was a statistically significant difference between mean score of self perceived competency of teachers and BRTes across different groups of schools.

**Table 13: F-Values of ABL Self Perceived Competency Scores**

Composite Score	Differences	Sum of Squares	Degrees of freedom	Mean Square	F
Perception of teachers on ABL competency	Between Groups	86.078	3	28.69	11.20*
	Within Groups	2246.73	877	2.56	
	Total	2332.80	880		
Perception of BRTes on ABL competency	Between Groups	25.47	3	8.49	8.78*
	Within Groups	504.98	522	0.97	
	Total	530.46	525		

Note: (\*) –  $p < .000$ .

### Summary

Teachers and BRTes perceive a high level of self-competence in ABL method. The perceived self-competence level of Coimbatore City teachers and BRTes is slightly lower, indicating that more training and support may be necessary.

### 3.1.5 Classroom Structure and Organization

Traditionally teaching and learning processes have been dominated and led by teachers in a whole class situation. In ABL classrooms, teaching learning is expected to be learner-centered. Students work with a variety of learning materials. They interact with teachers and their peers as part of their classroom practices. Implementation of ABL requires the organization of classrooms to facilitate learning in small groups.

In this regard, necessary guidelines provided to schools through the official circulars and teacher manuals envisaged that all the ABL classrooms should have: (i) Sufficient availability of required learning materials; (ii) Sufficient space for students to move around; (iii) Sufficient mats for students and teachers to sit; (iv) Low level blackboards (LLBs) all around the lower walls of the classrooms and availability of space allotted in LLBs for students' use; (v) Space for display of children's work with their names; (vi) Learning cards related to different subject areas in separate trays with logos pasted on the front side of the tray; (vi) All the trays placed in one corner of the classroom and accessible to students and (vii) One tray exclusively for each of the subject areas.

These important physical aspects are to be strictly adhered to and to be monitored by BRTes and Assistant Education Officers<sup>22</sup>. They are also expected to ensure that (i) Students sit in their groups, (ii) Teachers work mainly with groups

22 Officers dealing with education at the block level in Tamil Nadu.

1, 2 and partly with 3 and (iii) Students follow ladders and pick up appropriate cards and sit in the groups according to their levels of learning. Classroom observation schedule was used to observe the important physical aspects of ABL classroom organization and teachers' opinion was also taken on some of these aspects. Important findings from classroom observations and teacher interviews on classroom structure and organization are provided in Table 14 below.

**Table 14: Findings of ABL Classroom Structure and Organization**

<b>Intended classroom structure and organization for ABL</b>	<b>Findings</b>
Sufficient availability of required learning materials	43.5% of teachers' responses indicate the need for additional support materials (Appendix D, Table 7). 13% of teachers' responses indicated that they used their own money to procure additional support materials (Appendix D, Table 8).
Sufficient space for students to sit	Observations indicate that space is adequate in 86.2% of ABL classrooms. Schools in which ABL was implemented in the initial phases were better than other schools. (Appendix D Table 9)
Space for display of children's works	Students' recent creative works were observed to be displayed in 91% of classrooms (Appendix D, Table 9)
Learning cards related to different subjects in separate trays and must be pasted with logos on the front side of the tray	Logos were found pasted on all trays in 79.4% of classrooms. However, this varied from 50% in Coimbatore city to 94.2% in Chennai schools. According to classroom observation data the students in ABL classrooms faced difficulties in identifying the cards in classrooms where logos were not pasted on trays (Appendix D, Table 9)
All the trays in one corner of the classroom and accessible to students	In 88.5% of classrooms, ladders and trays were observed to be accessible to students (Appendix D, Table 9)
Students sit in their groups	Students were observed to be sitting in their respective groups in 98.1% of ABL classrooms (Appendix D, Table 9)

As the data suggests (Appendix D, Table 9) there is ample scope for improvement in phase III and IV schools specifically with regard to the arrangement of trays with logos pasted on them, availability of sitting space for children, the accessibility of trays and ladders to students, and display of materials.

### **Summary**

As discussed above, in a large number of schools space was adequate, logos were pasted on trays, ladders and trays were put up and kept at a height accessible to students, students sat in their respective groups and students' recent creative work was displayed in classrooms. A large number of teachers were satisfied with the available learning materials. But also an approximately equal number of teachers expressed the need for additional material. At the same time, it's important to note that a significant number of teachers reported spending their own money to procure the additional material. Variation in the classroom organization scores suggests that there still exists scope to improve this in phase III and IV schools.

### ***Reasons why ABL could not be implemented as intended?***

Implementation of ABL has been found to be satisfactory in many areas, such as accessibility of ladders and trays to students, display of students' work and students working in groups.

The lack of awareness and knowledge of teachers, BRTEs and the community in ABL implementation has been observed. This could be due to gaps in their training of ABL. Regarding teachers, the BRTEs have mentioned about their poor attendance during ABL training, which may be due to the following:

1. Non cooperation and resistance of teachers in accepting the new methodology of ABL (Appendix D, Table 2);
2. Perceptions of teachers regarding dissatisfaction of parents and their preference for textbooks instead of cards (Appendix D, Table 2);
3. Enhanced workload of teachers (Appendix D. Table 47; Appendix D. Table 48 and Appendix D. Table 49) and
4. Inability of some teachers to sit on floor along with students due to their health problems (qualitative responses).

Implementation gaps have also been observed in infrastructural aspects such as lack of space and provision of cards. Inadequacy of additional support material was also a hindrance to implementation of ABL. Many teachers felt the need for additional support materials for implementation of ABL in addition to the material already supplied under ABL. Some teachers also expressed that they spend their own money in procuring additional material.

### **3.2 To what extent are ABL support systems (curriculum, teacher training and support by BRTes) effective in improving classroom practices?**

Improving the quality of learning through classroom practices as envisaged in ABL requires systemic support. This includes training, teaching-learning material and monitoring by educational administrators at state, district, block and cluster levels. The extent to which ABL support systems are effective in improving classroom practices is examined in this section, taking into consideration the following five aspects: (i) Training in ABL; (ii) Quality of Learning Material; (iii) Classroom Processes and (iv) ABL Support Systems and Classroom Processes in ABL.

#### **3.2.1 Training in ABL**

The effectiveness of training of teachers and BRTes has been analysed considering the following five dimensions of training: (A) Duration; (B) Methodology Used; (C) Training Content; (D) Follow-up after Training and (E) Trainers' Competence.

##### **A. Duration of Training**

In response to the question on training duration, the following categories of responses emerged during the interview of teachers and BRTes. A wide variation existed across different types of schools. Responses (Appendix D, Tables 10 and 11) regarding duration included:

- That duration of training was appropriate - overall, 80.8% of teachers' and 61.8% of BRTes' responses were received for this category. In comparison to responses received from phase III and IV teachers, this view was more dominant among the responses given by Coimbatore teachers.
- That duration should be enhanced, which was given as a response by 6% of Coimbatore teachers and 17.3% of Coimbatore BRTes.
- That duration should be reduced, which was given as a response by only 2.1% of teachers.
- The need for training in remedial measures for slow learners, as reported by 2.3% of BRTes.

##### **B. Training Methodology**

As per the ABL programme, teachers are provided initial training in a cascade model.<sup>23</sup> In this model, training is given to master trainers at the state level, who in turn train district level trainers. District level trainers in turn train

23 See Clare O'Donahue (2010) for details of cascade model and a study done by British Council on the training provided to ABL teachers to improve their proficiency in English.

trainers at block and cluster levels. Trainers include experienced teachers, BRTEs, university or college teachers and faculty members from DIETs. Subsequently additional inputs are provided through short duration training as well as on-site support. Most training is participatory in nature, as the training is provided through demonstration, hands on experience, and visiting ABL schools.

When asked about their views on the methodology adopted during ABL training, the majority of the responses (83.7%) from teachers interviewed were the mention of the following methods: demonstration, villupattu, puppet show, discussion, drama conference, games, power point presentation, use of audio video and group learning. Some responses (12.4%) indicated that training was effective. (Appendix D, Table 12). This response was higher from Chennai and Coimbatore cities (i.e.) 21.7% and 26.7% respectively than phase III schools (9.7%) and phase IV school (9.1%). Only 2.1% of responses mostly from phase IV teachers suggested a need for change in methodology of training (Appendix D, Table 12). A variety of modes used for ABL training indicate that it provided an innovative approach away from the traditional lecture method.

### C. Training Content and Materials

Contents of training materials were given a rating of *satisfactory or very good* by the experts. Experts compared training materials developed by DTERT and TNSSA with those prepared by British Council and found that DTERT-TNSSA materials were more-contextually relevant. These materials received positive ratings such as 'rich in content -and 'helpful in giving specific instructions to the teachers.' Experts also suggested that a few video programmes used to improve teaching of English needed further adaptation. It was reported that "Hello English" and "Fun with English" followed a "mono-lingual approach" and created some difficulty for teachers to understand the content. So, training materials require some adaptation.

Teachers in their interviews were asked an open-ended question about their views on the content of ABL training programmes. The majority (82.3%) of teachers' responses listed the content of the training activities, such as: ABL cards, Villupattu, puppet show, self-learning materials, supplementary reader, logo introduction, use of charts, self attendance; activities, binding wires and low level blackboard. Only 6.2% of responses did not mention the content of ABL training but expressed that the content of training was appropriate and no change was required in it. Only 4.7% of teachers' responses stressed the need for more training in the areas of Mathematics and English. The suggestion to include daily life activities also came up through 2.1% teachers' responses (Appendix D, Table 13).

### D. Post-training Follow-Up

The majority of teachers' responses (59.9%) indicated that follow up training was provided through regular visits of the BRTEs. The responses from phase III and phase IV teachers were higher (63.0% and 68.9% respectively) than that of phase I (36.5%) and phase II (24.5%) teachers. Teachers also indicated that review meetings were held at school, CRC and BRC levels for the follow up of training. Inputs were also provided for maintaining various records in the follow up trainings (Appendix D, Table 14). It may be concluded that follow up activities were weak in phase I and II as compared to that of phase III and IV.

### E. Trainers' Competence

ABL training is handled by both resource teachers and BRTEs. Initially all BRTEs were trained by the resource teachers working in Chennai schools. Later BRTEs and resource teachers together became a resource group for training teachers in different parts of Tamil Nadu. While BRTEs provided the details of theoretical aspects of ABL, practicing teachers shared their experiences through demonstrating ABL classroom activities. In 76.3% of teachers'



responses, ABL trainers were described as being competent in explaining the concept clearly, with interest and in simple ways. Approximately 11% of teacher responses conveyed that trainers were experienced and 10.4% of responses described trainers as being patient while handling the training sessions (Appendix D, Table 15).

### Summary

Most teachers were satisfied with all the dimensions of training, training duration, methodology followed for training, quality of training materials, follow-up activities and competency of trainers. Some responses to enhance the duration of training were received from Coimbatore teachers and BRTes. A variety of modes used for ABL training indicate that training was provided using innovative ways rather than traditional lecture method. The follow up activities were found to be weak in phase I and II school as compared to this in phases III and IV.

### 3.2.2 Quality of ABL Learning Materials for Students

High quality learning materials can facilitate proper programme implementation, whereas learning materials of a low quality would have a detrimental effect on programme implementation, and on student learning.

In ABL, a variety of learning materials are used, for example, learning cards, ladders, supplementary reading materials (graded booklets in English and Tamil), daily attendance sheets, note books, workbooks, interactive audio/video materials, Montessori kits for Mathematics, Science kits, weather and health charts, and material to do puppetry. Textbooks are also used occasionally for self-evaluation activities. The quality of these materials was evaluated by experts, teachers and students. The findings are given in following two categories: (A) Learning Cards and Ladders and (B) Supplementary Material.

#### (A) Learning Cards and Ladders

Under ABL, the content of learning cards is to be in simple language, as the focus is on self and peer-learning. In ABL, competencies in each milestone and the ladder are sequenced from simple to complex in order to facilitate students' learning. Experts rated most aspects associated with the quality of learning cards as 'very good' or 'excellent'. Learning cards are arranged in a sequential order in ladders with "age appropriateness" in mind. One of the experts commented that ABL cards in EVS "stimulate observation, thinking and other scientific processes among children".

However, the use of cards in English, Mathematics and Science led to apprehensions that a considerable effort by the teachers is required to make effective use of these cards in classrooms. For instance, regarding ABL cards for Mathematics, it was commented that the "teacher has to take the initiative to step out of the classroom and use learning opportunities – like gathering seeds, going to a shop to buy small things, etc". This indicates that classroom activities can sometimes depend on teachers' willingness to invest time outside of school to organize learning activities. For ABL cards in English, one of the experts commented:

*There are many elements of drilling and mechanical ways of learning that have crept in. The grammar does not have to be introduced starting with the definitions. Through an activity or an experience, children have to arrive at it, so that they appreciate the structures and beauty of the language.*

One of the experts noted that a considerable number of local examples were provided and cards were developed in such a manner that the learning progressed "in concentric circles from self to one's environment, to the district, city, state and country, and promote principles of good citizenship". Another expert said that ABL cards could be improved by establishing links between "child's daily life experiences and the school". Further she said, "more

realistic stories could be brought in about animals, birds and people, as this would help to validate the child's life and make a [connection] to school more meaningful for the child".

According to 43.5% of teachers' responses, ABL cards enhanced students' learning skills and thinking capacities. With regard to activities being appropriate, easy and simple, only 26% of responses of teachers agreed to this across phases (Appendix D, Table 16).

In about 55% of teachers' responses, sequencing of cards and milestones were described as appropriate. However, the range varied from 45.3% of responses in phase IV schools to 82% of responses in Chennai (Appendix D, Table 17). It appeared that the views of teachers were not in full agreement with the experts' rating of ABL cards in terms of enhancing the thinking capacity, sequencing of cards and milestones and the activities being appropriate, simple and easy.

While responding to an open-ended question about the difficulties faced by teachers in ABL classes, a large percentage (42.8%) of teachers' responses indicated that they faced no problems. However, the rest of the teachers' responses revealed that the following problems were faced by them: lack of cards, inability of students to keep cards properly, difficulty in understanding the content of cards, difficulty in working in groups and inability to clear children's doubts.

Coimbatore teachers were found to be experiencing more difficulties than others. Lack of cards (students waiting for the same cards which other students use) emerged as the major difficulty in 30% of Coimbatore teachers' responses.<sup>24</sup> Inability of students to understand the content of the cards surfaced in 22.2% of Coimbatore teachers' responses. Teachers' inability to clear children's doubts was cited as the major difficulty in another 13.3% of teachers' responses. Even though peer learning has been seen as a positive element in ABL, about 10% of Coimbatore and Chennai teachers' responses revealed that they faced difficulties while working with groups of children (Appendix D, Table 18).

Lack of cards and inability to understand the content of ABL cards emerged as major difficulties in approximately 18% and 10% of teachers' responses respectively.

Views of the students were also recorded on the quality of ABL cards on the aspects of appropriateness of size, colour, text and pictures. Children were shown different cards having variations on the above aspects and were asked to express their preference. In the majority of students' responses (76.7%) a preference for small sized cards was reported, as they were easier to handle. However, in 12.1% of students' responses preference for big sized cards was stated, as children perceived them to facilitate their learning. Big sized cards were also described as being easy to handle in 7.1% of children's responses (Appendix D, Table 19).

In response to a question on font size of ABL cards, about 47% of children's responses showed a preference for big font sized letters, while 21.9% of responses indicated a preference for cards having small font size and 17.3% of responses revealed a preference for medium font sized letters (Appendix D, Table 20). From the above, it may be concluded that the majority of children preferred small sized cards having a bigger font.

In approximately 32% of students' responses, a liking for cards with pictures of animals like lion, tiger, rabbit, elephant, birds, or forest was indicated. In more than one third of students' responses (35.3%), a liking for coloured cards that had children's favourite colours was expressed (Appendix D, Table 21).

<sup>24</sup> Sets of learning cards are supplied to each school by the State Project Office of the Tamil Nadu Sarva Shiksha Abhiyan, Chennai on the basis of number of students studying in class I to 4. We were informed by TNSSA team members that it will be a rare phenomenon to find students waiting for cards. It was reported that each school is given a set of ABL cards every year after ABL was implemented. This means there will not be any problem of shortage of cards after a few years.

## (B) Quality of Supplementary Material

ABL classrooms have a variety of supplementary materials based on the curricular requirements of each subject. Montessori kits are available to learn Mathematics. More than 300 books are available as enrichment materials. Most of these materials were rated from *satisfactory to excellent* by experts. It was reported that contents of most materials were described as being interesting, colourful and attractive to children. It was felt that there was an appropriate “mix of variety of materials and the technology used (using television and CD players for watching interactive audio-video materials) for implementing ABL”. Supplementary reading materials, as reported by an expert, “added richness to the ABL pedagogy”.

One of the experts was of the view that many books were available for students of classes 2 and 3, but not enough for the students of classes 1 and 4. Experts reported the lack of realistic depiction in a few storybooks in terms of text as well as the illustrations used. They also added that neither was there adequate coverage of content in the supplementary reading materials for class 4 students, nor was the language effective. The experts felt that there is room for improvement in the quality of text in many booklets. Activity books were also not available in sufficient quantities.

The font size used in some books seemed to be unsuitable to the age-group of children for which they were meant. A few inaccuracies in illustrations were also reported. For example, the story in a book was about a chick (*kozhikkunju*) but the illustration was of a duckling (*vaaththukunju*). The text needed to be changed because it was a story of an offspring of a water bird (*kunju*).

For the Mathematics kit, one expert said that there is “a need to evaluate the safety aspects of objects such as small plastic beads and take appropriate steps”. She also forwarded the following suggestion: “One variation that can be brought is to encourage children to prepare some elements of the kit themselves by using easily available objects such as seeds, pebbles, twigs, waste paper etc”.

One of the experts was also of the view that the material for early grades should arouse their interest in reading. For achieving the above she recommended using “phonetic words, short phrases with simple and clear illustrations”.

She further suggested that “*the sets of books could be different for each district as this would enable the local language, its usage and nuances to be brought in to the classroom*”.

While responding to interview questions, many teachers were quite satisfied with the quality of the learning materials. Some expressed that the materials were simple and therefore useful for ABL classes.

## Summary

Educational experts, teachers and students indicated that ABL enabled the teaching learning process to move away from textbooks and use a variety of learning materials. However, certain inadequacies were found in the materials. A few teachers reported difficulty in understanding cards. Students preferred colourful small sized cards with big sized fonts having pictures related to daily life. Teachers were of the view that supplementary reading materials made available in ABL classes provided scope for extended reading. There were some inaccuracies reported in illustrations of some cards.

In view of the experts, the cards are good in terms of the content, and their physical aspects. The activities of the cards “stimulated different processes of learning (observation, thinking etc.) among children; using a number of local examples in cards; as per the ‘age appropriateness’ of children”. However, they also suggested that the potential of

these cards for learning cannot be fully exploited until the teachers take the extra effort to provide the children with concrete experiences outside the classrooms/schools. Some examples of drilling and mechanical ways of learning were also reported. It was also suggested that activities in ABL cards should be linked to children's daily life. The views of teachers are not in full agreement with the experts' views about ABL cards in terms of enhancing the thinking capacity, sequencing of cards and milestones and the activities being appropriate, simple and easy. If we go by the views of the teachers' alone, there are concerns about the quality dimensions of ABL cards. Other problems such as lack of cards, inability of students to understand the content of cards, difficulties in working in groups and inability to clear children's doubts were also reported by teachers. These responses were mostly received from Coimbatore schools. The majority of children preferred small sized cards with a bigger font. They also indicated their liking for coloured cards having pictures of different animals.

Most of the supplementary material was rated from *satisfactory to excellent* by experts. Experts were also of the view that use of TV/ CDS and other audio players enhanced the richness to the ABL pedagogy. However, some of the drawbacks relate to lack of sufficient supplementary material for class I and IV students. Poor quality of supplementary material in terms of the content, language used, illustrations, font size and some factual inaccuracies were also reported in general. Concerns about the safety aspects of Mathematics' kit were also raised. A suggestion to develop district specific supplementary books was also reported.

### 3.2.3 Classroom Processes in ABL

To assess classroom processes in ABL, various aspects considered in the study were: (A) Classroom Process as Observed through the Classroom Observation Schedule; (B) Perception of Teachers and BRTes about ABL Methodology; (C) Innovative Aspects about ABL as Viewed by Teachers; (E) Perception of Teachers' about Pupil Evaluation in ABL and (E) Children's views about Significant Features of the Teaching Learning Process.

#### A. Classroom Process as Observed through the Classroom Observation Schedule

A Classroom Observation schedule was used, which contained 50 questions related to implementation of ABL, classroom practices and teachers' behaviour. Composite scores were developed for each aspect, having a maximum score of 10, 40 and 50 respectively after rating items on two to five point scales. The Cronbach's alpha values of these scores were 0.7, 0.7 and 0.9 reflecting that all the scores were coherent and statistically reliable. The mean score on the above three aspects of classroom process were found very high, i.e. 8.4 out of 10 for implementation of ABL. It varied from 7.2 in Coimbatore to 9.6 in Chennai. Similarly, the classroom practices mean score and teachers' behaviour mean score were also quite satisfactory i.e. 33.5 (out of a maximum score of 40) and 39.7 (out of a maximum score of 50) respectively. It was evident that Coimbatore schools lagged behind in all the three aspects of classroom processes, in comparison to other schools (Table 15).

**Table 15: Classroom Process Scores**

School Type	ABL Implementation Score (Maximum = 10)		Classroom Practices Score (Maximum = 40)		Teachers' Behaviour Score (Maximum = 50)	
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)
Chennai Schools (phases I & II)	115	9.6 (0.7)	119	34.6 (1.6)	119	44.2 (5.1)
Coimbatore City Schools (III & IV)	91	7.2 (1.9)	89	32.2 (2.3)	88	33.4 (4.2)
Model Schools in Other Districts (Phase III)	301	8.4 (1.5)	297	33.6 (2.3)	302	40.2 (5.8)
Other Schools in Other Districts (Phase IV)	582	8.3 (1.6)	571	33.5 (2.4)	571	39.3 (6.4)
Total	1089	8.4 (1.6)	1076	33.5 (2.3)	1080	39.7 (6.4)

Note: N- Number of classrooms observed, SD – Standard Deviation.

The F-values in Table 16 show that there were significant differences between at least one pair of schools in all the three aspects of classroom processes.

**Table 16: F-Values of Classroom Process Scores**

School Type		Sum of Squares	Degrees of freedom	Mean Square	F- value
Implementation Score Vs School Type	Between Groups (Combined)	313.700	3	104.567	43.46*
	Within Groups	2610.300	1085	2.406	
	Total	2924.000	1088		
Classroom Practices Score Vs School Type	Between Groups (Combined)	294.107	3	98.036	18.73*
	Within Groups	5609.874	1072	5.233	
	Total	5903.980	1075		
Teacher Behaviour Score Vs School Type	Between Groups (Combined)	5525.852	3	1841.951	51.88*
	Within Groups	38205.422	1076	35.507	
	Total	43731.274	1079		

Note: (\*) –  $p < .000$ .

To sum up, classroom processes were found satisfactory in most schools. However, Chennai schools reflect better classroom processes among all phases of school, whereas Coimbatore schools lagged behind all others in this regard.

## B. Perception of Teachers and BRTEs about ABL Methodology

A composite score was created for assessing perceptions of teachers and BRTEs. The mean perception scores of BRTEs and teachers towards ABL methodology revealed that both BRTEs and teachers have a positive perception towards ABL methodology (Table 17). While teachers' mean score was found to range between 54.9 and 70.2 out of the maximum score of 80, BRTEs mean score ranged between 77.1 to 92.9 out of a maximum score of 96. Variations

were observed across phases. Chennai teachers' score (M=70.0, SD=7.9) was better than their counterparts working in other district schools (M= 62.0; SD= 8.2), Model schools (M=61.0, SD= 8.3) and Coimbatore (M=55.0; SD=8.7). Similarly, Chennai BRTes perception score (M=92.9, SD= 3.9) was higher than their counterparts working in other schools (Table 17).

**Table 17: Means and SDs of Teachers' and BRTes' Perception about ABL Methodology**

Schools	Teachers (maximum – 80)		BRTes (maximum – 96)	
	No. of Teachers	Mean score (SD)	No. of BRTes	Mean score (SD)
Chennai Schools	122	70.2 (7.9)	49	92.9 (3.9)
Coimbatore City Schools	130	54.9 (8.7)	46	77.1 (9.8)
Model Schools in Other Districts	217	61.0 (8.3)	158	84.8 (7.7)
Other Schools in Other Districts	413	62.0 (8.2)	273	84.7 (8.0)
Total	882	61.8 (9.2)	526	84.8 (8.5)

Notes: Cronbach alpha values for items included in the composite scores for teachers and BRTes were 0.89 and 0.89 respectively.

The analysis of mean scores (Table 18) showed that there was a significant difference among perception levels of teachers. The same holds true in the case of BRTes. The F - values were significant at  $p < 0.000$  level.

**Table 18: F-Values of ABL Methodology Scores**

Respondents	Schools	Sum of Squares	Degrees of freedom	Mean Square	F
Teachers	Between Groups	15003.18	3	5001.06	73.55*
	Within Groups	59698.36	878	67.99	
	Total	74701.54	881		
BRTes	Between Groups	5988.01	3	1996.00	32.62*
	Within Groups	31946.21	522	61.20	
	Total	5988.01	3		

Note: (\*) -  $p < .000$

Since ABL was implemented for a longer duration in Chennai, teachers and BRTes in Chennai developed a positive perception towards ABL methodology. The low standard deviations for Chennai teachers and BRTes reveal that most of them understood and perceived ABL in the same manner with little variation.

### C. Innovative Aspects about ABL as Viewed by Teachers

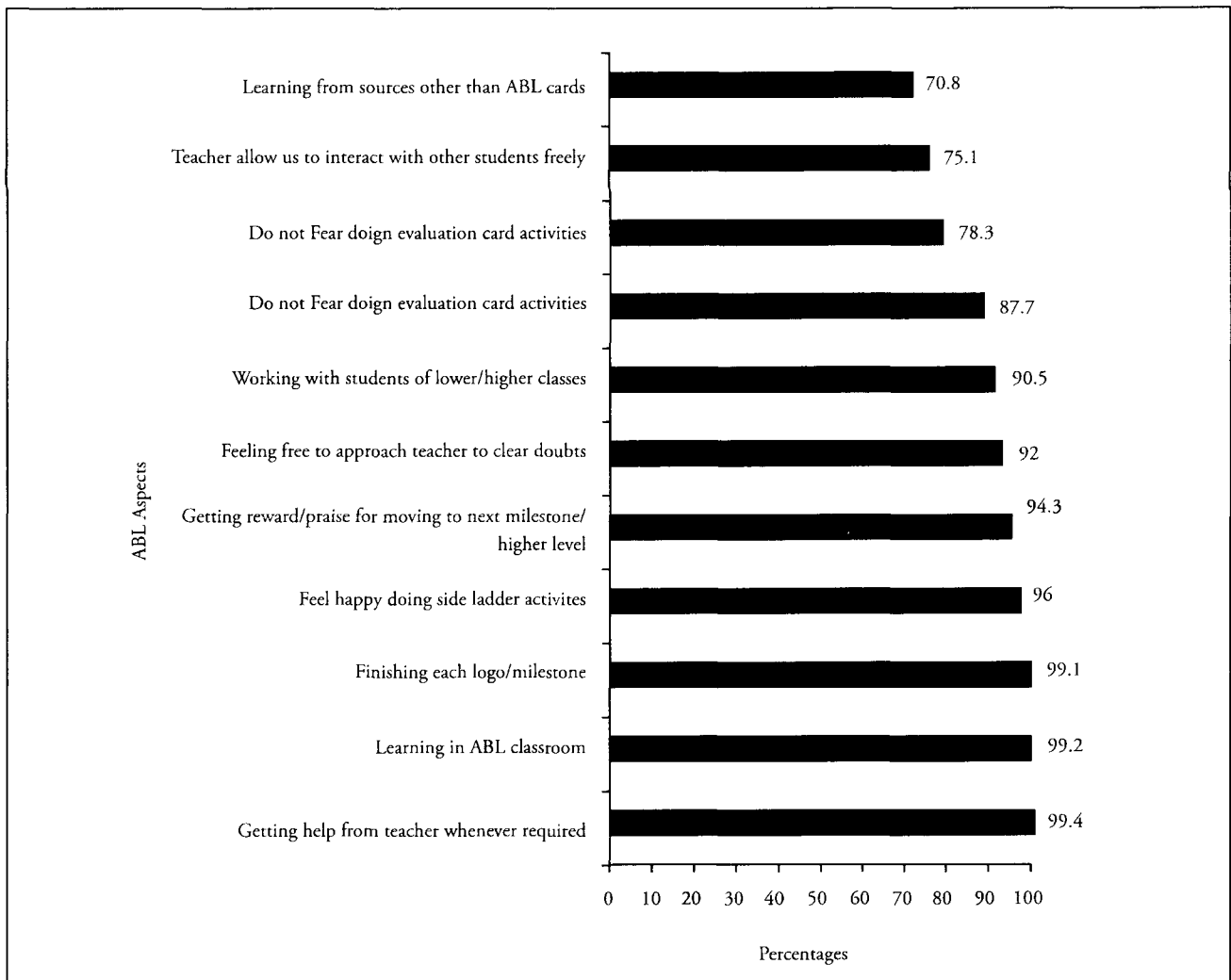
An open-ended question was asked to teachers about the innovations/improvements in classroom processes in the ABL approach. In 36.4% of teachers' responses, "allowing students to learn at their own pace" was perceived to be an important innovative aspect of ABL. Other innovative aspects viewed by teachers were related to the enhancement of creativity, use of low level blackboards, use of self-learning materials, self attendance by children, easy steps in learning, doubts being cleared by teachers or peers and no fear. Teachers in schools of different phases viewed these innovations in different proportions. In Coimbatore schools enhancing creativity was perceived more strongly than schools of other phases, whereas the option of learning at one's own pace was given more importance in phase III and IV teachers' responses (Appendix D, Table 22). A majority (88.8%) of teachers' responses indicated that the ABL evaluation strategy (i.e. no formal examination but students self evaluate their learning through mechanisms built into learning cards) was appropriate. The acceptance of this evaluation strategy was most prevalent in Chennai teachers' responses (95%) (Appendix D, Table 23). In 70.8% of teachers' responses this practice was described as

appropriate because evaluations were planned based on children’s completion of milestones and pace of learning (Appendix D, Table 24).

**D. Children’s Views about Significant Features of the Teaching- Learning Processes**

More than 90% of students’ responses showed that they responded positively to most of the aspects of the ABL methodology (Figure 3.1).<sup>25</sup> Children reportedly felt happy to learn in ABL classrooms and complete ABL activities. They reported getting help from teachers whenever they required. However, children’s percentage of affirmative responses was lower with regard to questions like do (i) Children fear evaluation under ABL? (ii) Teachers allow children to interact with other students? and (iii) Children learn from sources other than cards? The fear of evaluation was more dominant in responses given by students studying in Chennai and Coimbatore schools. This is not in tune with the assumption that the longer the exposure the better the perception of children in these aspects. Approximately 25% of students’ responses revealed that their teachers did not allow them to interact freely with other students. This response was highest among Chennai schools and lowest from model schools (Appendix D table 25).

**Figure 2: Percentage of Students who are Positive about ABL Aspects**



The majority (70.8%) of students’ responses indicated that they learnt from sources other than ABL cards (Appendix D, Table 25). This response of using other materials was found to be relatively high among Model Schools and

<sup>25</sup> An attempt to develop students’ perception measure was made. Since the reliability tests (Cronbach’s alpha value) were not satisfactory and had a very low alpha value (0.25), each item has been analysed separately

Other District School students. It was lowest among Coimbatore city students. Response of Learning from sources other than ABL cards was also chosen/ endorsed by 43.2% of Coimbatore city and 64.4% of Chennai respondents (Appendix D, Table 25). This indicates the need to examine difficulties faced by students accessing learning materials other than those available in ABL classrooms in Chennai and Coimbatore cities.

When children were asked about the feelings they experienced upon learning in ABL classrooms, 51.5% of students' responses indicated that in ABL, learning through cards was joyful. The prospect of learning through play, especially with learning cards that had attractive pictures, was mentioned in 45% of responses (Appendix D, Table 26). To quote the response of a class 4 student in Dindukkal district,

*"ABL cards contain many activities I like. I like ABL because it has jumping fish (meen thullikudhiththal), run and play (oodi vilaiyaadu) activities."*

A few students also described teachers as being affectionate and reported experiencing no fear of teachers. A student studying in class 5 who learnt through the ABL methodology for only a few years stated that he or she "[f]elt happy when I got crowned as I had to compete with other students to get it". Most students' responses indicated that there was a sense of learning having taken place due to ABL.

Approximately 56% of students' responses showed a preference for learning with the help of teachers (Appendix D, Table 27), while in 24.5% and 19.2% of students' responses a preference to learning with the help of peers and to learning independently emerged respectively. This tendency to learn without the help of the teacher was highest among Chennai students. This has held true even among non-ABL (class 5) students. Since class 5 students have also learnt through the ABL system during the preceding 4 years, their preferences have been similar to current ABL students (classes 2 to 4) (Appendix D, Table 27).

A majority of students' responses (80.9%) indicated that they preferred to learn through ABL cards in comparison to textbooks (Appendix D, Table 28). However, when students' responses were analyzed on the basis of class, noticeable differences were found. In comparison to 87.9% of class 2-4 students' responses, only 59.9% of class 5 students' responses indicated a preference for ABL cards. When asked to give reasons for their preferences, the major reason cited by students in their interviews for preferring cards was the feeling of acquiring knowledge and having an opportunity to participate in various activities (Appendix D, Table 29). For those that preferred textbooks, the reason cited was that they could study with books at home.

## Summary

Classroom practices were found to be better organized in Chennai schools. However, there was also scope for improvement in other schools. Large sections of ABL (classes 2 to 4) and non-ABL (class 5) students had positive perceptions about various aspects of ABL. Students reported that learning through cards was not only joyful but also allowed them to work with attractive pictures and learn through playful activities. Learning based on competencies and milestones gave students a sense of learning and made them feel happy and joyful. However, a section of students reported fear while attempting evaluation activities. Some of them also reported that they were controlled by teachers while working with ABL groups and they were not able to access additional materials to learn. These aspects were reported mainly by students studying in urban schools.

According to students, teachers were an important source of support in ABL. However, this tendency declines moderately as they move towards non-ABL teaching learning in class V. Students also preferred to work individually and with the help of peers. While a large section of students preferred learning through ABL cards, when they moved to higher classes their preference shifted to learning through textbooks. Although a substantial number of teachers



and BRTes showed a positive perception towards ABL methodology, those working in Chennai schools showed a more positive perception towards ABL methodology than others. Coimbatore city teachers and BRTes revealed less favourable perceptions about the ABL methodology. Those working in model schools and other schools had a lower level of perception about ABL than their counterparts working in Chennai but higher than their counterparts in Coimbatore. According to teachers, the teaching-learning approach that allows students to learn at their own pace is the most innovative aspect of ABL. Most teachers considered the evaluation strategy followed in ABL appropriate.

### 3.2.4 ABL Support Systems and Classroom Processes in ABL

In order to identify important sets of variables influencing classroom processes effectively, the step-wise regression method has been used. In this method, all the variables are included in one equation and a group of variables was removed on the basis of their contribution to the probability of F.<sup>26</sup> A variable is entered into the subsequent model if the significance level of its F value is less than the 'entry value' (0.09) and is removed if the significance level is greater than the 'removal value' (0.10). The variables are entered and removed till no other variable improves the value of F and R<sup>2</sup>. The final equation has been treated as best fit. The estimated coefficients of three final equations are given in Table 19.<sup>27</sup>

**Table 19: Coefficients of Variables Influencing ABL Classroom Processes**

Independent variables	Values of $\beta$ coefficients of dependent variables		
	ABL Implementation Score	Classroom practices Score	Teacher - Student behaviour Score
Constant ( $\alpha$ ) value	5.93	29.38	19.015
1. Experience of Teachers in ABL	-	0.165* (2.807)	-
2. Teachers' Perception on ABL Methodology	0.136** (2.192)		0.280* (4.671)
3. BRTes Perception on ABL Methodology	0.144** (2.313)	0.192* (3.258)	0.142** (2.359)
4. Other School (D)	-0.410* (4.16)	-	-0.144* (2.571)
5. Model School (D)	-0.326* (3.312)	-	-
R <sup>2</sup>	0.168	0.073	0.164
F-Value	13.75	10.84	17.85

Notes: (\*) p < .000; (\*\*) p < .005. Figures in brackets denote t-values.

The regression results revealed that five factors accounted for up to 7.3 % of the variation in classroom practices, 16.4% of variation in teacher behaviour and 16.8% of the in implementation of ABL (Table 19). This appears to be a very insignificant contribution.

#### Summary

BRTes and teachers play an important role in making the ABL classroom processes effective. It is not only important to see to it that teachers acquire sufficient experience in organising ABL classrooms, sufficient time may be needed for teachers of later phase schools to implement ABL.

26 F-test is a measure of the overall significance of the estimated regression. It is used to test hypotheses about (i) equality of variances and (ii) the equality of more than two means. It helps to decide whether or not the estimated regression function fit the observed data.

27 Due to space constraints, all the equations estimated through step-wise regression are not reported here. Contact [dee@rediffmail.com](mailto:dee@rediffmail.com) (Attention: ABL evaluation study) for details.

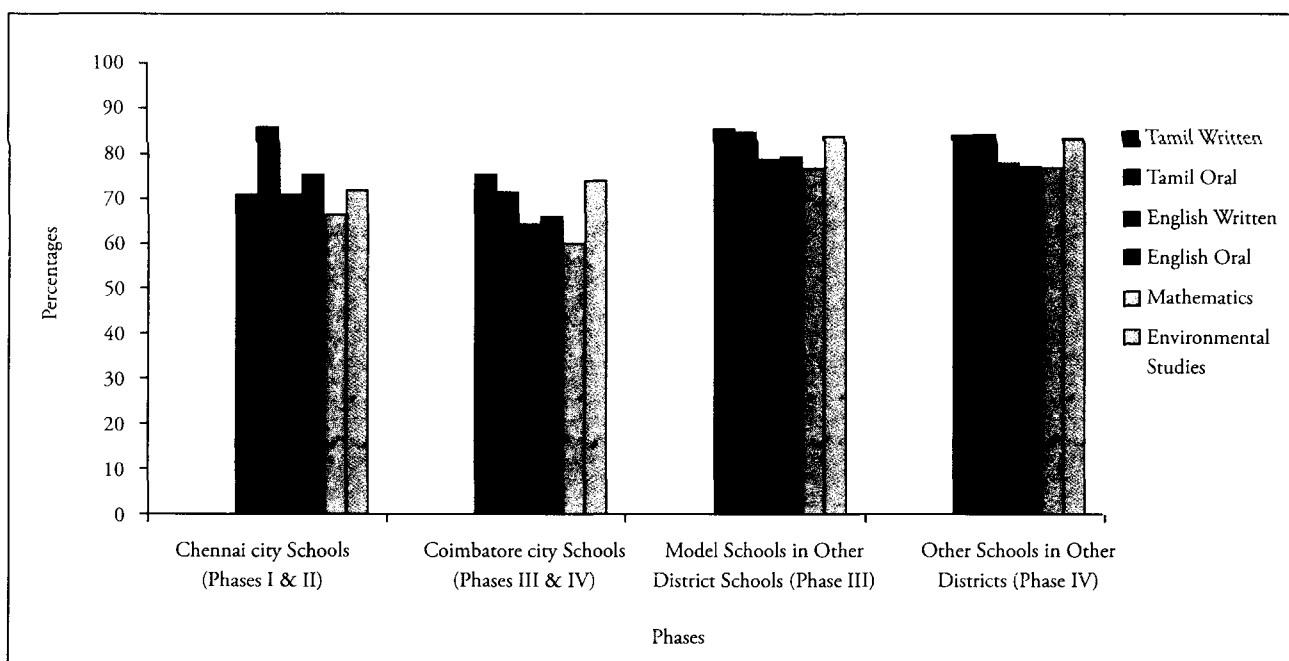
### 3.3 Has ABL improved student achievement in different subject areas? If so, to what extent?

This part contains two sections. The first section compares children's achievement in schools having ABL exposure for longer duration and schools having ABL exposure for shorter duration using achievement tests that were specifically created for the ABL initiative. In the second section, an analysis of student achievement over time is presented using achievement test data collected by NCERT.

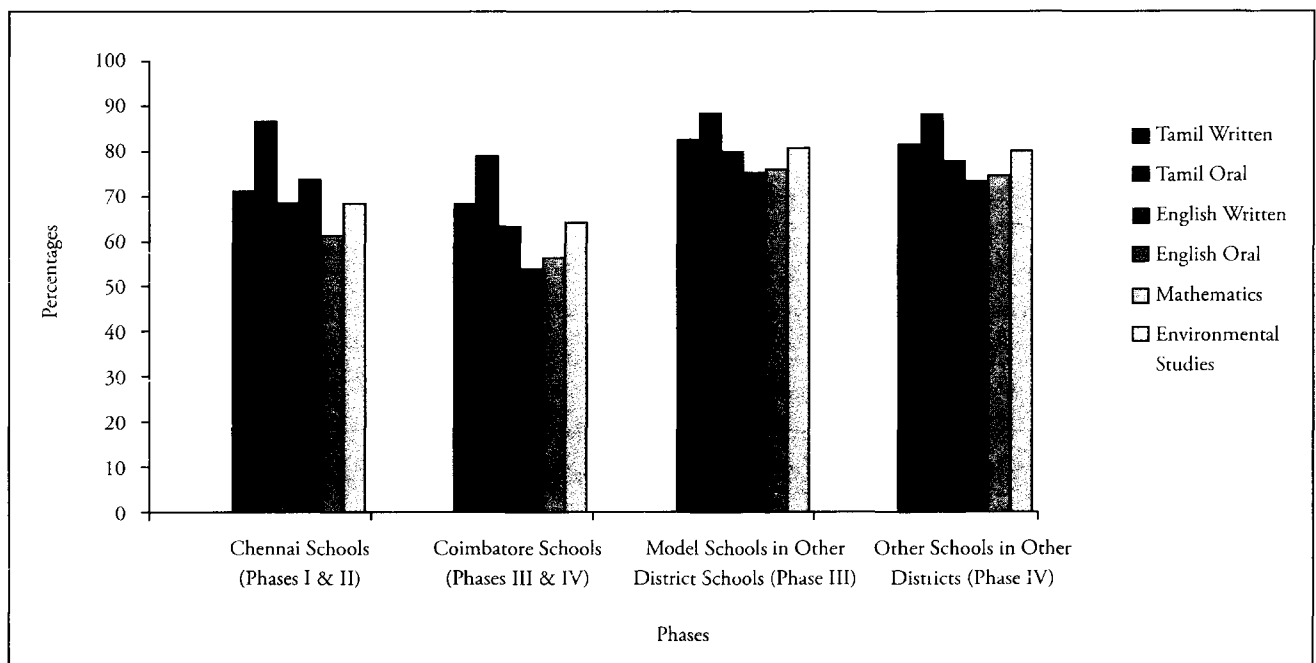
#### 3.3.1 ABL Achievement Tests

Because there was no control or comparison group available in the study, it was assumed that students studying in schools that received ABL inputs for a longer period would perform better than students of schools that received ABL inputs later. That is, the mean scores of Chennai school students would be higher than those of Coimbatore, model and other school students. However, the evidence did not show any such continuous rise in the performance of students (Appendix D, Table 30; Figures 3 to 8).

**Figure 3: Class III Student Achievement across Phases**



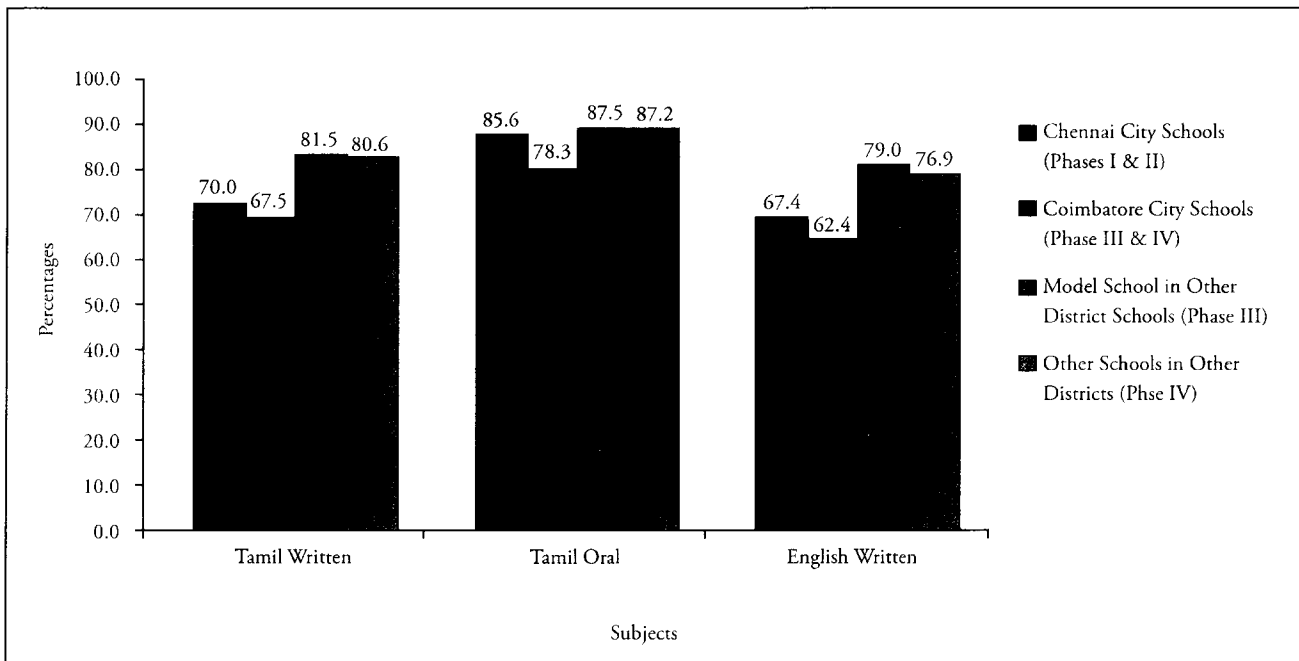
**Figure 4: Class IV Student Achievement across Phases**



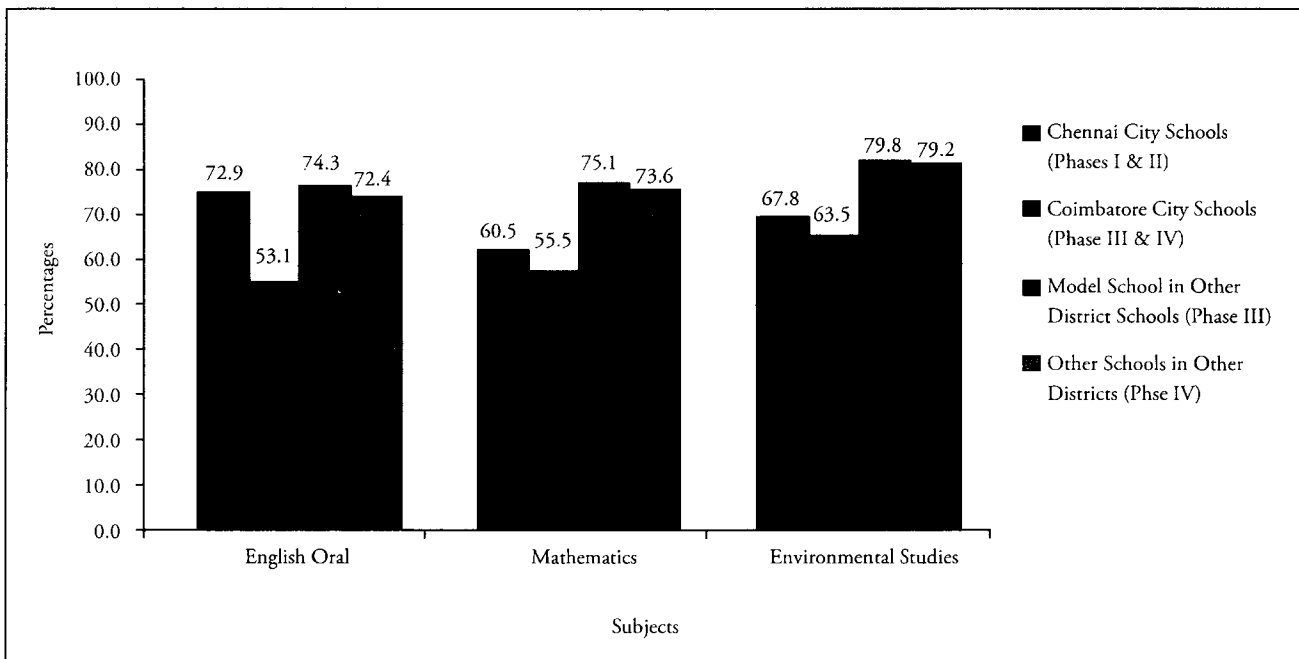
This may be due to the socio-economic background of students, as shown in other studies (School Scope, 2003). It is argued that the students studying in Chennai city come from low-income families and are usually migrants. Similar inferences could be made for students studying in other urban areas as well.

The performance of students studying in Chennai schools was moderately higher than their Coimbatore counterparts (Appendix D, Table 30 and Figures 3 to 8). This held true for all subjects in class III and Class IV, apart for Tamil Written and EVS in fourth standard. However, students from Model schools and Other schools have outperformed their Chennai counterparts except in English Oral (Class III; Chennai students marginally outperformed their other school counterparts) and Tamil Oral (Class IV; Chennai students slightly outperformed their model and other school counterparts), thus disproving our assumption that longer exposure to ABL will lead to better academic performance. Students studying in model schools have scored slightly better than their counterparts from phase IV schools in almost all subjects except in Mathematics (Class IV). However, it is necessary to make a cautionary note that the socio-economic dimension of students in these schools is different from one another.

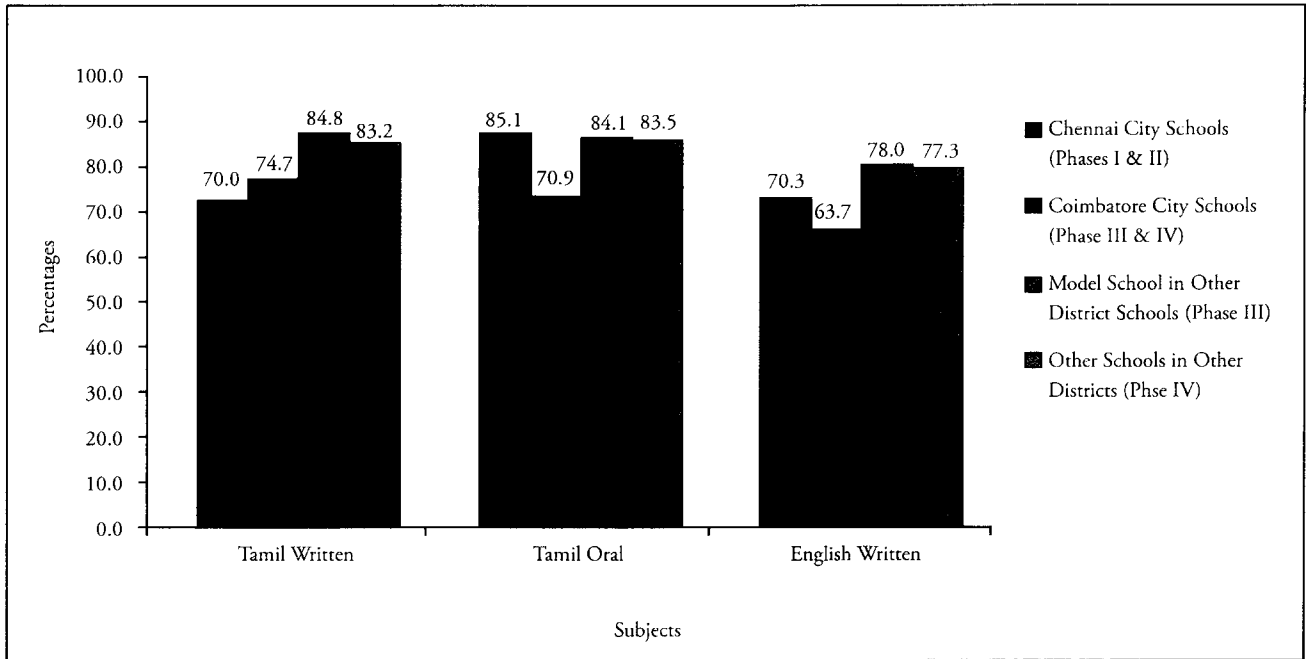
**Figure 5: Average Class Marks of Class III Students in Tamil Written, Tamil Oral and English Written**



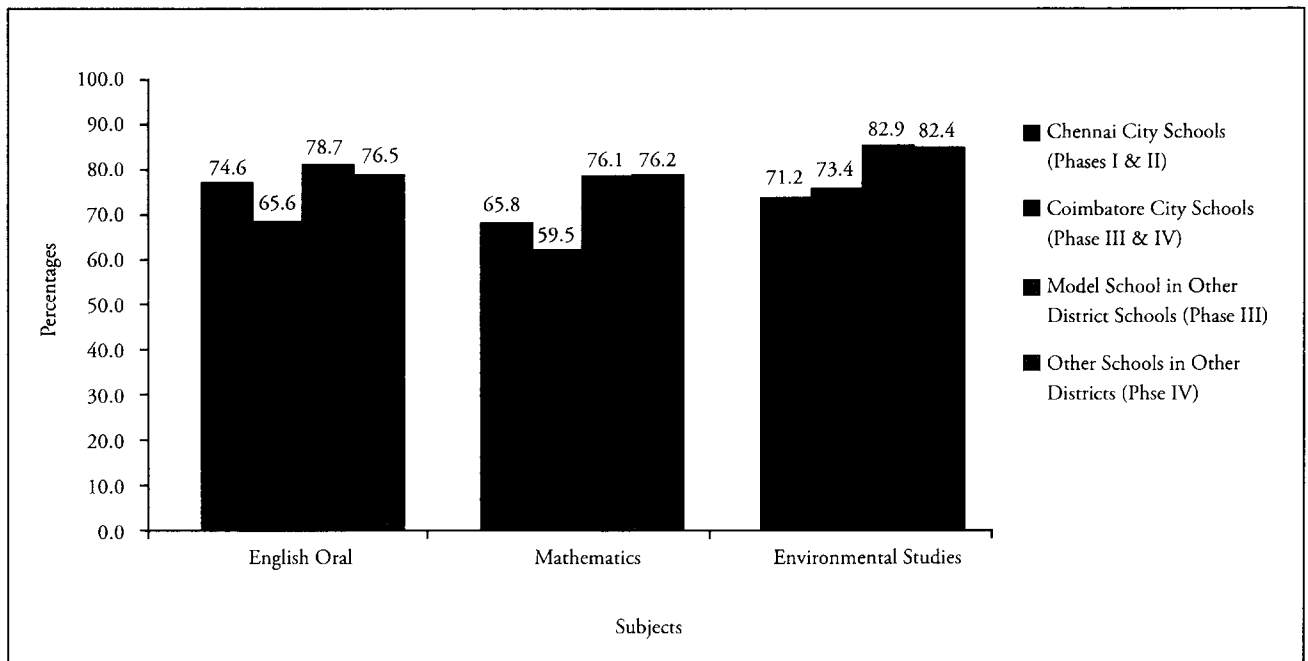
**Figure 6: Average Class Marks of Class III Students in English Oral, Mathematics and Environmental Studies**



**Figure 7: Average Class Marks of Class IV Students in Tamil Written, Tamil Oral and English Written**



**Figure 8: Average Class Marks of Class IV Students in English Oral, Mathematics and Environmental Studies**



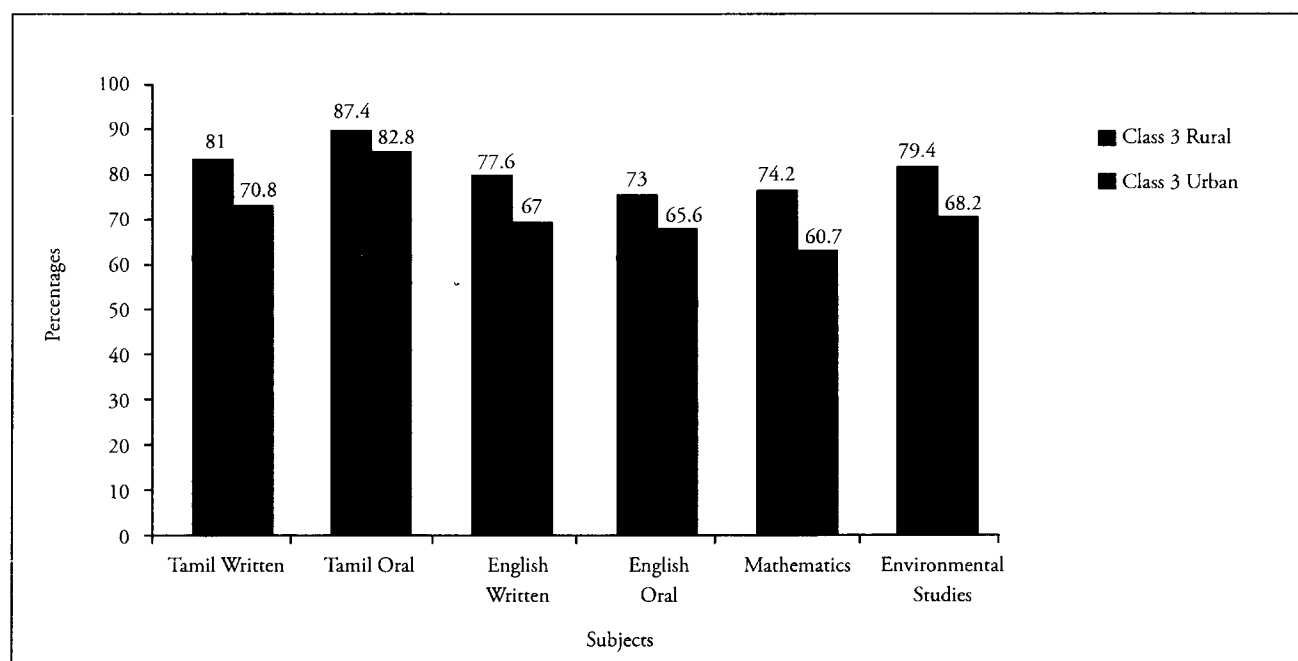
In order to determine whether length of exposure to ABL made a difference in student achievement, Chennai schools (Phase I and II) were compared to Coimbatore (Phase III and IV) schools. Schools in Chennai underwent 5-6 years of the ABL initiative. These schools received ABL inputs from 2003 (Phase I) and 2004 (Phase II) onwards. Schools in Coimbatore have received ABL inputs in 2006-07 and 2007-08. The performance of students in both the classes 3 and 4 in Chennai (phases 1 and 2) were higher than their counterparts in Coimbatore city (phases 3 and 4) except in two tests – class 4 Environmental Studies and Tamil Written (Appendix D, Table 30). The independent sample t-tests conducted on the achievement data showed that the difference between schools in Chennai and Coimbatore for most of the subjects were significant at  $p=0.05$  level.

Mean differences were estimated to understand whether or not there were any statistically significant differences in achievement levels of students studying in schools of different types (Appendix D, Table 31). The mean differences of the achievement level of Chennai school students were statistically significant and higher than their Coimbatore counterparts in all but one subject, i.e. class 3 Tamil written tests. On the other hand, the low performance of Chennai students in comparison to their counterparts in Model Schools were statistically significant in all subjects except English Oral (class 3). The mean differences of the achievement levels of Coimbatore students were also significantly lower than their counterparts studying in Model Schools and Other District Schools. The mean differences between Model Schools and Other District Schools were not only low in all subjects but also insignificant in most subjects.

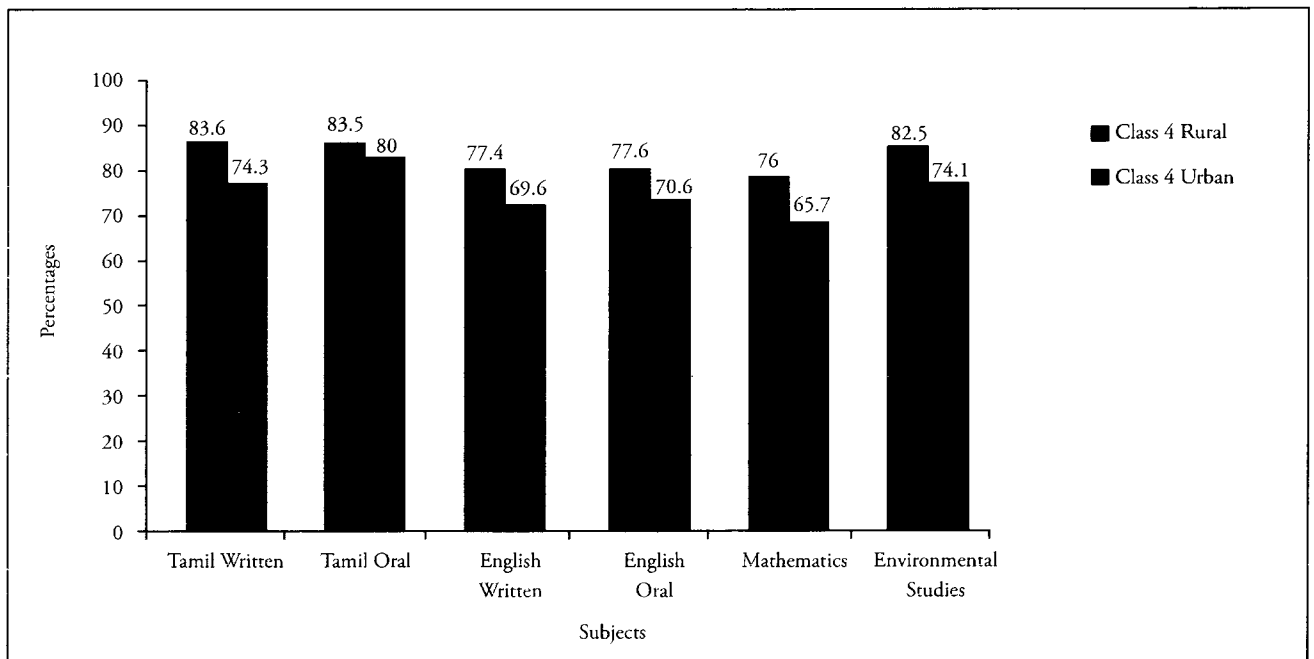
While there was a significant and positive difference between the performance of students in Chennai and Coimbatore schools, such a trend difference was not found among students of Model Schools and Other Schools. This leads to difficulty in supporting the assumption that length of exposure to ABL would be positively related to level of student achievement. There may be many other factors (e.g., SES or urban/rural) accounting for differences in students' performance. With this in mind, comparisons of urban versus rural students were made.

The performance of rural students was better than that of their urban counterparts in both classes 3 and 4 in all subjects (Appendix D, Table 32; Figures 9 and 10). This finding was also supported by independent samples t-tests conducted on the mean scores across rural and urban schools. The mean differences were also significant for most subjects at the  $p < .001$  level.

**Figure 9: Class 3 Student Achievement: Rural vs. Urban**



**Figure 10: Class 4 Student Achievement: Rural vs. Urban**



The paired samples T-tests conducted on the mean scores of boys and girls revealed that the girls scored significantly higher than boys at the  $p < .005$  level (Appendix D, Table 35).

Although student achievement in all subjects was quite high ( $> 70\%$ ) there were certain concept areas in which their performance was moderate. In class 3 for instance, many students found the use of pronouns difficult. In Mathematics, understanding of sums involving addition and subtraction of three digit numbers, multiplication, fractions and understanding of weeks in a month were found difficult. Children’s awareness of the food chain, and social behaviour related items was found to be lacking. While answering class 3 Tamil achievement tests, questions combining two words into one, making correct sentences out of jumbled words, comprehending given passages, and recalling features of flowers and animal habitat were found difficult by the students.

Some class 4 students found understanding of pronouns and tenses difficult. In class 4 Environmental Studies, students’ understanding of inventions, national symbols and knowledge of prominent places within Tamil Nadu was found to be low. A few class 4 students were unable to solve questions based on multiplication, division, and comparison of numbers. Items found difficult by class 4 students in Tamil were those which required combining two words into one, filling in the blanks or answering simple comprehension questions after reading the given passages.

### 3.3.2 Comparison of Achievement Levels in Other Studies

A few studies conducted by NCERT provided details of students’ achievement level at the primary stage in Tamil Nadu at different points in time during the last 5-6 years. Achievement surveys conducted by NCERT, as part of its National Achievement Survey, show that in 2004 (Baseline Assessment Survey period), class 3 students in Tamil Nadu scored 66.5% in Tamil, and this increased to 79.8% in 2008 (Mid-term Assessment Survey period). The same tests were given to students at two points in time (2004 and 2008). Similar increases in scores were also found in Mathematics where scores increased from 53.5% in 2004 to 75.2% in 2008 (Appendix D, Table 36).

## Summary

Student achievement scores in all subject areas were at high levels; however, certain topics were identified that students had difficulties with, and were therefore in need of remedial measures. Some differences were found between groups; for example, Chennai students outperformed Coimbatore city students; rural students outperformed urban students; and girls out performed boys. The assumption that length of exposure to ABL is positively related to the level of student achievement was rejected. There may be many other factors (e.g., SES or urban/rural) accounting for differences in students' performance.

An analysis of class III and IV student performance in achievement tests conducted by NCERT at different points in time (i.e., 2004 and 2008) before and after the implementation of ABL indicate substantial improvements in students' performance in three subjects – Tamil, English and Mathematics.

## 3.4 What other outcomes are attributable to ABL?

### 3.4.1 Student Related Outcomes

#### A. High Level of Self Confidence among Students

When asked to report changes that occurred in classrooms since the inception of ABL, teachers (Appendix D, Table 37), BRTEs (Appendix D, Table 38) and community Members (Appendix D, Table 39) commented upon students' level of self-confidence. In interviews, teachers stated that students were highly '*confident*', were able to '*demonstrate what they have learnt*', and '*talk about it to anyone, regardless of age or status*'. Parents (Appendix D, Table 41) also noted an increased level of self-confidence among their children, as reflected in a parent's statement in a focus group discussion:

*"The scenario of the traditional classrooms has drastically changed now. I feel very proud when I see my child's drawings hung on the wired strings, and his art and craft work exhibited in the class. His confidence level has increased as students now have an opportunity to showcase their talents, in art and craft, which was absent in traditional classrooms."*

Two other aspects of ABL (i.e., self-assessment and giving responsibility to students to mark their attendance) could have also contributed to increased confidence levels. This was reported by teachers in their interviews:

*"Children are allowed to move at their own pace in the learning ladders, and assessment is done only for the completed milestones in the ladder. This enables every child to work individually and work with sincerity and focus."*

*"A child-centric, individual-based, non-threatening assessment (which is made part of the ladder) builds up the confidence level of every child. Every child is expected to work on the assessment cards at the end of each milestone. The child sees the assessment card as another activity. Every child progresses; no child is judged in terms of failure or success."*

*"In the ABL classroom, attendance is marked by the students themselves. Every child is given an attendance card, where a child marks his/her presence. Children believe that teachers have developed a "sense of trust" in them. This has increased their confidence."*

One BRTE who monitored the implementation of ABL in schools remarked on students' activities in Mathematics classroom:



*“You will be surprised to know, children are not only doing sums (addition); they create a few on their own, as they are thorough and confident.”*

When strangers visited ABL classrooms and asked questions on the cards they used or showed newspapers to read, write or calculate, students came forward to respond quickly. Since students were required to deal with most of learning activities as suggested in ladders, often with the help of teachers and peers, their level of self-confidence is likely to have increased.

## B. Students Have No Fear

Students were asked in interviews whether or not they felt afraid while learning in ABL classrooms. Most frequently they said: (i) ‘I don’t fear academic learning’; (ii) ‘I don’t fear my teacher’; (iii) ‘I don’t fear that my classmate[s] will tease me for my low achievement’; (iv) ‘I don’t fear that my parents will scold me for bad performance’; (v) ‘I don’t fear to explore’; (vi) ‘I don’t fear to do creative works’; (vii) ‘I don’t fear to ask questions’; (viii) ‘I don’t fear to do things on my own’; (ix) ‘I don’t fear trying out and failing’ and (x) ‘I don’t fear being corrected when I do something wrong’. These responses reveal that ‘no fear’ can mean a range of things for students. Students have become less hesitant in carrying out a variety of activities as expected in ABL. For example, some students have stated that they do not fear exams any more.

*“I know what I have learnt; why should I fear?”*

*“I do not fear, because I know the test card is from the milestones that I have learnt.”*

A housewife from Coimbatore stated in her interview,

*“Students learn with understanding; their intelligence has improved and fearlessly they interact with teachers and get their doubts clarified.”*

Similar views were also expressed by teachers who were not teaching in ABL classes. When teachers in some sample schools in Chennai city who were teaching class V and higher classes were asked a question about the behaviour of students of these classes who studied under the ABL system, many of them reported that compared to students coming from private matriculation schools and from non-ABL system, ABL students have no fear and behave with teachers as friends.

Potential reasons for this lack of fear may be that each child is tested based on what he/she has learnt. A crown is held on the head of a child who has completed a milestone, and all children get to wear the crown at some point in time. Hence, ABL is characterized by an absence of examination, fear of ranking and pass or failure. This process is likely to have resulted in students reporting no fear of examinations.

## C. Increase in Self-Learning

Teachers (Appendix D, Tables 37 and 40), BRTes (Appendix D, Table 38) and parents (Appendix D, Table 41) perceived the ability of children to learn on their own as a major influence of the ABL initiative on children.

Parents believed that the development of self-learning skills among children was one of the biggest advantages of the ABL approach. While sharing their views about learning through the ABL approach, teachers stated that ABL made self-learning possible.

In contrast to traditional methods in which teachers organize curriculum, the ABL curriculum has been organized through ladders and learning cards. While learning a concept or topic, teachers working with ABL students are required to introduce the concept in specific groups. The rest of the activities pertaining to that concept (i.e., practice, reinforcement, evaluation and enrichment) are to be learnt by students, either by themselves or with the help of peers. Students can approach teachers if they have any doubt. Otherwise, learning in ABL is not only individualized but also self-directed. For every topic in every subject, self-learning is promoted through ladders and learning cards, and through working in groups. This could have led students to develop self-learning skills.

#### D. Improvement of Students' Creativity

BRTes (Appendix D, Table 38) and parents (Appendix D, Table 43) were asked to record their observations about the influence of ABL on children in and out of schools, as well as on those who did and did not study in ABL classes. They considered the improvement of students' creativity as an important outcome of ABL. When community members (Appendix D, Table 39) were asked a similar question, the response received from them also was analogous to that of parents and BRTes. Apart from the development of hygiene and cleanliness among students, increase in student creativity was community members' third most frequently cited outcome. Likewise, when teachers (Appendix D, Table 42) were asked to share their views about the innovations and improvements of classroom processes that had occurred as a result of ABL, many teachers reported heightened levels of student creativity.

In contrast to the traditional classroom setup wherein the lecture method was the primary source of student instruction, ABL allows children to learn through cards, indulge in various activities, make their own novel displays which are hung in classrooms, and learn conventionally perceived difficult subjects such as Mathematics with the help of Montessori kits. Such learning is likely to foster creativity amongst children by providing them with ample opportunities to learn via trial and error.

#### E. Students' Self-Motivation Enhanced

Unlike the traditional classrooms, where teacher initiates the process of learning, the ABL approach enables every student to move from one activity to another and from one milestone to another. The students do get motivated (Appendix D, Table 40) to complete a set of activities in each milestone and then the whole ladder. This is required for all the subjects as well as for side ladder activities in each subject. Side ladder activities are those that are to be performed by students as a whole class. These activities are of two types: (i) those which are done in the beginning of the school (between 9.30 am to 10 am) known as *vaanavil* (rainbow) activities and (ii) those which are done in the last 30 minutes of the school hour (3.45 pm to 4.15 pm) known as *koodivilaiyaadu paappa* (play together) activities. For all the side ladder activities, teachers are required to work with children.

There are many factors likely to drive students' self-motivation. For instance, since there are many cards for each ladder and for each subject wherein ABL students have to complete all activities required for each card, students' responses indicate a sense of urgency inbuilt in ABL. A class 3 student says:

*"so many more cards are to be completed and learnt. Because of which, I have to complete all the cards quickly."*

Another factor mentioned which relates to self-motivation was the sense of satisfaction derived after learning a concept or an activity required to learn a concept. One class 3 student says: *"I feel I have completed learning."* Many students also reported the feeling of an urge to learn more when they look at a variety of activities to be done in each subject ladder.

Being able to move from one group to another by completing an activity was also motivating. One class 2 boy reported: *"I am going to read next card so that I can move to a new group."*

Even though each child who completes a milestone is crowned, there is a sense of competitiveness inbuilt in ABL. Many students reported that each one of them tries to go one step ahead of the other. One class 4 student said: *"when I see other students completing more cards and milestones than me, I feel the urge to speed up completing the activity so that I can reach the same level of other students."*

Although ladders, milestones, and sequentially arranged activity cards drive many students' self-motivation, students' responses also indicated another side of ABL that the sense of 'urgency' and 'competitiveness' inbuilt in these learning materials may also work as a barrier to achieving one of the important objectives of ABL, allowing students to learn at their own pace. This may become worse when teachers are given instructions that they have to monitor students to complete a set of milestones in each subject within the specified time period of a year.<sup>28</sup>

#### **F. Students have become more responsible**

Every day each student is required to fill in the attendance sheet, a group of students are required to fill in the weather chart; every student is required to keep in mind the milestone and card completed in the previous class of the same subject. After completing an activity in a milestone, she or he has to pick up next card and sit in the respective group. Even though all students may not be able to follow the requirements of ABL fully, community members (Appendix D, Table 44) indicated that there were a variety of opportunities provided in ABL classrooms that help in inculcating a sense of responsibility among most students.

#### **G. No burden of books on students**

When parents (Appendix D, Table 43) were asked to report important positive aspects of ABL, they observed that students no longer have to carry several books to and from school. In ABL, learning cards, workbooks, white papers, crayons and other materials are supplied in the classroom and students are required to use ABL cards and keep them in the classroom.

### **3.4.2 Outcomes Associated with Teachers**

#### **A. Increase in Teachers' Involvement**

One of the major challenges for implementers of ABL has been to enable teachers working with ABL classes to understand the need for changes in the classroom practices. Training imparted through various mechanisms appeared to have made a considerable impact on teachers' approach towards ABL. Their attitude towards children and their perception about teaching and learning has undergone a drastic change. To quote a teacher's remark:

*"I used to get angry often. Now after ABL, I have developed lot of patience."*

A teacher working in a crowded school run with the aid from government in a remote village in Tirunelveli says:

*"Before the implementation of ABL, I used to look at my wrist watch from 3 pm onwards so that I can catch the bus to the nearest town where I reside. After implementation of ABL, even with crowded classrooms, I frequently miss my bus as I get so involved with the ABL students."*

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28 Circular issued by State Project Director, Tamil Nadu Sarva Shiksha Abhiyan, Chennai no. 1221/A2/a.ka.e/2009 dated 19.08.2009.

## B. Better Student–Teacher Relationships

One common response of teachers, BRTEs, and parents (Appendix D, Table 46) about ABL was the change in the teacher-student relationship. They stated that ABL has strengthened the teacher-student relationship. Teachers were asked to comment on the differences in the behaviour between their colleagues working with ABL classes and those who were not working with ABL classes. Teachers noted that ABL students had better relationships with teachers working in ABL classes. A headmistress teaching classes 1 to 5 in the Karur district school reported that ABL changed her attitude towards teachers and ABL students. To quote:

*“In ABL, my role has changed from being a headmistress to co-teacher and friend of students.”*

The multiple roles which teachers are required to play in ABL classrooms may have contributed to this phenomenon. ABL teachers have to sit on the floor with students for the whole day and also carry out the task of clarifying doubts of individual student or group of students. Teachers are also required to give attention to students sitting in other groups. During the lunch break, teachers provide materials for students to read or to watch on the computer or television and work along with them. They also work with ABL students in whole-class situations for doing side ladder activities. These ABL requirements are likely to have improved the student–teacher relationship.

## C. Increase in the level of cooperation

Teachers (Appendix D, Table 45), BRTEs (Appendix D, Table 47), community (Appendix D, Table 39) and VEC members (Appendix D, Table 48) reported that since the advent of ABL, cooperation had increased among students or students and teachers. Community members considered the presence of cooperation and discipline in schools to be representative of a major change in the attitude of children towards school. The same view was shared by VEC members. They also perceived development of cooperation among students as an important influence of ABL on children. Both teachers and VEC members reported that the development of cooperation among teachers and students could be seen as a major influence of ABL.

This may be mainly due to the opportunity given to children in ABL to learn with the help of peers in groups. While clearing the doubts of their lower class students, many higher class students reported having become more affectionate towards their younger counterparts, while the younger children indicated in their interviews that they look up to their older peers for guidance and support, building an environment of cooperation and camaraderie.

The change in teachers' roles from that of formal authority figures to that of facilitators is likely to have resulted in decreases in fear and apprehension in children's minds, thus, encouraging them to seek help and direction from teachers. This likely has contributed towards the enhancement of cooperation among students and teachers.

### 3.4.3 Negative Outcomes

#### A. Increase in teachers' workload

Many teachers (Appendix D, Table 45) and BRTEs (Appendix D, Table 47) reported that their workload increased tremendously and they were not able to cope with this. Community members (Appendix D, Table 49) also mentioned in their focus group discussions that teachers' workloads have increased with ABL.

ABL teachers are required to give attention to each student as given in ladder and ABL cards. Besides assisting students with ABL activities, teachers must record the milestones completed by each student in each subject. For

younger students, at the end of each subject period, teachers are required to note down the logo and serial number of the cards they have completed (otherwise students may not be able to recall which card they completed during the previous class). Teachers also have to monitor students working with weather charts and health charts, and are required to sign and display the creative works done by students. Besides these, teachers are required to do a variety of activities as required in the side ladder activities.

### **B. Difficulty in Giving Sufficient Attention to Students**

Providing individual attention in large classrooms was seen as a major challenge by teachers and BRTes while implementing ABL in its intended methodology. To be specific, a few responses from teachers (Appendix D, Table 45), BRTes (Appendix D, Table 47) and VEC members (Appendix D, Table 48) indicated that they were able to provide individual attention to students.

### **C. Health Problems**

In ABL, all the teachers are required to sit on the floor and half a day is devoted to one subject, implying that they are required to spend most of the time in the class sitting on the floor. This has led to a few teachers (qualitative responses) reporting health problems.

### **D. Monotony**

A sense of monotony was reported by teachers, as they have to teach each student of the same class individually. In ABL, each student uses a specific learning card pertaining to a milestone in a ladder. However, teachers are required to teach every student when he or she needs to get introduced to a concept in a milestone. This monotony becomes acute (qualitative responses from teachers) in large classes.

### **E. Demand for homework**

Some parents (Appendix D, Table 50) have also pointed out the need for materials (textbooks) to be taken home so that children can be engaged actively in the evening, or on holidays. Parent responses in interviews and focus group discussions suggest that a considerable number of ABL students' parents are yet to be sensitized about what is happening in ABL classrooms and why there was no need to do homework by ABL students. They continue to feel that their children should be given homework. A few parents during interviews also showed a preference towards getting progress reports<sup>29</sup> (Appendix D, Table 50).

### **Summary**

ABL has led to the emergence of a high level of self-confidence among many students. Students have no fear for teachers or examinations, as each child is tested based on what he or she has learnt. ABL methodology promotes self-learning among students and provides ample opportunities to enhance their creativity. Students have become relatively more responsible. Parents reported that with the advent of ABL, children no longer needed to carry heavy loads of textbooks to and from school. ABL increased teachers' involvement in classroom practices and improved the organisation of curricular activities. Some teachers are now highly motivated, and possess a positive attitude towards the initiative. The changed teaching situation where the teacher sits with students on the floor may be contributing to better student-teacher relationships; however, some teachers report that they are experiencing health

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<sup>29</sup> In this regard, a circular was sent to all schools implementing ABL to give progress reports based on the achievement chart (circular no.281/a2/ssa/2007, dated 06.06.2007 issued by State Project Director). However, it appears that schools do not follow strictly this circular guideline.

problems from sitting on the floor for extended periods. Another outcome of the ABL classroom process was better cooperation among students, and between students and teachers.

However, ABL has also led to increase in teachers' workload. Besides meeting the data requirements of the SSA system, teachers need to give attention to each student in the class throughout the day. They are not able to give sufficient attention to all students in general, and particularly to those who move very slowly in the learning ladder. They also felt a sense of monotony in the ABL system. Another negative outcome reported was that parents were still not aware of ABL classroom processes, and some parents demanded homework, textbooks and progress cards from schools.

## Section 4

# Discussion and Recommendations

## SECTION 4: DISCUSSION AND RECOMMENDATIONS

In this section, key findings are discussed for each of evaluation question, and recommendations based on the findings are offered. Limitations of the current study and suggestions are also provided.

### 4.1 Key Findings

#### 4.1.1 Is ABL being implemented as intended? If not, why not?

The training of teachers and other educational functionaries is crucial for the implementation of the ABL programme. All teachers and BRTEs reported that they received training in important aspects of ABL, such as: (i) Use of ABL cards and organization of ABL classrooms; (ii) Development and use of self-learning materials and (iii) Use of audio and video CDs, craftwork, puppet show, *villu pattu* and handwork. All respondents perceived themselves to be highly competent in ABL. However, a few challenges were faced by trainers during the training of ABL, most of which were reported from schools in later stages (phases III and IV). These included lack of cooperation from teachers, and their resistance in accepting the ABL methodology. Also, teachers were apprehensive that parents were dissatisfied with the new initiative. Teachers also reported enhanced workload and their inability to sit on the floor amongst students due to health problems. All these factors might have resulted into poor attendance and participation of the teachers during training programmes as reported by the BRTEs.

Teachers and BRTEs had good knowledge and awareness of the ABL methodology. However, results also suggested that they needed improvement in the following areas: 1) Teachers' role with different groups, 2) Self-learning material, 3) ABL cards and the use of supplementary material, 4) Purpose of teacher cards, and 5) The sequence of activities. This lack of knowledge of teachers and BRTEs in the same areas reflects that these areas need to be particularly strengthened during the training of master trainers and BRTEs in order to build the capacity of teachers.

The awareness of VEC members is a prerequisite towards the successful implementation of the ABL programme. However, results suggested that VEC members had limited knowledge of the features of ABL, and it appeared that they were not fully aware of the ABL programme. Well-designed awareness programmes for VECs and other community members need to be planned and organized as an integral part of the ABL programme.

Findings pointed to several specific areas related to classroom organization for which ABL implementation could be improved, especially in phase III and IV schools: availability of sitting space for children, arrangement of trays with logos pasted on them, display of materials and the accessibility of trays and ladders to students.

A large number of teachers (56%) did not feel the need for additional material other than that supplied under ABL, whereas approximately 44% teachers felt that additional material was required by them during the teaching learning in ABL classrooms. It is also important to note that 13% of teachers reported spending their own money to procure additional material. Variation in the classroom organization scores suggests that there still exists scope to improve it in phase III and IV schools.

In summary, results suggested that the ABL initiative was not being fully implemented as intended, as far as training of teachers, BRTEs, VEC members is concerned. The challenges in training faced by the BRTEs, the problems faced by teachers and the lack of knowledge and awareness of teachers, BRTEs and the community reflect this aspect. Implementation gaps were also observed in infrastructural aspects such as lack of space, provision of cards and inadequacy of additional support material.



#### 4.1.2 To what extent are ABL support systems (curriculum, teacher training and support by BRTEs) effective in improving classroom practices?

BRTEs and teachers play an important role in making the ABL classroom processes effective. In general, the teachers and BRTEs demonstrated a positive perception towards ABL methodology, especially those working in Chennai. The classroom processes and classroom practices were found to be better in Chennai schools as compared to phase III and IV schools, with Coimbatore having the lowest score in this regard. This could be due to a longer exposure of Chennai teachers and BRTEs to ABL.

Most teachers were also satisfied with different dimensions of training: training duration, methodology followed for training, quality of training materials, follow-up activities and competency of trainers. They also mentioned using a variety of modes and innovative ways during ABL training. Many teachers were of the opinion that follow up activities were weaker in phase I and II schools as compared to those in phases III and IV schools. Some responses to enhance the duration of training were also received from Coimbatore teachers and BRTEs. Content of the training material was rated as 'good' by the experts; however, experts also expressed a need to make the training material more contextually relevant.

Educational experts, teachers and students have indicated that ABL enabled the teaching learning process to move away from textbooks, and use a variety of learning materials. Teachers also considered learning at one's own pace as the most innovative aspect of ABL. Large sections of ABL (classes 2 to 4) and non-ABL (class 5) students had positive perceptions about various aspects of ABL. Students reported that learning through cards was not only joyful but also allowed them to work with attractive pictures and learn through playful activities. Students preferred colourful small sized cards with big sized fonts, having pictures related to daily life. The majority of children preferred small sized cards with a bigger font. They also indicated their liking for colored cards having pictures of different animals. Learning based on competencies and milestones gave students a sense of learning, and made them happy and joyful. While most of the younger children preferred learning through ABL cards but when they moved to higher classes, their preference shifted to learn through textbooks.

Most teachers considered the evaluation under ABL as appropriate, however, a section of students reported fear while attempting evaluation activities. Some of them also reported that they were controlled by teachers while working with ABL groups, and they were not able to access additional materials to learn. This was reported mainly by students studying in urban schools.

Generally, the teachers were of the view that the supplementary reading materials made available in ABL classes provided scope for extended reading. According to the experts the cards are good in terms of the content and physical aspects, and the activities of the cards "*stimulated different processes of learning (observation, thinking etc.) among children; using a number of local examples in cards; as per the 'age appropriateness' of children*". However, experts also pointed out some inaccuracies in illustrations of some cards. It was also suggested that activities in ABL cards should be linked to children's daily life. They were of the view that the potential of some cards for learning cannot be fully exploited until the teachers take the extra effort to provide the children with concrete experiences outside the classrooms/schools. In some cases drilling and mechanical ways of learning were also reported. A few teachers also reported difficulty in understanding cards. Many of them were not in full agreement with the experts' views about ABL cards, in terms of enhancing the thinking capacity, sequencing of cards and milestones and the activities being appropriate, simple and easy. If we go by the views of the teachers' alone there were concerns about the quality dimensions of ABL cards. Other problems such as lack of cards, inability of students to understand the content of cards, difficulties in working in groups and inability to clear children's doubts were also reported by teachers. These responses were mostly received from Coimbatore schools.

Most of the supplementary material was rated from *satisfactory to excellent* by experts. Experts were also of the view that use of TV/ CDs and other audio players enhanced the richness of the ABL pedagogy. However, some of the drawbacks reported related to lack of sufficient supplementary material for class I and IV students. Poor quality of supplementary material in terms of the content, language used, illustrations, font size and some factual inaccuracies were also reported. Concerns about the safety aspects of Mathematics' kit were also raised.

#### **4.1.3 Has ABL improved learning levels of children in different subject areas? If so, to what extent?**

The achievement of children throughout the state was found to be above 70%; however because there was no comparison group or counterfactual in this study, this high level of achievement cannot be attributed to the ABL programme. The comparison carried out in this study assessed whether those exposed to the programme for a longer time would have higher achievement compared to those exposed for a shorter time. Results did not support this assumption. Students in Chennai schools, who were exposed to the programme for a longer duration, were found to perform significantly better than students of Coimbatore schools, who were exposed to the programme for a shorter duration, except in class IV subjects of Tamil written and Environmental Studies. However, the performance of students studying in model and other schools was higher than their Chennai counterparts except in English Oral (Class III; Chennai students marginally outperformed their other school counterparts) and Tamil Oral (Class IV; Chennai students slightly outperformed their model and other school counterparts). Model school students performed better than students from other schools. This held true in all subjects except class IV Mathematics.

However, it is necessary to make a cautionary note about the socio-economic dimensions of students in these schools being different from one another. The first and second phase school students belonged to Chennai whereas their counterparts in the other two phases belong to a variety of localities spread across the entire state – big and small cities, towns and rural areas of Tamil Nadu.

Field visits and interaction with school teachers suggested that third phase or model schools were relatively better equipped than fourth phase schools. Some model schools were also used as cluster resource centers.<sup>30</sup> This could be one of the reasons for better performance of students studying in phase III schools.

Another aspect that could have contributed to the difference may have been what the field staff and study team members have noted while conducting the study: 'teaching to the test'; i.e., preparing students for achievement tests by focusing instruction on test content.

These results demonstrate a need for greater understanding of these schools in different phases, the socio-economic details of children and the context. Adequate evidence was not available for this study on any of these aspects.

Differences in achievement levels were also found between rural and urban students, and between girls and boys. This suggests that urban students and boys may have different needs that are not being met.

An analysis of class III and IV student performance in achievement tests conducted by NCERT at different points in time (i.e. 2004 and 2008), before and after the implementation of ABL, indicate improvements in students' performance in three subjects – Tamil, English and Mathematics.

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<sup>30</sup> Cluster Resource Centres (CRCs) are schools in which teachers located in a cluster come together for receiving training. In fact it is the lowest level of Trainers that use CRCs for demonstration purposes. The headmasters of these schools are designated as CRC supervisor and hence facilitate the functioning of CRCs in Tamil Nadu.

#### 4.1.4 What other (non-academic) outcomes are attributable to ABL?

Qualitative data point to several non-academic outcomes associated with the ABL initiative. These include: greater self-confidence and less fear of teachers and exams among students; improved student-teacher relations; better cooperation among students; increased teacher involvement; and a greater focus on child-centered teaching and learning. One unintended negative outcomes reported included increased teacher workloads. A few teachers also reported developing health problems due to sitting on the floor for long hours.

In traditional classrooms, children usually sit in rows and columns with their hands folded and are not allowed to talk unless asked a question by the teacher; the teacher's voice is usually loud and confident whereas the children's voices are soft and hesitant. Traditional classes consist of a non-stop 45-minute lecture, and then questions to test comprehension, where four or five children usually answer while the rest of the children feel ashamed for not knowing the answers. This type of classroom was often linked to student non-comprehension and fear, and often led to dropouts. In traditional classes, if a child is absent from school due to ill health for a week, there was no way to catch up with lessons. In tests and examinations students conducted either passed or failed. The traditional classroom is often full of fear. In contrast, data from this study indicates that ABL methods have a positive impact on students, reducing their fear of teachers and examinations, and increasing their self-confidence. This may be due to the fact that in ABL children are able to progress at their own pace, get help from teachers and peers, and are only tested on what they learn in ABL cards. Data also indicated that ABL students have become relatively more responsible. This may be due to the features of ABL, which include self-directed learning and progressing through card activities. This study also found that ABL was associated with improved levels of cooperation among students and between students and teachers. This also may be a result of ABL classroom processes.

Data indicated that ABL led to greater levels of teacher involvement in classroom practices, better classroom organization and improvements in existing classroom practices. Some teachers also became more motivated and have undergone a positive attitudinal change. Teachers reported that teaching students by sitting with them led to better student-teacher relationships.

ABL teachers reported that their workload had increased. This may be due to intended classroom processes and scaffolding<sup>31</sup> activities required to be followed in ABL. The non-ABL teachers have relatively more freedom to organize their classroom practices and can plan to deal with a variety of students and their learning level. ABL teachers, on the other hand, are required to give attention to each student working on ABL cards. It is impossible in ABL to give attention to all students at one time; rather the teacher must give attention to each student by working with each group. Some teachers found this to be monotonous. Students will be working on different ladders and milestones, and teachers will have to introduce different concepts to each student as the cards each student will be using will be different. The pace of every student's learning may vary as well. The teacher needs to assist students in groups, monitor their work, and help students who have doubts. Besides teaching every student, teachers have to record the milestones completed by each student in each subject. For younger students, in the end of each subject period teachers are required to note down the logo and serial number of card they have completed (otherwise students may not be able to recall which card they completed on the previous class). The teacher also has to monitor students working with weather charts and health charts. ABL teachers are also required to sign and display the creative works done by students. Besides these, they are required to do a variety of activities as required in the side ladder activities. Some teachers also expressed that they find it inconvenient to sit on the floor with students. Because of all of these responsibilities and concerns, teachers may not be able to give sufficient attention to all students in general and particularly to those who move very slowly in the learning ladder.

31 Providing support to promote learning when concepts and skills are being first introduced to students. It includes direct or indirect instructions, specification and sequencing of activities, provision of materials, equipment and facilities. Effective scaffolding makes it easier for the learner to undertake a task successfully and thus expands the possible learning activities and experiences.

## 4.2 Recommendations

Based on the findings from this study, the following recommendations are offered for consideration:

- More effort should be made to understand teachers' resistance/problems in the acceptance of the ABL methodology and address their issues and concerns with regard to increased workload.
- Make the following changes with regard to training of teachers and BRTes:
  - Training should be strengthened in the following areas: teachers' roles with different groups; competence in organising ABL classrooms/activities; self-learning materials; ABL cards and the use of supplementary learning materials; teacher cards; and the sequence of activities. Emphasis should also be given to improve the classroom processes during training programmes, in order to help the teachers use a child-centred approach during the ABL teaching-learning.
  - Duration of training may be enhanced as per the needs of the teachers, and regular follow-up of training should be undertaken.
  - Training in teaching of Mathematics and English both in content and methodology should be organized regularly.
  - Training materials should be adapted to the local needs and context.
- Advocacy programmes need to be organized for creating awareness among parents, community members and VECs about various aspects of ABL methodology and its different aspects such as no examinations, no homework.
- Make the following changes with regard to ABL material:
 

Improve the quality of supplementary learning materials in terms of content, language used, illustrations, font size,

  - and factual inaccuracies. For example, the content of the ABL activities should be reviewed to rule out the elements promoting rote learning and include items that enhance the thinking capacities of children. Activities given in ABL cards should also be linked to children's daily life, and children should be given more concrete learning experiences outside the classroom.
  - Ensure availability of additional/supplementary materials in order to organise ABL activities effectively. The grant meant for Teaching Learning Material (TLMs) may be given to teachers in a timely manner so that they can procure supplementary/additional materials required for organising ABL classrooms.
  - Allow for flexibility to use textbooks along with the existing ABL material during school.
  - Items of the Mathematics kit should be examined to increase their safety for children.
- Strengthen the child-friendly aspects of ABL suggested by the results of this study, including that it has enhanced students' self-confidence, removed the fear of teachers and examinations, and reduced the heavy load of bags.



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# Appendices

## Appendix A: Grading of Schools Based on ABL Classroom Processes

District:

Date of visit:

Block:

School Name:

S. No	Observation to be made on the following points on availability of Hand ware in use & children's' activity	In the Expected level
		Yes / No
1.	Availability of Low-level Block Board, its usage, Display pandal, availability of trays with logos affixed for keeping learning cards and almira's for keepings the trays and in proper use.	
2.	Whether the children are able to identify the logos in ladder and pick the appropriate card from the tray and sit in the group noted in the card and involve themselves in activity.	
3.	Whether the group cards are placed on the mat and multi-grade children are seated in the group with their learning cards and doing the activities.	
4.	One card alone is used by the teacher for all children for chorus learning.	
5.	Children are able to identify the logos and point out symbol and number on the cards	
6.	Children are able to pick out the cards already to the question given in the cards learnt and answer	
7.	The low level black board, note books and work books are used by the children for writing practices during learning activities.	
8.	Children's achievements are recorded by the teacher in the achievement chart on completion of each mile stone and activities done by the children are kept in students' folio.	
9.	Enough space is made available in the low level black board to all children for writing practices.	
10.	Childrens' creativity, drawing, painting and collection of materials are displayed in the Pandal with their names.	
11.	Children record their daily attendance by themselves.	
12.	Daily weather condition is discussed by the children and recorded in the weather chart.	
13.	Health chart is in practice to concentrate on health and hygiene of child.	

### Awarding of Grade

1. All the 13 points are Yes' A
2. 2nd point and any 7 out of the remaining points are yes B
3. If point number 2 is not yes C

Signature of Visiting Officer

## Appendix B: Evaluation Framework for Activity Based Learning

Evaluation Questions	Indicators	Data sources	Methods
1. Is ABL being implemented as intended? Why or why not?	<ul style="list-style-type: none"> <li>Knowledge, skill and awareness about ABL amongst education functionaries</li> <li>Classroom organization</li> <li>Learning materials available and used</li> <li>Participation of children</li> </ul>	<ul style="list-style-type: none"> <li>Classroom</li> <li>Teachers</li> <li>Educational functionaries (state, district, block and school)</li> <li>Community members</li> <li>Reports and documents</li> </ul>	<ul style="list-style-type: none"> <li>Observation</li> <li>Interviews</li> <li>Focus Group Discussion</li> </ul>
2. To what extent are ABL support systems (curriculum, teacher training and personnel- CRCs, BRCs and teacher educators) effective in improving classroom practices?	<ul style="list-style-type: none"> <li>Curriculum</li> <li>Activity cards</li> <li>Training process and design</li> <li>Role of functionaries –Teacher Educators</li> <li>Classroom practices</li> </ul>	<ul style="list-style-type: none"> <li>Curriculum</li> <li>Teachers</li> <li>Defined roles of functionaries</li> <li>Training material / modules</li> <li>Educational functionaries</li> </ul>	<ul style="list-style-type: none"> <li>Interviews</li> <li>Observation</li> <li>Questionnaires</li> <li>Document Analysis</li> </ul>
3. Has ABL improved learning levels of children in different subject areas? If so, to what extent?	<ul style="list-style-type: none"> <li>Achievement / performance in different curricular areas (Tamil, English, Mathematics and EVS) at class 3 and 4 levels</li> </ul>	<ul style="list-style-type: none"> <li>Students</li> </ul>	<ul style="list-style-type: none"> <li>Achievement test</li> </ul>
4. What are the major outcomes attributable to ABL?	<ul style="list-style-type: none"> <li>Student motivation</li> <li>Community acceptance</li> <li>Teacher motivation</li> <li>Enrolment</li> <li>Attendance</li> </ul>	<ul style="list-style-type: none"> <li>Students</li> <li>Teachers</li> <li>Community members</li> <li>Educational functionaries</li> </ul>	<ul style="list-style-type: none"> <li>Observation</li> <li>Interview</li> <li>Focus Group Discussion</li> </ul>

## Appendix C: Items and Competencies of Achievement Tests

**Table 1: Items and Competencies in Tamil and English (Written) Tests**

Competency	No. of items (Tamil)		Competency	No. of items (English)	
	Class 3	Class 4		Class 3	Class 4
1. Grammar	9	20	1. Grammar: parts of Speech	-	5
2. Logical Reasoning	6	3	2. Grammar: Structure	10	10
3. Reading	3	3	3. Logical reasoning	6	2
4. Punctuation	-	1	4. Reading with understanding	4	-
5. Vocabulary: Opposites	2	2	5. Spelling and phonology	9	
6. Vocabulary: Understanding	20	10	6. Vocabulary: Recognizing and understanding	11	19
7. Spelling	-	1	7. Vocabulary: Rhyming	-	1
			8. Vocabulary: Opposites	-	2
			9. Punctuation	-	1
Total	40	40	Total	40	40

**Table 2: Items and Competencies in Environmental Studies Tests**

Competency	No. of items		Competency	No. of items	
	Class 3	Class 4		Class 3	Class 4
1. Air Related	2	-	10. Nutrients	5	-
2. Animals and birds	4	9	11. Occupation	4	1
3. Civilization	4	3	12. Places	2	2
4. Festivals	-	6	13. Plants	6	3
5. Food chain	3	1	14. Properties of Matter	-	4
6. Good behavior	4	2	15. Use of fuel	1	-
7. Habitat	3	3	16. Seasons	-	1
8. Insects	1	-	17. Weights	1	-
9. Inventions	-	2	18. Sources of energy	-	1
Total				40/ 38	40

**Table 3: Items and Competencies in Mathematics Tests**

Competency	No. of items	
	Class 3	Class 4
Addition	7	6
Comparison of numbers using symbols	1	2
Currency	2	4
Fractions	1	1
Division	-	1
Multiplication	5	4
Number system	11	8
Ordering Numbers	1	2
Real Life Based Problems	4	2
Shapes	1	1
Subtraction	4	5
Time	3	4
Total	40	40

## Appendix D: Analysis Tables and Descriptions

Various aspects related to teachers, schools and BRTEs which work either directly or indirectly as ABL support system were used as independent variables.

Independent variables used in the model are associated with maturity of the ABL initiative, teachers' total teaching experience and experience in working with ABL initiative, age (as a proxy for professional experience) their workload (number of schools allotted per BRTE), teacher availability (number of students per class, class size, organization of ABL classrooms) and composite scores of teachers' and BRTEs' perceptions on ABL competencies and on ABL methodology. Two dummy variables are included to know whether or not the maturation of ABL implementation (phases I, II, III and IV) influences the effectiveness of ABL classroom processes. Classroom process scores of Chennai schools have been treated as a constant. The details of the independent variables are also given below:

**Table 1 (A): Description of Variables**

Name of Variable	Details	Type of Variable	Estimation details
totalexp	Teaching experience of teachers	Years (Numeric)	Total teaching experience of teachers in years
ablexp	Teachers' experience in ABL	Years (Numeric)	The duration of years teachers have worked with the ABL initiative. In each school, two teachers gave the details and the mean value of two teachers' ABL experience in years is calculated for each school
brteage	Age of BRTes	Years (Numeric)	Details of age (in years) collected from BRTes interviews. The mean age was estimated based on the details provided by these BRTes.
sclalotbrte	Number of schools allotted to BRTes ()	Numeric Score	This number was reported by each BRTe interviewed
brtpercablmet	BRTes' perception score on ABL methodology	Numeric Score	Mean score of BRTes perception on ABL methodology used in questionnaire for teacher educators.
brtspcom	BRTes' self perception score on ABL competency	Numeric Score	Mean score of self perception on ABL competency used in questionnaire for teacher educators
tpercablmet	Teachers' perception score on ABL methodology	Numeric Score	Mean score of self perception on ABL competency used in questionnaire for teachers
tspcom	Teachers' self perception on ABL competency	Numeric Score	Mean score of teachers' self perception on ABL competency used in questionnaire for teacher educators
stdpercla	Number of students per class	Numeric	It is based on the school data. All the students studying in classes 1-4 were divided by the number of classrooms available for ABL implementation
ablorgdummy	Organization of ABL classrooms	Numeric Score	Classrooms in which students of classes 1 to 4 sit together are treated as 1 and other ways of organization of classrooms are treated as 0
modschdummy	Model Schools	dummy	Sample schools in which ABL was implemented in phase III were given 1 and others were given 0. Coimbatore city schools were excluded
othschdummy	Other Schools	dummy	Sample schools in which ABL was implemented in phase IV were given 1 and others were given 0. Coimbatore city schools were excluded

School was taken as the unit of analysis. Accordingly mean values for competency scores of teachers, BRTes, classroom process scores of ABL classrooms were estimated at the school level (n=280).

The following is the simplified linear regression model proposed.

$$Y = \alpha + \beta_1 \text{totalexp} + \beta_2 \text{ablexp} + \beta_3 \text{brteage} + \beta_4 \text{sclalotbrte} + \beta_5 \text{brtpercablmet} + \beta_6 \text{brtspcom} + \beta_7 \text{tpercablmet} + \beta_8 \text{tspcom} + \beta_9 \text{stdpercla} + \beta_{10} \text{othschdummy} + \beta_{11} \text{modschdummy} + \beta_{12} \text{ablorgdummy} + U_i \dots \dots (1)$$

Where Y refers to dependent variable,  $\alpha$  refers to constant,  $\beta_1$  to  $\beta_{12}$  refer to coefficients of the independent variables and  $U_i$  refers to error term.

One of the assumptions of the linear regression model was that 'there is no exact linear relationship among the independent variables, which is termed as multi-co-linearity. It may be difficult to establish whether data collected in the field survey is devoid of multi-co-linearity or not. The presence of multi-co-linearity may lead to difficulties in estimating the coefficients precisely or some expected influencing factors may become insignificant.

To detect multi-co-linearity, as a first step Pearson non-parametric correlation coefficients were estimated (Appendix D, Table 1(B)). They revealed a high correlation between two independent variables – ABL implementation score and classroom practices score (0.62). Three independent variables, experience of teachers in ABL, perceptions of teachers and BRTEs, were positively correlated to all the three classroom practice scores. They were also statistically significant at the 0.01 level. Six variables viz., teachers' total teaching experience, age of BRTEs, number of schools allotted to a BRTE, number of students per classroom, organisation of ABL classrooms and model school dummy appeared to have no significant relationship with even one ABL classroom process score.

Correlation coefficients help in identifying variables which are highly correlated. However, a high pair-wise inter-correlation among both dependent and independent variables is only a necessary condition for the existence of multi-co-linearity but is not sufficient. Also, the removal of variables from the model may lead to specification bias<sup>32</sup>. Unless it was essential or there is no specification bias, variables were neither removed nor replaced from regression functions in the present study. Since there was no variable having such a high correlation, no variable was excluded from the regression model.

The coefficients of independent variables were estimated using simple ordinary least square (OLS) method. While the coefficients of quantitative variables help in measuring their individual influence on classroom effectiveness, *ceteris paribus*, as noted in Gujarati (2003), the coefficients of dummy variables included in the models help in establishing the presence or absence of a 'quality' or an attribute of the dummy variable. The presence of dummy variables in a model with high levels of significance also reflects the fact that they, along with their base category, cause variations in the variables considered as indicators of effective classroom processes.

Step-wise regression was also used, as it is useful for selecting important variables among large numbers of potential independent variables and/or fine-tuning a model by including variables in or out of the model.

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32 Incorrect specification of the model used in the analysis.

**Table 1 (B): Pearson Correlation Coefficients of Dependent and Independent Variables**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.ABL Implementation Score															
2.Classroom Practices Score	0.388*														
3.Teacher-Student Behavior Score	0.622*	0.417*													
4. Teachers' Experience	-0.004	0.009	0.027	-0.009											
5.Experience of Teachers in ABL	0.197*	0.193*	0.214*	0.273*	0.121**										
6.Teachers' Perception on ABL Methodology	0.279*	0.208*	0.352*	0.290*	0.038	0.275*									
7.Teachers' SP on ABL Competency	0.089	0.048	0.146**	0.082	-0.006	0.152**	0.505*								
8. Age of BRTEs	-0.040	-0.030	-0.040	-0.056	0.119**	-0.071	-0.062	-0.146**							
9. No. of Schools allotted to BRTE	-0.032	0.035	-0.047	-0.034	-0.056	-0.037	-0.129**	-0.120**	-0.16*						
10.BRTEs Perception on ABL Methodology	0.296*	0.218*	0.278*	0.372*	0.038	0.155*	0.381*	0.187*	-0.063	-0.038					
11.BRTE SP on ABL Competency	0.203*	0.040	0.136**	0.180*	0.009	0.085	0.155*	-0.009	-0.062	0.041	0.357*				
12. No. of Students Per Classroom	0.016	0.024	-0.017	-0.025	0.003	-0.15**	-0.101	-0.034	0.087	-0.04	-0.137**	-0.11			
13. Other School (D)	-0.20*	-0.110	-0.20*	-0.198*	0.002	-0.085	-0.107	-0.065	-0.004	0.069	-0.154**	-0.08	0.09		
14. Model School (D)	-0.023	-0.033	0.021	-0.017	-0.100	-0.025	-0.126**	0.011	-0.016	-0.06	-0.089	-0.04	-0.05	-0.79*	
15. Orgnization of ABL Classes (D)	-0.039	0.028	-0.082	-0.001	-0.055	0.012	0.040	0.093	-0.095	0.001	-0.029	0.006	-0.07	0.096	-0.027

Notes: (\*)  $p < .000$  (2-tailed); (\*\*)  $p < .005$  (2-tailed). Numbers in column headings denote the serial number of variables in rows

**Table 2: Difficulties Faced by BRTes while Imparting ABL Training**

BRTes' responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III and IV)	Model Schools in other districts (Phase III)	Other Schools in other districts (Phase IV)	Total
1. No challenges	19.7	4.4	10.2	11.0	10.9
2. Insufficient learning materials	6.6	10.3	3.8	6.5	6.1
3. Lack of attendance for training	6.6	7.4	4.3	3.5	4.4
4. Making the teachers accept new methods	18.0	22.1	13.4	15.1	15.6
5. Lack of space	6.6	-	8.6	6.7	6.6
6. Lack of teachers' cooperation	6.6	35.3	24.7	22.3	22.9
7. Dissatisfaction of the parents	1.6	7.4	11.8	12.9	11.1
Irrelevant responses	34.4	13.2	22.1	18.3	20.2
No response	-	-	1.1	3.8	2.3
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	61	68	186	372	687
Total number of respondents	49	49	136	266	500

**Table 3: Percentage of Teachers who responded correctly to Awareness Questions**

Item no.	Chennai Schools (Phases I & II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1	83.3	57.7	64.5	49.3	58.9
2	100	99.2	100	99.0	99.4
3	95.9	96.9	90.3	94.6	94.1
4	97.5	88.5	97.7	95.1	95.1
5	100	100	100	98.5	99.3
6	97.5	98.4	93.1	91.2	93.6
7	81.0	74.2	85.6	85.7	83.4
8	96.7	97.7	99.5	98.8	98.5
9.1	97.5	95.3	97.7	95.9	96.5
9.2	89.2	94.6	95.8	93.9	93.8
10	79.0	23.0	44.3	42.1	44.9
11	27.3	58.5	61.3	58.5	54.9
12	98.3	93.8	96.3	97.3	96.7
13	99.2	97.7	98.2	99.5	98.9
14	99.2	98.5	98.6	97.8	98.3
15	95.9	89.1	83.3	81.7	85.2
16	89.3	35.4	50.5	52.1	54.4
17	84.4	41.5	63.6	52.2	57.9
Total respondents*	122	130	217	410	879

Notes: (\*) There is a minor variation in the number of teachers and BRTes who responded to each item



**Table 4: Percentage of BRTes who responded correctly to Awareness Questions**

Item no.	Chennai Schools (Phases I & II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1	89.8	58.7	67.1	67	68.4
2	100	100	98.7	98.2	98.7
3	98	89.1	94.3	92.7	93.3
4	100	93.5	99.4	96.3	97.3
5	100	100	99.4	99.3	99.4
6	100	78.3	91.1	91.2	90.9
7	95.9	76.1	86.7	89	87.8
8	100	100	100	99.3	99.6
9.1	100	97.8	96.8	97.8	97.7
9.2	100	91.3	81.6	80.6	83.7
10	98	37	61.4	61.9	62.9
11	8.2	63	65.2	65.9	60.1
12	100	97.8	98.1	97.4	97.9
13	95.9	97.8	98.7	97.4	97.7
14	93.9	93.5	98.1	96.3	96.4
15	89.8	67.4	77.2	72.9	75.3
16	100	47.8	63.3	66.7	67.1
17	81.6	60.9	56.3	51.6	56.7
<b>Total respondents (*)</b>	<b>49</b>	<b>46</b>	<b>158</b>	<b>273</b>	<b>526</b>

Notes: (\*) There is a minor variation in the number of teachers and BRTes who responded to each item

**Table 5: ABL Issues Discussed in VEC Meetings in Sample Schools (%)**

Issues	Chennai Schools (Phases I & II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Teachers explained about ABL in the meeting	41.5	10.8	43.2	41.3	38.9
2. Discussion about student learning in groups with cards	26.8	27.0	27.9	22.8	25.1
3. About low level black boards, students sitting on mats, students learn with understanding	17.1	2.7	9.9	14.3	12.2
4. About the individual attention given by the teachers to students	12.2	5.4	7.2	6.4	7.1
5. Discussion about giving extra training to CWSN	-	-	-	0.5	0.3
6. No discussion about ABL	2.4	43.2	9.9	8.5	11.6
Irrelevant response	-	10.8	0.9	3.7	3.2
No response	-	-	0.9	2.7	1.6
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Total number of responses</b>	<b>41</b>	<b>37</b>	<b>111</b>	<b>189</b>	<b>378</b>
<b>Total number of respondents</b>	<b>29</b>	<b>25</b>	<b>81</b>	<b>143</b>	<b>278</b>

Note: CWSN – Children with Special Needs

**Table 6: Creating Awareness among Villagers**

VEC Members' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Awareness not created	20.0	46.9	12.2	20.8	20.9
2. Awareness created through SHG, students and covering habitations	43.3	0.0	44.4	39.3	37.2
3. Awareness was created by us.	10.0	46.9	26.7	30.6	29.2
Irrelevant response	0.0	3.1	7.8	3.5	4.3
No response	26.7	3.1	8.9	5.8	8.3
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	30	32	90	173	325
Total number of respondents	29	25	80	143	277

**Table 7: Teachers' Views on Requirement of Additional Materials**

School Category	Number of teachers responded	Percent of teachers who felt that additional materials were required	Percent of teachers who did not feel that additional materials were required
Chennai Schools (Phases I & II)	60	45.0	55.0
Coimbatore City Schools (Phases III & IV)	49	20.4	77.6
Model Schools in Other Districts (Phase III)	158	44.7	54.1
Other Schools in Other Districts (Phase IV)	284	46.5	53.5
Total	552	43.5	56.0

**Table 8: Sources for Procuring Additional Materials**

Teachers' responses	Chennai Schools (Phases I & II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Teachers using their own money	22.6	12	15.2	9.9	13.0
2. Material supplied by PTA/VEC	14.5	2	2.5	3.9	4.5
3. Materials supplied by BRCs/BRTes	-	10	0.6	2.1	2.2
Irrelevant response	11.3	0	15.2	10.6	11.0
No response	51.6	76	66.5	73.6	69.3
Total (in %)	100	100	100	100	100
Total number of responses	62	50	158	284	554
Total number of respondents	60	49	158	284	551

**Table 9: Observations Regarding Classroom Structure and Organization**

School type	Number of classrooms observed	Percentage of classrooms in which				
		Sitting space for students is adequate	All logos were pasted on trays	All ladders and trays were accessible to students	Students sit in groups as envisaged in abl	Students' works are displayed
Coimbatore City Schools (Phases III & IV)	92	88	50	82.6	93.5	82.6
Model Schools in Other Districts (Phase III)	307	87.5	77.3	87	99.3	92.8
Other Schools in Other Districts (Phase IV)	592	83.6	82.1	88.8	98	90
Total	1111	86.2	79.4	88.5	98.1	91

**Table 10: Teachers' Views on Duration of Training (%)**

Teachers' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Duration is appropriate	85.0	85.2	79.1	80.2	80.8
2. Duration should be more	12.5	5.9	5.0	6.1	6.5
3. Duration should be reduced	0.8	4.0	1.6	2.4	2.2
4. Duration should be appropriate in all aspects	-	2.0	0.6	0.5	0.6
5. Duration should be more for English subjects	-	1.0	-	-	0.1
Irrelevant response	0.8	2.0	13.1	10.2	9.3
No response	0.8	-	0.6	0.5	0.5
Total responses	100	100	100	100	100
Total number of responses	120	101	320	576	1117
Total number of respondents	60	49	159	284	552

**Table 11: BRTEs' Views on Training on ABL**

BRTEs' comments	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Training duration is sufficient	86.8	44.2	60.9	60.8	61.8
2. Further training is required	7.6	17.3	10.6	9.3	10.2
3. Alternative strategy is required for slow learners	-	11.5	1.2	1.7	2.3
Irrelevant response	3.8	26.9	14.9	17.9	16.5
No response	1.9	-	12.4	10.3	9.2
Total	100	100	100	100	100
Total number of responses	53	52	161	291	557
Total number of respondents	49	46	158	271	524

**Table 12: Teachers' Views on Methodology Adopted in ABL Training**

Teachers' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Training methodology*	76.7	70.0	86.7	86.2	83.7
2. Methodology was effective	21.7	26.7	9.7	9.1	12.4
3. Need for change in methodology	1.7	-	1.8	2.7	2.1
Irrelevant response	-	3.3	1.2	1.4	1.4
No response	-	-	0.6	0.7	0.5
Total	100	100	100	100	100
Total number of responses	60	60	165	296	581
Total number of respondents	60	49	159	284	552

Notes: (\*) Demonstration; Villupattu & puppet show; discussion; drama; conference; games; Power Point presentation; use of audio-video materials; group learning.

**Table 13: Teachers' Views on Contents of ABL Training**

Teachers' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Training content*	88.9	55.8	86.7	83.1	82.3
2. Content was appropriate. No change required	9.5	3.9	5.5	6.3	6.2
3. Daily life related activities should be included	1.6	-	1.2	3.0	2.1
4. More training required for Mathematics and English	-	19.2	2.4	4.3	4.7
Irrelevant response	-	19.2	3.6	3.0	4.3
No response	-	1.9	0.6	0.3	0.5
Total	100	100	100	100	100
Total number of responses	63	52	165	301	581
Total number of respondents	60	49	159	284	552

Notes: ABL cards; Villupattu, puppet show; self learning materials; supplementary reader; logo introduction, use of charts self attendance; activities, binding wires and lower level blackboard.

**Table 14: Teachers' Views on Follow-up Activities of ABL Training**

Teachers' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Regular visits by BRTes	36.5	24.5	63.0	68.9	59.9
2. Meetings	28.6	8.2	9.1	6.8	10.0
3. Maintenance of records	4.8	8.2	7.3	5.1	5.9
Irrelevant response	30.2	59.2	20.0	18.6	23.7
No response	-	-	0.6	0.7	0.5
Total	100	100	100	100	100
Total number of responses	63	49	165	296	573
Total number of respondents	60	49	159	284	552

**Table 15: Teachers' Views on trainers (%)**

Teachers' responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Experts were competent	59.4	49.3	81.9	83.6	76.3
2. Handled the class with patience	21.9	25.3	5.3	7.1	10.4
3. Experts were experienced	18.8	22.7	9.4	7.4	11.0
4. Trainers have less knowledge and skills	-	-	-	0.3	0.2
Irrelevant response	-	-	2.9	1.3	1.5
No response	-	2.7	0.6	0.3	0.7
Total	100	100	100	100	100
Total number of responses	64	75	171	298	608
Total number of respondents	60	49	159	284	552

**Table 16: Teacher's Views on ABL Card Activities (%)**

Teachers' responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Activities are appropriate, simple and easy to understand	42.5	21.3	30.9	20.9	26.1
2. Need more activities	1.4	2.5	2.2	0.6	1.4
3. Activities may be reduced	2.7	3.8	3.9	2.1	2.9
4. Enhances students' learning skills and thinking capacity	26.0	28.8	44.2	50.6	43.5
5. Students learn with interest	2.7	15.0	6.6	8.2	8.0
6. Involvement is increased	6.9	12.5	5.5	2.7	5.1
7. Enhanced creativity skills	5.5	10.0	5.0	8.2	7.2
8. Activities are interrelated with each other	4.1	3.8	0.6	2.7	2.4
Irrelevant response	6.9	2.5	1.1	3.6	3.2
No response	1.4	0.0	0.0	0.3	0.3
Total					
Total number of responses	73	80	181	330	664
Total number of respondents	60	49	159	284	552

**Table 17: Teachers' Views on Sequencing of Milestones and Cards**

Teachers' responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Appropriately sequenced	82.0	85.2	52.2	45.3	55.0
2. Unable to complete on time	-	11.1	1.9	0.7	2.0
3. Need less number of cards for side ladders	1.6	-	-	-	0.2
Irrelevant response*	13.1	3.7	44.7	54.0	42.1
No response	3.3	-	1.2	-	0.7
Total	100	100	100	100	100
Total number of responses	61	54	161	289	565
Total number of respondents	60	49	159	284	552

**Table 18: Difficulties faced by Teachers in ABL Classes**

Challenges	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Lack of cards (many students are waiting for same cards)	21.0	30.0	14.6	16.6	18.4
2. Unable to keep the cards properly	1.6	18.9	7.6	6.7	8.2
3. Unable to understand the content of the cards	6.5	22.2	9.4	9.3	10.9
4. Difficulty to work in groups	9.7	10.0	5.9	5.1	6.5
5. Unable to clear the doubts	8.1	13.3	3.5	3.5	5.4
6. No problem	33.9	3.3	48.5	52.7	42.8
7. Ability to memorize has reduced	-	2.2	-	0.6	0.6
Irrelevant response	17.7	-	8.8	3.8	6.0
No response	1.6	-	1.8	1.6	1.4
Total	100	100	100	100	100
Total number of responses	62	90	171	313	636
Total number of respondents	60	49	158	284	551

**Table 19: Students' Ease of Handling Various Cards**

Students' views	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Easy to use big size cards	2	0.5	10.5	7.7	7.1
2. Big sized cards facilitate learning as they contain more materials	4.1	5.6	13.2	14.3	12.1
3. All cards are good	3.3	0	2.5	2.7	2.4
4. No difference in cards	0	0.5	0.2	0.4	0.3
5. Easy to handle small size cards	90.2	93.4	71.9	73.6	76.7
6. Difficult to handle card.	0	0	0.2	0.2	0.2
Irrelevant response	0.4	0	1.3	1.1	1.0
No response	0	0	0.3	0.1	0.1
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	246	213	612	1240	2311
Total number of respondents	239	199	553	1101	2092

**Table 20: Students' Preferences of Various Font Sized Letters**

Students' preferences of various sized letters	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
Small font	24.3	28.1	19.2	21.8	21.9
Medium font	19.7	18.1	15.5	17.6	17.3
Large font	43.5	50.3	49.0	46.5	47.2
Total	100	100	100	100	100

**Table 21: Students' Views about Various Graphics in Cards**

Students' views	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Choice of/ liking of color (Red/ Blue/ Yellow/ Different colors)	34.3	33.2	36.2	35.6	35.3
2. Choice of figure/ Mango/ Monkey/ doll	0.7	0	1.8	1.7	1.4
3. Cards having more pictures/ cards having more colors/ cards having pictures of people/ cards showing pictures of animals	32.5	33.3	31.1	31.6	31.8
4. Different shape cards	32.5	33.5	30.6	31.0	31.4
Irrelevant response	0	0	0.1	0.1	0.1
No response	0	0	0.2	0	0.1
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	683	591	1424	2928	5626
Total number of respondents	239	199	554	1100	2092

**Table 22: Teachers' Responses on Innovations in ABL Methodology**

Teachers' responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Use of Lower Level Blackboard	10.8	22.3	12.2	11.5	13.0
2. Use of self learning material	17.2	10.7	8.6	9.7	10.4
3. Students learn at their own pace	20.4	8.7	38.7	46.7	36.4
4. Doubts cleared by teachers/peers	3.2	3.9	2.7	3.8	3.4
5. Enhances creativity	12.9	32.0	21.6	16.1	19.3
6. Self attendance	16.1	7.8	8.1	5.4	7.7
7. Easy steps	11.8	3.9	5.0	3.8	5.1
8. No fear	2.2	6.8	1.4	1.9	2.4
Irrelevant response	4.3	1.9	1.8	1.3	1.9
No response	1.1	1.9	0.0	0.0	0.4
Total	100	100	100	100	100
Total number of responses	93	103	222	373	791
Total number of respondents	60	49	159	284	552

**Table 23: Teachers' Responses on the Appropriateness of the Evaluation Strategy Used In ABL.**

Teachers' Responses	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
Percentage of teachers who believed that the evaluation strategy was appropriate in ABL	95	81.6	87.4	89.4	88.8
Percentage of teachers who believed that the evaluation strategy was in/ not appropriate in ABL	5	18.4	12.0	9.9	10.7
Total	100	100	100	100	100

**Table 24: Teachers' Responses to why ABL Evaluation Strategy is Appropriate**

Teachers'	Chennai Schools	Coimbatore City Schools	Model Schools in Other Districts	Other Schools in Other Districts	Total
1. According to the students' milestone/ achievement level	68.3	34.5	79.6	73.6	70.8
2. Self evaluation	17.5	44.8	6.8	11.7	14.3
3. Evaluation is part of teaching learning process	4.8	19.0	5.6	10.4	9.3
Irrelevant response	7.9	1.7	6.8	3.3	4.6
No response	1.6	0.0	1.2	1.0	1.0
Total	100.0	100.0	100.0	100.0	100.0
Total number of responses	63.0	58.0	162.0	299.0	582.0

**Table 25: Percentage of Students who are Positive about ABL Aspects**

ABL Aspects	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Learning in ABL classroom	98.3	98.5	99.3	99.3	99.2
2. Finishing each logo/milestone	100	99.5	98.8	99.0	99.1
3. Do not Fear doing evaluation card activities	73.6	66.7	81.7	81.1	78.3
4. Teacher allow us to interact with other students freely	57.8	63.1	79.6	78.3	75.1
5. Feeling free to approach teacher to clear doubts	95.4	87.6	90.1	93.1	92.0
6. Getting reward / praise for moving to next milestone / higher level	97.8	91.8	96.1	93.0	94.3
7. Feel happy doing side ladder activities	100	88.3	96.7	96.2	96.0
8. Submitted creative work in the recent past	90.7	83.8	88.2	87.5	87.7
9. Getting help from teacher whenever required	99.6	99.0	99.7	99.3	99.4
10. Working with students of lower/higher classes	97.4	89.5	89.5	89.8	90.5
11. Learning from sources other than ABL cards	64.4	43.2	74.5	74.9	70.8
Total number of respondents	236	197	584	1178	2195



**Table 26: Learning in ABL Classrooms**

Students' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Learning is joyful/ easy to study	50.2	49.1	52.3	51.8	51.5
2. Participation in group activities (sitting with friends)	0.4	-	1.9	2.5	1.9
3. No fear of teachers / teachers are affectionate	1.1	2.0	0.9	0.5	0.8
4. Learn through play / pictures are attractive	48.3	48.9	43.0	44.4	45.0
5. More information on ABL is needed	-	-	0.6	0.6	0.5
6. Not happy with ABL	-	-	-	0.1	0.0
7. Like ABL	-	-	0.8	-	0.2
Irrelevant response	-	-	0.4	0.1	0.2
No response	-	-	0.1	0.1	0.1
Total	100	100	100	100	100
Total number of responses	462	405	1002	2030	3899
Total number of respondents	239	199	554	1100	2092

**Table 27: Perception of Students on Learning with the Help of the Teacher**

Source of assistance	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
<b>Non-ABL Students (class 5)</b>					
Independently	36	8	25.2	18.1	20.7
With the help of friend	12	22	21.9	29.7	25
With the help of teacher	52	70	52.9	52.2	54.3
Total	100	100	100	100	100
No. of students	50	50	119	249	468
<b>ABL Students (classes 2 - 4)</b>					
Independently	34.2	20.8	14.6	17.3	18.7
With the help of friend	23.5	14.6	26.9	25.0	24.3
With the help of teacher	42.3	64.6	58.5	57.7	57
Total	100	100	100	100	100
No. of students	149	144	383	768	1444
<b>All Students</b>					
Independently	34.7	17.5	17.1	17.5	19.2
With the help of friend	20.6	16.5	25.8	26.2	24.5
With the help of teacher	44.7	66	57.1	56.3	56.3
Total	100	100	100	100	100
Total number of respondents	199	194	502	1017	1912

**Table 28: Percentage of Students Who Responded That They Like To Learn Most from ABL Cards Rather Than Textbooks**

Class of Students	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
Class 5	52.9	57.1	57.9	62.6	59.9
Classes 2-4	90.5	83	85.9	89.2	87.9
All Students	81.3	76.3	79.1	82.6	80.9
Total number of respondents	209	190	511	1061	1971

**Table 29: Students' Responses on Why They Like ABL Cards or Textbooks**

Students' responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Prefer cards as we feel acquisition of knowledge and participation in activities is better this way	48.7	50.1	50.8	50.6	50.4
2. Prefer textbooks so that we can study and work with it at home	48.3	49.6	43.1	43.8	44.7
3. ABL cards are easy	0.9	0.3	1.9	1.9	1.6
4. Books are easier	2.2	-	3.5	3.3	2.9
Irrelevant response	-	-	0.6	0.2	0.3
No response	-	-	0.1	0.2	0.1
Total	100	100	100	100	100
Total number of responses	462	395	1035	2067	3959
Total number of respondents	239	199	554	1100	2092

**Table 30: Marks Scored by Students in Schools (in %)**

Class and Subject	Chennai city Schools (Phases I & II)	Coimbatore city Schools (Phases III & IV)	Model Schools in Other District Schools (Phase III)	Other Schools in Other Districts (Phase IV)	Total
<b>Class 3</b>					
Tamil Written	70	67.5	81.5	80.6	78.6
Tamil Oral	85.6	78.3	87.5	87.2	86.3
English Written	67.4	62.4	79	76.9	75.1
English Oral	72.9	53.1	74.3	72.4	71.2
Mathematics	60.5	55.5	75.1	73.6	71
Environmental Studies	67.8	63.5	79.8	79.2	76.7
<b>Class 4</b>					
Tamil Written	70	74.7	84.8	83.2	81.4
Tamil Oral	85.1	70.9	84.1	83.5	82.7
English Written	70.3	63.7	78	77.3	75.5
English Oral	74.6	65.6	78.7	76.5	75.9
Mathematics	65.8	59.5	76.1	76.3	73.6
Environmental Studies	71.2	73.4	82.9	82.4	80.5

Table 31: Mean Differences in Achievement Tests across Schools

Comparison of School		Class 3						Class 4					
		Tamil (written)	Tamil (oral)	English (written)	English (oral)	Environmental Studies	Maths	Tamil (written)	Tamil (oral)	English (written)	English (oral)	Environmental Studies	Maths
Chennai Schools	Coimbatore City Schools	1.25*	2.39*	2.28*	6.26*	1.84*	1.54*	0.69	5.96*	2.25*	3.27*	0.65	3.17*
	Model Schools in other sample districts	4.17*	0.56*	4.34*	0.64	4.15*	5.93*	4.78*	1.10*	0.83*	2.62*	4.35*	3.35*
	Other Schools in other sample districts	4.02*	0.15	3.29*	0.11	4.14*	5.30*	4.30*	1.32*	0.19	2.64*	4.49*	3.86*
Coimbatore City Schools	Model Schools in other sample districts	5.42*	2.95*	6.63*	6.90*	5.99*	7.47*	4.09*	4.86*	3.09*	5.89*	3.70*	6.52*
	Other Schools in other sample districts	5.27*	2.54*	5.58*	6.15*	5.97*	6.83*	3.62*	4.65*	2.44*	5.91*	3.84*	7.03*
Model Schools in other sample districts	Other Schools in other sample districts	0.15	0.40*	1.05*	0.75*	0.02	0.64	0.47	0.22	0.64*	0.02	0.14	0.51

Notes: Mean Difference is based on Tukey Honest Significance Difference (HSD method; (\*) -  $p < .000$ )

**Table 32: Mean Achievement of Students by Region**

Subject	Class 3		Class 4		Rural urban differences in mean achievement	
	Rural	Urban	Rural	Urban	Class 3	Class 4
Tamil Written	81	70.8	83.6	74.3	10.2	9.3
Tamil Oral	87.4	82.8	83.5	80	4.6	3.5
English Written	77.6	67	77.4	69.6	10.7	7.7
English Oral	73	65.6	77.6	70.6	4.5	7
Mathematics	74.2	60.7	76	65.7	13.4	10.3
Environmental Studies	79.4	68.2	82.5	74.1	11.2	8.4

**Table 33: Mean Difference and T-values for Rural and Urban Students in different subjects**

Subject	Class 3		Class 4	
	Mean Difference	t-value	Mean Difference	t-value
Tamil Written	4.06	5.594*	1.27	2.130**
Tamil Oral	1.29	3.378*	3.73	5.801*
English written	4.26	5.827*	1.53	2.823*
English Oral	2.23	3.219*	3.10	3.914*
Mathematics	5.37	5.951*	4.13	4.930*
Environmental Studies	4.50	5.927*	3.36	4.976*

Note: (\*) -  $p < .005$ ; (\*\*)  $p < .001$ . The data is based on the school level mean scores

**Table 34: Marks Scored by Students by Gender**

Subject	Gender	Class 3			Class 4		
		Rural	Urban	Total	Rural	Urban	Total
1. Tamil written	Males	79.4	69.2	77	82.1	72.1	79.7
	Females	82	71.8	79.6	85.3	76.5	83.2
2. Tamil Oral	Males	86	80.6	84.7	81.3	75.9	80
	Females	88.3	85.1	87.5	85.6	83.1	85
3. English Written	Males	75.8	65.1	73.2	75.5	66.9	73.4
	Females	78.8	68.7	76.4	79.3	72.2	77.6
4. English Oral	Males	77.8	69	75.7	75.1	68.4	73.5
	Females	80.2	73.8	78.7	79.7	72.6	78.0
5. Mathematics	Males	73.4	58.6	69.9	75	64	72.3
	Females	74.5	62.8	71.7	77	67.1	74.6
6. Environmental studies	Males	78.7	66.5	75.8	81.6	72	79.3
	Females	79.9	69.7	77.5	83.6	75.8	81.7

**Table 35: T-Values of Mean Marks of Boys and Girls in Different Subjects**

Class and Subject	Paired Differences		t-value	Degrees of freedom
	Mean (**)	Std. Deviation		
<b>Class 3</b>				
1. Tamil Written	1.05	3.58	4.85*	276
2. Tamil Oral	0.80	2.16	6.10*	273
3. English Written	1.28	3.56	5.96*	275
4. English Oral	0.89	2.86	5.21*	275
5. Environmental Studies	0.70	3.44	3.39*	274
6. Mathematics	0.75	3.84	3.21*	273
<b>Class 4</b>				
1. Tamil Written	1.47	3.45	7.01*	271
2. Tamil Oral	1.79	3.35	8.86*	272
3. English Written	1.69	3.42	8.21*	274
4. English Oral	0.97	2.42	6.62*	274
5. Environmental Studies	0.96	3.47	4.56*	271

Note: (\*) -  $p < .005$ ; (\*\*) based on the school level mean scores of boys and girls.

**Table 36: Achievement Levels of Class 3 and 4 Students in Tamil Nadu, 2004-2010**

Districts	Class 3			
	BAS - NCERT		MAS - NCERT	
	Tamil	Mathematics	Tamil	Mathematics
	2004	2004	2008	2008
Chennai	57.2	41.9	-	-
Coimbatore	-	-	62.8	48
Dindugul	-	-	83.3	82.6
Karur	-	-	90.3	85.8
Madurai	78.2	68.2	88.2	91.1
Perambalur	-	-	-	-
Pudukottai	-	-	72	66.3
Ramanathapuram	-	-	-	-
Thanjavur	-	-	83.5	79.7
The Nilgiris	-	-	-	-
Thiruchirapalli	-	-	-	-
Thiruvallur	-	-	-	-
Thiruvannamalai	-	-	83.4	78.3
Thirunelveli	-	-	-	-
Tamil Nadu	66.5	53.5	79.7	75.2
All India	63.1	58.3	67.8	61.9

Sources: NCERT (2008, 2010), Schoolscape (2009); PE- Current Programme Evaluation Study

**Table 37: Teachers' observations of the influence of the ABL programme on the Children: in school or out of school, in the ABL classes and others not in the ABL classes.**

Teachers ' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Improved creative thinking	3.80	19.01	10.24	10.15	10.84
2. Can undertake self learning	20.25	10.74	7.87	9.65	10.26
3. Improved self confidence, boldness	8.86	15.70	11.42	10.64	11.42
4. Students complete the learning work in the school itself and hence no home work	2.53	3.31	3.54	3.47	3.38
5. Children are more active and involved	11.39	5.79	8.66	5.69	7.11
6. Improvement in reading skill among students	13.92	2.48	6.69	6.44	6.64
7. Improved attitude	6.33	11.57	5.91	6.19	6.88
8. Children are learning as per their pace and ability	3.80	0.00	3.94	2.23	2.56
9. No fear to approach the teachers	5.06	17.36	29.92	37.62	29.49
10. Improved self reliance in learning	10.13	6.61	3.94	4.21	5.01
11. Ability to memorize has improved	5.06	1.65	3.54	1.49	2.45
12. Depend more on others	0.00	0.00	0.39	0.25	0.23
13. Reading skill are poor	0.00	1.65	0.39	0.00	0.35
14. Ability to memorize has reduced	2.53	4.13	0.79	0.25	1.17
Irrelevant response	3.80	0.00	2.76	1.24	1.75
No response	2.53	0.00	0.00	0.50	0.47
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	79	121	254	404	858
Total number of respondents	60	49	159	284	552

**Table 38: BRTes' observations of the influence if any, negative or positive, of the ABL programme on the following: Children: In school or out of school.**

BRTes' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Improved creative thinking	15.58	6.25	10.95	11.37	11.06
2. Can undertake self learning	14.29	6.25	10.95	12.63	11.61
3. Improved self confidence, boldness	14.29	23.96	11.31	13.05	13.77
4. Students complete the learning work in the school itself and hence no home work	0.00	3.13	7.30	6.95	6.07
5. Children are more active and involved	3.90	8.33	9.85	7.79	8.13

6. Improvement in reading skill among students	9.09	12.50	6.20	13.26	10.74
7. Improved attitude	3.90	10.42	7.66	5.26	6.40
8. Children are learning as per their pace and ability	2.60	6.25	5.84	5.47	5.42
9. No fear in approaching the teachers	12.99	8.33	9.12	11.37	10.52
10. Improved self reliance in learning	5.19	5.21	5.11	2.74	3.90
11. Memory skills have improved	0.00	4.17	2.92	0.84	1.74
12. Depend more on others	0.00	3.13	5.11	1.89	2.82
13. Reading skills are less	1.30	1.04	1.82	1.47	1.52
14. Memory skills have reduced	1.30	0.00	1.46	2.11	1.63
Irrelevant response	15.58	1.04	3.28	2.11	3.47
No response	0.00	0.00	1.09	1.68	1.19
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	77	96	274	475	922
Total number of respondents	29	25	81	143	278

**Table 39: Community Members' observations of the influence of the ABL programme on the following:  
Schools and Classrooms**

Community Members' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Self learning, creative activities/creativity enhanced.	12.50	21.43	13.07	14.08	14.60
2. Cooperation among students	10.42	15.71	7.19	7.22	8.58
3. Self confidence of children has improved	16.67	8.57	3.92	6.14	6.75
4. Basic facilities are available in schools/improvement of infrastructural facilities	2.08	10.00	26.14	23.10	20.44
5. Cleanliness has improved/ neat & clean classrooms/attractive classes	25.00	20.00	26.14	23.83	24.09
6. Student attendance has increased	16.67	8.57	7.84	8.66	9.12
7. Teaching has been improved/kits are used	2.08	0.00	9.80	6.50	6.20
8. Lack of attention in groups/few students study.	2.08	10.00	1.96	2.53	3.28
9. Lack of teachers in schools	6.25	1.43	0.65	1.81	1.82
10. No basic facilities	4.17	0.00	1.31	1.08	1.28
11. Poor discipline/No discipline among students	0.00	0.00	0.00	0.72	0.36
Irrelevant response	2.08	2.86	1.31	2.17	2.01
No response	0.00	1.43	0.65	2.17	1.46
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	48	70	153	277	548
Total number of respondents	29	25	81	143	278

**Table 40: Teachers' views about learning through ABL approach**

Teachers' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Children highly motivated	18.18	15.57	19.38	10.65	14.53
2. Not motivated	0.00	2.46	0.78	0.43	0.74
3. Enhanced thinking capacity	17.27	24.59	18.60	18.91	19.37
4. Self learning is possible	21.82	28.69	37.98	41.96	36.84
5. Problem solving skills developed	2.73	11.48	6.98	10.87	8.95
6. Use of LLB	0.91	0.00	1.16	0.65	0.74
7. Doubts cleared by teachers/peers	3.64	5.74	3.49	3.70	3.89
8. Enhanced creativity	14.55	11.48	6.59	8.04	8.84
9. Self attendance	9.09	0.00	0.39	1.96	2.11
10. Easy & No fear	6.36	0.00	2.33	2.39	2.53
11. ABL is implemented through play-way method	0.00	0.00	1.55	0.00	0.42
Irrelevant response	3.64	0.00	0.78	0.22	0.74
No response	1.82	0.00	0.00	0.22	0.32
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	110	122	258	460	950
Total number of respondents	60	49	159	284	552

**Table 41: Parents' views regarding the advantages of introducing ABL**

Parents' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Easy and happy learning	44.44	35.90	42.65	39.00	40.11
2. Self thinking /self learning developed	11.11	15.38	10.66	10.22	11.02
3. Reading & writing capacity improved	12.28	12.82	14.45	13.78	13.68
4. Students come to school regularly	3.51	4.62	2.37	5.78	4.56
5. Decision making power improved	1.17	1.54	2.37	2.33	2.13
6. Learning skill improved	12.87	14.36	9.00	9.67	10.37
7. Confidence developed	6.43	10.77	4.50	4.89	5.63
8. Healthy competition among students developed	1.75	1.54	1.66	1.78	1.72
9. Neatness and discipline developed	0.58	0.00	0.47	0.56	0.47
10. Teacher – student relationship is good	0.58	0.00	0.00	0.22	0.18
11. There is no chance for children to miss any lessons	0.00	0.00	0.00	0.56	0.30
12. General knowledge improved	0.00	0.00	0.00	0.22	0.12
13. Good habits inculcated	0.00	0.00	0.00	0.33	0.18
14. Drawing skills improved	0.00	0.00	0.00	0.11	0.06
15. Memory power increased	0.00	0.00	0.00	0.11	0.06
Irrelevant response	2.34	2.56	6.40	5.33	4.98
No response	2.92	0.51	5.45	5.11	4.44
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	171	195	422	900	1688
Total number of respondents	135	125	329	703	1292



**Table 42: Teachers' views about innovation/improvement of classroom processes involved in ABL approach**

Teachers' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Use of LLB	10.75	22.33	12.16	11.53	13.02
2. Use of self learning material	17.20	10.68	8.56	9.65	10.37
3. Students learning at their own pace	20.43	8.74	38.74	46.65	36.41
4. Doubts cleared by teachers/peers	3.23	3.88	2.70	3.75	3.41
5. Enhances creativity	12.90	32.04	21.62	16.09	19.34
6. Self attendance	16.13	7.77	8.11	5.36	7.71
7. Easy steps	11.83	3.88	4.95	3.75	5.06
8. No fear	2.15	6.80	1.35	1.88	2.40
Irrelevant response	4.30	1.94	1.80	1.34	1.90
No response	1.08	1.94	0.00	0.00	0.38
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	93	103	222	373	791
Total number of respondents	60	49	159	284	552

**Table 43: Parents' observations regarding the influence of the ABL programme on Children: In school or out of school; ABL children or non ABL children**

Parents' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. No study burden (books)	18.54	24.38	8.46	7.72	11.03
2. Curiosity enhanced	20.53	13.43	22.64	24.82	22.43
3. Children have become more creative	29.80	21.89	24.88	26.25	25.69
4. High confidence level	13.25	23.38	14.43	11.40	13.85
5. Regular in going to school	1.99	5.47	7.46	7.36	6.64
6. Children getting individual attention	1.99	4.98	4.73	4.99	4.64
7. More fear in non ABL children	3.31	4.48	1.24	2.02	2.26
8. Non ABL students are studying well at home	3.31	0.00	0.00	0.12	0.38
9. Teacher and student relationships are good	1.99	0.00	0.00	0.12	0.25
10. No discrimination among children	0.00	0.00	0.50	0.24	0.25
Irrelevant response	3.97	1.99	12.69	10.69	9.46
No response	1.32	0.00	2.99	4.28	3.13
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	151	201	402	842	1596
Total number of respondents	135	125	335	700	1295

**Table 44: Community Members' observations regarding the influence of the ABL programme on children: in school or out of school, in the ABL classes and others not in the ABL classes**

Community Members' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Learning is easy and students are happy	20.00	0.00	14.44	12.57	12.65
2. Confidence level/Courage increased	62.86	62.50	61.11	64.57	63.25
3. Confidence level decreased/ not able to do all activities independently	0.00	0.00	0.00	2.29	1.20
4. No changes	2.86	0.00	8.89	0.00	2.71
5. Children take up more responsibility	2.86	25.00	11.11	7.43	9.64
Irrelevant response	0.00	0.00	1.11	2.86	1.81
No response	11.43	12.50	3.33	10.29	8.73
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	35	32	90	175	332
Total number of respondents	30	25	74	151	280

**Table 45: Teachers' observations regarding the influence of the ABL programme on the Teachers working with ABL classes and those who are not working with ABL classes**

Teachers' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. More work for teachers in ABL	21.13	25.30	15.35	11.60	15.18
2. Co-operation among teachers & students in ABL	28.17	7.23	43.07	46.41	39.14
3. Challenge for youngsters in ABL	1.41	3.61	2.97	2.21	2.51
4. Teachers in ABL teach with kit box & lab materials	1.41	0.00	0.50	2.49	1.53
5. Under ABL, teachers are getting more training	0.00	3.61	2.97	4.14	3.34
6. ABL teachers are interested in teaching	9.86	9.64	10.89	10.22	10.31
7. ABL teachers have patience	0.00	6.02	8.91	6.35	6.41
8. In the absence of regular teachers others can teach in ABL	0.00	1.20	0.00	0.28	0.28
9. Teaching according to their ability	5.63	4.82	1.49	1.93	2.51
10. ABL teachers have more work	2.82	16.87	3.47	4.97	5.71
11. ABL teachers are able to provide individual attention to children	19.72	20.48	6.93	6.63	9.61
12. Non ABL teachers are not able to provide individual attention to students	1.41	0.00	0.00	0.00	0.14
Irrelevant response	7.04	1.20	2.97	1.66	2.51
No response	1.41	0.00	0.50	1.10	0.84
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	71	83	202	362	718
Total number of respondents	60	49	159	284	552

**Table 46: Parents' views regarding the overall impact of the ABL scheme?**

Parents' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Reading/Writing ability increased	23.42	13.30	23.37	24.18	22.57
2. Self thinking level/self decision making improved	10.76	32.51	13.73	14.87	16.35
3. Children come to school regularly	4.43	6.90	6.27	7.26	6.70
4. Analytical skill enhanced	1.27	11.82	5.30	5.68	5.91
5. Good Teacher & Student relationship	3.80	0.00	3.13	3.52	3.02
6. Learn without fear /happy learning/group learning	47.47	27.09	26.02	23.38	26.80
7. Discipline improved	1.90	3.45	7.71	6.70	6.10
8. Poor reading and writing	0.63	0.99	0.48	0.34	0.48
9. Poor discipline in class room	0.00	0.49	0.24	0.00	0.12
10. Teachers are teaching well	0.00	2.96	0.00	0.23	0.48
11. ABL is a good method	0.00	0.00	1.45	1.02	0.91
12. Need books also	0.00	0.00	0.00	0.45	0.24
Irrelevant response	3.80	0.49	8.43	9.76	7.72
No response	2.53	0.00	3.86	2.61	2.60
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total of the responses	158	203	415	881	1657
Total number of respondents	135	125	333	705	1298

**Table 47: BRTes' observations of the influence of the ABL programme on the Teachers working with ABL classes and those who are not working with ABL classes**

BRTes' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. More work for teachers in ABL	10.14	12.07	16.67	14.29	14.37
2. Co-operation among teachers & students in ABL	34.78	15.52	10.10	12.67	14.37
3. Challenge for youngsters in ABL	0.00	0.00	1.01	1.08	0.86
4. Teachers in ABL teach with kit box & Lab materials	2.90	1.72	3.03	3.23	3.02
5. Under ABL, teachers are getting more training	4.35	1.72	13.13	15.36	12.50
6. ABL teachers are interested in teaching	8.70	13.79	12.63	9.70	10.78
7. ABL teachers have patience	2.90	3.45	4.55	4.58	4.31
8. In the absence of regular teachers others can teach in ABL	1.45	1.72	3.54	2.16	2.44
9. Teaching according to their ability	4.35	3.45	8.59	6.47	6.61
10. ABL teachers have more work	4.35	0.00	6.06	11.05	8.05
11. ABL teachers are able to provide individual attention to children	14.49	0.00	8.08	5.66	6.75
Irrelevant response	11.59	27.59	11.62	8.89	11.49

No response	0.00	18.97	1.01	4.85	4.45
	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
Total number of responses	69	58	198	371	696
Total number of respondents	49	49	137	271	506

**Table 48: VEC members' observations of the influence of the ABL programme on the Teachers working with ABL classes and those who are not working with ABL classes**

VEC Members' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. More work for teachers in ABL	0.00	9.09	12.07	6.73	9.21
2. Co-operation among teachers & students in ABL/ good relationships	36.36	20.45	21.55	25.48	24.69
3. Challenge for youngsters in ABL/ children are kept free to study	0.00	4.55	5.17	4.33	4.24
4. Under ABL, teachers are getting more training	3.03	2.27	4.31	5.77	4.74
5. Non ABL teachers work more	3.03	0.00	3.45	1.92	2.24
6. ABL teachers have more patience	3.03	18.18	12.07	9.13	10.47
7. In the absence of regular teachers others can teach in ABL	0.00	0.00	0.86	0.48	0.50
8. Teaching according to their ability	3.03	6.82	5.17	6.25	5.74
9. ABL teachers are able to provide individual attention to children	15.15	25.00	17.24	18.27	18.45
10. Both are same/ no difference	24.24	0.00	3.45	2.40	4.24
11. Not aware about ABL & non ABL teachers.	0.00	0.00	0.00	1.92	1.00
Irrelevant response	3.03	4.55	3.45	1.92	2.74
No response	0.00	9.09	4.31	6.73	5.74
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	5	28	128	240	401
Total number of respondents	29	25	81	143	278

**Table 49: Community Members' observations of the influence of the ABL programme on the Teachers working with ABL classes and those who are not working with ABL classes involved in the project**

Community Members' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Work load is heavy for ABL teachers	15.15	45.16	13.46	11.87	15.25
2. ABL teachers give individual attention to students/teaching through cards	69.70	0.00	32.69	36.07	35.14
3. Individual attention can't be given by Non-ABL teachers	6.06	0.00	3.85	6.39	5.17
4. Non ABL teachers are free/ teaching through books	0.00	22.58	7.69	7.76	8.27
5. Relationship between students and Non ABL teachers is not good	3.03	0.00	19.23	21.46	17.57
Irrelevant response	3.03	0.00	9.62	9.13	8.01
No response	3.03	32.26	13.46	7.31	10.59
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	33	31	104	219	387
Total number of respondents	30	25	74	151	280

**Table 50: VEC Members' observations of the influence of the ABL programme on the Community including parents**

VEC Members' Responses	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III & IV)	Model Schools in Other Districts (Phase III)	Other Schools in Other Districts (Phase IV)	Total
1. Community and parents are more supportive	36.96	18.18	42.11	47.67	41.18
2. Community members need more awareness	19.57	11.36	18.95	18.02	17.65
3. Demand for homework	8.70	11.36	6.32	5.81	7.00
4. Demand for textbooks	10.87	20.45	3.16	2.33	5.88
5. Demand for examination and progress cards	4.35	6.82	3.16	4.65	4.48
6. Uneducated parents are not accepting	6.52	9.09	1.05	2.91	3.64
7. They express that children do not learn at home	4.35	9.09	0.00	3.49	3.36
Irrelevant response	2.17	11.36	15.79	9.30	10.36
No response	6.52	2.27	9.47	5.81	6.44
	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
Total number of responses	46	44	95	172	357
Total number of respondents	29	25	81	143	278

## APPENDIX E: Item-Wise Analysis Of Achievement Tests And Questionnaires

### A. ITEM-WISE ANALYSIS OF ACHIEVEMENT TESTS

#### CLASS 3 TESTS

**Tamil written:** Amongst six items, on which students scored highest, three belonged to the understanding category; two were from applications while one fell under the knowledge category. Students got low marks on five items; out of which four were from the understanding category while one belonged to the knowledge typology. Few items on which children scored less required them to combine two words into one and make correct sentences out of jumbled words. Another item perceived to be difficult involved reading out of given passage and answering items related to it. Other difficult items focused on children having to recall properties of flowers and animal habitat.

**English written:** From amongst six items found simple by most students, four fell within the category of application while the other two belonged to the understanding typology. Application items found simple involved completing words by filling in missing letters, identifying and encircling the correct answer from given set of pictures. Out of six items on which students scored lowest, five fell in the application typology, while one was from the understanding category.

Items found difficult by children comprised items which required the use of pronouns and locating physical position of people and objects.

**Mathematics:** Students found items based on addition of single digit numbers, identification of shapes and place value easy. However sums involving addition and subtraction of three digit numbers, multiplication, fractions and understanding of weeks in a month were found deficient. Out of ten items on which children scored less marks, an equivalent number of items (n=4) were from knowledge and understanding categories while two were from the application category.

**Environmental Studies:** From the five items on which most of the students got high scores, four items belonged to the knowledge category while one was from the understanding typology. Out of six items on which students scored lowest, an equivalent number of items (n=3) were from application and understanding typologies. Few of these items involved making distinctions between animals and birds, food items and various types of plants and trees, while others tested children's awareness of the food chain and that of behaviour considered appropriate in social settings.

#### CLASS 4 TESTS

**Tamil written:** Out of the eight items on which children scored highest, six items belonged to the application typology. While one was from the category of knowledge typology. Out of the six items on which children scored lowest, four items are from the knowledge typology. The other two fell into the application typology. Items found difficult by children comprised of items in which they were required to combine two words into one, fill in missing blanks and answer simple items after reading and comprehending a given passage.

**English written:** Most students found knowledge typology items easier than items from application and understanding typologies. Items based on reading of words from cards, short simple sentences and learning of plurals have largely been found simple. For example, multiple choice items which involve the identification of pictures and subsequent encircling of the best available option have largely been found easy. Items regarding identification of consonant clusters and words from word family have also been adjudged simple by most children.

However, many items from the application typology have been found difficult. Understanding of grammatical concepts such as pronouns and tenses has been found to be lacking in most students. Items from the application typology which involved locating the physical position of objects were also found difficult.

**Mathematics:** A few items of understanding typology which involved items based on addition, simple subtraction involving two digits, deciphering time from a clock, and working the abacus were found easy. However children were found ill equipped to solve items based on multiplication, division, and comparison of numbers. Out of the eight items on which children scored lowest, five items fell within the typology of understanding while the other three belonged to the category of application typology.

**Environmental Studies:** Items requiring knowledge of national festivals (eg. Children's day), ways of keeping the immediate environment clean (e.g. Disposing garbage appropriately), and naming of insect were found simple by most students. Items involving knowledge of habitat of species, uses of animal were also found easy by most. The same held true in the case of item which sort understanding of function of the plant stem. However it has also been found that understanding of inventions, national symbols such as the properties of the National flag; example colour and ways of living of prehistoric humans is lacking amongst most children. Geographical knowledge of prominent places within Tamilnadu was also low amongst the tested students.

Table 1: Item-wise scores of students of Class III in Tamil written

Item No.	% of students answered correctly				
	Chennai Schools (Phases I and II)	Coimbatore Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
1	94.20	89.70	95.40	96.00	93.83
2	78.30	80.70	89.30	90.00	84.58
3	78.70	77.20	87.30	87.90	82.78
4	73.10	77.10	87.10	85.30	80.65
5	82.80	77.50	89.10	88.80	84.55
6	90.90	86.70	92.70	91.50	90.45
7	83.90	84.10	90.60	89.00	86.90
8	74.30	78.20	86.80	86.80	81.53
9	82.00	76.00	86.40	87.10	82.88
10	89.90	83.70	92.60	93.90	90.03
11	81.90	80.50	90.80	90.30	85.88
12	74.60	69.30	83.70	83.80	77.85
13	70.20	65.70	81.90	79.50	74.33
14	77.40	68.70	90.00	87.40	80.88
15	71.00	69.30	82.60	83.50	76.60
16	56.10	59.80	75.60	72.70	66.05
17	38.80	41.40	62.30	59.60	50.53
18	76.30	74.40	84.60	84.30	79.90
19	64.80	67.20	81.20	78.70	72.98
20	76.70	61.20	83.50	84.90	76.58
21	59.30	58.10	78.30	78.60	68.58
22	66.50	55.80	78.70	79.00	70.00
23	82.50	78.80	90.00	88.60	84.98
24	77.20	75.60	86.10	87.00	81.48
25	75.10	66.90	80.60	79.60	75.55
26	53.00	53.30	74.20	69.30	62.45
27	68.50	65.70	77.40	78.20	72.45
28	49.50	47.90	63.70	63.30	56.10
29	71.40	67.60	84.20	84.10	76.83
30	59.90	58.60	79.60	79.80	69.48
31	63.80	68.20	80.70	83.00	73.93
32	70.90	61.60	74.70	73.90	70.28
33	68.70	58.20	71.30	72.30	67.63
34	66.10	63.00	76.70	80.30	71.53
35	61.60	54.10	71.40	71.50	64.65
36	79.60	65.80	81.00	80.80	76.80
37	60.60	59.60	75.20	77.60	68.25
38	71.40	70.10	80.80	76.80	74.78
39	54.40	54.00	62.10	61.00	57.88
40	58.60	58.60	71.20	70.40	64.70
No. of students	756	737	1445	2696	5634



**Table 2: Item-wise scores of students of Class III in English written**

Item No.	% of students answered correctly				
	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
1	74.70	81.30	86.30	84.00	81.58
2	87.40	89.90	93.10	91.70	90.53
3	65.10	74.60	85.60	83.30	77.15
4	66.20	63.60	83.10	83.10	74.00
5	46.10	47.80	62.00	63.70	54.90
6	76.50	65.60	81.50	80.20	75.95
7	79.20	74.90	85.60	84.30	81.00
8	80.40	79.70	86.90	86.40	83.35
9	71.60	67.50	81.40	78.70	74.80
10	65.20	51.90	72.20	69.40	64.68
11	78.20	76.10	85.60	83.60	80.88
12	72.70	64.00	78.90	80.90	74.13
13	78.10	69.90	85.00	82.40	78.85
14	75.00	72.80	84.30	81.60	78.43
15	53.00	53.20	73.90	69.90	62.50
16	81.30	48.60	81.70	77.60	72.30
17	79.80	54.70	84.90	81.60	75.25
18	52.10	49.90	70.40	69.10	60.38
19	57.00	54.60	71.30	66.50	62.35
20	72.80	71.40	83.50	77.70	76.35
21	65.60	58.60	80.20	74.70	69.78
22	73.30	71.30	86.10	82.60	78.33
23	76.30	81.50	91.60	87.40	84.20
24	36.40	47.90	65.80	55.70	51.45
25	69.00	63.20	78.60	74.30	71.28
26	81.20	72.40	86.80	85.30	81.43
27	72.40	60.70	81.00	74.00	72.03
28	53.50	52.40	71.10	64.50	60.38
29	69.80	65.40	80.90	79.40	73.88
30	77.70	67.60	79.00	78.10	75.60
31	75.10	64.40	79.10	77.30	73.98
32	69.70	65.00	80.10	78.10	73.23
33	67.50	68.20	81.80	77.00	73.63
34	40.30	35.30	60.50	60.20	49.08
35	53.70	41.30	64.40	64.40	55.95
36	39.80	25.80	57.40	56.40	44.85
37	76.90	74.30	86.20	82.60	80.00
38	55.80	42.90	71.80	68.60	59.78
39	81.20	67.60	82.20	81.60	78.15
40	89.70	71.40	89.80	89.00	84.98
No. of students	739	720	1428	2683	5570

**Table 3: Item-wise scores of students of Class III in Mathematics**

Item No.	% of students answered correctly				
	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
1	87.80	88.00	93.30	92.80	90.48
2	78.90	79.30	86.90	85.90	82.75
3	56.50	50.90	68.40	69.70	61.38
4	73.20	68.30	80.10	81.30	75.73
5	45.70	45.70	63.60	65.80	55.20
6	59.00	56.50	76.30	79.00	67.70
7	64.30	58.80	79.70	79.20	70.50
8	81.10	78.70	87.50	86.20	83.38
9	84.40	77.40	91.00	89.60	85.60
10	75.20	71.00	83.40	81.50	77.78
11	58.50	56.90	74.60	74.50	66.13
12	50.20	44.60	68.10	65.00	56.98
13	69.40	64.20	80.50	79.00	73.28
14	72.40	72.20	84.10	82.00	77.68
15	56.30	56.90	74.20	73.00	65.10
16	55.10	55.40	76.30	74.70	65.38
17	64.30	54.60	76.50	77.30	68.18
18	49.50	42.40	66.90	60.10	54.73
19	62.70	53.40	79.20	77.10	68.10
20	53.80	47.60	65.40	65.60	58.10
21	62.50	58.40	74.90	73.50	67.33
22	50.70	50.90	66.00	64.30	57.98
23	47.80	43.60	64.90	64.30	55.15
24	48.90	45.00	61.40	60.00	53.83
25	53.40	55.50	75.30	69.90	63.53
26	55.00	48.40	68.50	66.70	59.65
27	71.20	70.50	83.40	82.10	76.80
28	54.80	49.70	73.70	70.10	62.08
29	51.30	50.90	72.60	69.00	60.95
30	55.60	52.80	76.90	71.50	64.20
31	65.50	55.30	74.10	71.50	66.60
32	42.90	36.30	63.70	62.60	51.38
33	41.20	30.60	61.00	59.40	48.05
34	63.10	55.50	77.70	73.20	67.38
35	42.70	39.30	69.10	67.40	54.63
36	47.60	45.00	66.50	63.40	55.63
37	64.30	62.50	80.80	78.20	71.45
38	61.30	56.60	77.20	76.40	67.88
39	68.00	68.10	84.80	83.10	76.00
40	69.70	64.80	80.80	79.60	73.73
No. of students	757	731	1395	2669	5552

**Table 4: Item-wise scores of students of Class III in Environmental Studies**

Item No.	% of students answered correctly				
	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
1	83.50	76.50	86.50	86.10	83.15
2	76.00	72.40	82.90	83.30	78.65
3	72.70	69.40	79.70	82.20	76.00
4	72.50	75.80	83.40	82.30	78.50
5	88.60	87.60	93.00	92.70	90.48
6	83.50	82.70	91.10	90.40	86.93
7	81.50	83.90	90.60	91.20	86.80
8	91.30	90.30	94.10	94.80	92.63
9	70.00	67.70	82.60	81.70	75.50
10	63.50	58.00	70.10	71.00	65.65
11	63.90	58.30	72.20	75.60	67.50
12	77.70	80.80	85.50	84.50	82.13
13	70.00	70.80	78.60	78.80	74.55
14	70.90	70.30	79.40	79.80	75.10
15	65.60	53.80	75.00	76.60	67.75
16	53.50	45.40	68.20	69.60	59.18
17	57.90	48.30	70.60	70.80	61.90
18	42.50	35.10	61.70	60.10	49.85
19	62.40	54.80	74.60	75.60	66.85
20	51.40	49.90	67.60	71.20	60.03
21	65.00	59.90	79.20	82.50	71.65
22	68.10	54.80	73.40	71.50	66.95
23	69.30	65.80	80.40	81.30	74.20
24	76.30	66.20	84.00	82.60	77.28
25	80.60	72.70	85.20	84.90	80.85
26	79.40	75.20	87.90	87.00	82.38
27	66.60	72.40	81.50	83.10	75.90
28	79.20	70.60	86.10	84.80	80.18
29	73.50	66.50	83.40	81.00	76.10
30	64.80	62.40	75.80	74.40	69.35
31	78.80	64.50	82.90	81.10	76.83
32	48.70	41.10	62.30	60.10	53.05
33	73.20	68.20	84.00	85.00	77.60
34	69.80	66.30	83.10	81.40	75.15
35	77.00	64.80	85.90	85.60	78.33
36	70.80	61.40	81.90	81.70	73.95
37	66.20	55.80	79.40	75.60	69.25
38	58.90	52.70	79.50	79.40	67.63
39	69.10	66.90	82.90	80.30	74.80
40	45.60	56.10	68.60	71.70	60.50
No. of students	739	710	1395	2675	5519

**Table 5: Item-wise scores of students of Class IV in Tamil written**

Item No.	% of students answered correctly				
	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
1	92.90	89.20	96.60	96.30	93.75
2	73.50	71.70	86.80	81.80	78.45
3	76.20	81.30	88.90	88.00	83.60
4	83.30	87.90	92.00	90.90	88.53
5	88.40	90.60	94.40	93.80	91.80
6	85.80	84.30	91.80	90.60	88.13
7	83.20	86.30	91.70	91.70	88.23
8	83.20	89.20	92.80	91.50	89.18
9	89.90	89.10	94.40	93.30	91.68
10	52.30	61.10	74.40	73.20	65.25
11	53.80	66.50	75.20	74.90	67.60
12	83.20	83.70	91.20	91.40	87.38
13	84.90	85.40	91.20	91.10	88.15
14	67.30	72.70	83.60	85.70	77.33
15	77.60	82.40	88.20	88.50	84.18
16	72.50	79.00	81.10	82.80	78.85
17	48.30	57.70	74.00	71.00	62.75
18	80.70	82.80	89.80	90.00	85.83
19	77.00	72.20	85.90	83.90	79.75
20	75.80	77.60	88.70	87.30	82.35
21	77.10	66.90	86.20	86.40	79.15
22	58.50	66.50	77.10	75.30	69.35
23	79.10	75.20	87.00	83.80	81.28
24	34.40	55.60	63.40	59.50	53.23
25	79.40	73.10	83.70	83.00	79.80
26	74.80	78.00	85.80	85.70	81.08
27	73.60	75.50	82.70	80.70	78.13
28	75.80	66.30	82.60	80.60	76.33
29	62.70	67.90	82.30	82.40	73.83
30	70.70	69.80	86.50	83.60	77.65
31	68.40	68.40	80.20	79.10	74.03
32	80.20	78.90	86.20	85.10	82.60
33	68.50	64.00	75.40	72.20	70.03
34	71.90	70.00	80.60	77.10	74.90
35	69.80	70.20	85.60	82.60	77.05
36	86.30	84.70	89.10	89.50	87.40
37	66.10	68.40	82.60	83.10	75.05
38	65.90	68.50	79.50	78.60	73.13
39	54.30	55.10	78.20	77.80	66.35
40	51.90	54.40	69.50	65.80	60.40
No. of students	822	809	1668	2976	6275

**Table 6: Item-wise scores of students of Class IV in English written**

Item No.	% of students answered correctly				
	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
1	88.30	84.00	88.80	88.70	87.45
2	64.50	70.10	74.40	72.20	70.30
3	61.40	58.00	65.20	64.30	62.23
4	86.00	85.00	92.40	92.20	88.90
5	88.80	83.80	93.60	92.00	89.55
6	52.80	43.70	70.30	70.50	59.33
7	57.40	48.40	67.80	70.50	61.03
8	40.30	46.20	61.20	57.70	51.35
9	56.00	41.70	66.20	67.20	57.78
10	71.80	66.40	79.50	82.00	74.93
11	74.60	65.50	79.40	80.40	74.98
12	75.50	51.10	78.80	78.70	71.03
13	79.70	76.50	83.90	84.40	81.13
14	76.10	64.00	79.40	81.70	75.30
15	90.60	88.30	93.00	92.50	91.10
16	84.20	80.10	84.70	85.40	83.60
17	85.60	81.70	87.30	88.30	85.73
18	83.40	80.90	89.10	87.30	85.18
19	85.20	80.10	85.40	85.90	84.15
20	77.70	74.40	83.40	83.80	79.83
21	84.20	73.70	84.90	84.30	81.78
22	70.00	56.60	75.80	76.80	69.80
23	47.90	35.40	56.70	58.60	49.65
24	81.10	71.50	83.40	84.30	80.08
25	66.50	51.10	73.30	72.50	65.85
26	80.30	79.40	86.30	85.80	82.95
27	83.20	78.00	85.00	85.20	82.85
28	69.70	61.70	70.30	69.20	67.73
29	55.20	40.00	67.50	67.40	57.53
30	86.30	63.80	83.50	82.80	79.10
31	72.90	60.40	82.20	79.80	73.83
32	65.70	65.90	79.70	80.10	72.85
33	66.50	57.20	76.20	74.50	68.60
34	39.20	34.70	57.60	58.10	47.40
35	52.30	46.30	66.00	68.50	58.28
36	50.80	46.30	68.80	67.60	58.38
37	60.90	54.00	71.00	70.90	64.20
38	51.10	42.40	62.80	64.00	55.08
39	83.80	60.70	83.80	82.30	77.65
40	83.50	55.20	74.60	76.20	72.38
No. of students	831	792	1681	2957	6261

**Table 7: Item-wise scores of students of Class IV in Environmental Studies**

Item No.	% of students answered correctly				
	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
1	81.80	81.20	89.30	89.20	85.38
2	93.50	91.60	94.90	95.80	93.95
3	83.00	82.40	91.20	91.80	87.10
4	63.80	71.20	80.40	82.40	74.45
5	70.90	73.60	80.20	79.70	76.10
6	79.00	82.90	86.20	86.90	83.75
7	73.00	75.00	80.40	80.90	77.33
8	59.60	65.00	74.30	74.70	68.40
9	89.80	86.90	93.00	92.50	90.55
10	81.20	82.00	88.90	88.30	85.10
11	59.30	75.00	84.40	83.60	75.58
12	85.30	87.70	92.20	92.10	89.33
13	87.20	88.90	93.00	91.50	90.15
14	60.40	68.50	77.20	78.10	71.05
15	80.50	87.80	89.80	90.80	87.23
16	62.70	76.00	81.50	80.70	75.23
17	78.40	83.00	89.80	90.60	85.45
18	64.70	74.10	82.70	83.10	76.15
19	72.80	68.00	83.00	84.00	76.95
20	73.80	70.90	86.00	86.50	79.30
21	63.60	68.10	83.50	82.70	74.48
22	56.80	64.20	79.40	80.20	70.15
23	69.80	66.20	84.40	82.70	75.78
24	72.60	69.00	85.80	85.90	78.33
25	53.00	66.20	79.60	79.90	69.68
26	86.80	75.90	87.60	89.40	84.93
27	62.80	61.70	68.70	67.20	65.10
28	86.20	87.30	90.10	90.40	88.50
29	55.60	58.40	66.10	66.80	61.73
30	56.00	60.00	70.80	71.60	64.60
31	69.20	72.50	79.30	82.10	75.78
32	74.90	77.20	79.70	81.10	78.23
33	69.60	63.30	74.30	77.30	71.13
34	55.30	58.40	69.40	69.60	63.18
35	73.90	68.30	81.00	80.90	76.03
36	65.10	60.00	72.30	73.40	67.70
37	86.30	80.80	90.50	88.90	86.63
38	85.60	82.40	89.00	88.60	86.40
39	64.70	66.50	84.70	85.00	75.23
40	73.10	68.00	81.90	83.40	76.60
No. of students	825	772	1639	2943	6179

**Table 8: Item-wise scores of students of Class IV in Mathematics**

Item No.	% of students answered correctly				
	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
1	76.40	67.60	82.70	83.60	77.58
2	71.20	65.40	77.30	81.50	73.85
3	75.00	71.00	83.60	85.30	78.73
4	61.80	50.60	73.30	75.00	65.18
5	68.60	60.50	74.10	74.70	69.48
6	61.80	56.30	74.90	76.70	67.43
7	77.80	68.00	84.50	84.80	78.78
8	80.00	74.80	85.90	85.30	81.50
9	50.10	41.90	63.10	63.90	54.75
10	83.90	79.30	87.30	86.30	84.20
11	75.80	66.40	82.10	85.60	77.48
12	77.00	69.90	82.40	81.60	77.73
13	68.60	68.50	81.40	81.80	75.08
14	84.30	78.10	84.90	86.80	83.53
15	66.60	62.60	77.10	78.20	71.13
16	74.80	60.20	82.40	83.70	75.28
17	80.40	73.30	83.00	84.60	80.33
18	73.60	67.30	77.50	81.00	74.85
19	52.50	46.30	66.90	69.40	58.78
20	44.20	28.90	53.30	56.00	45.60
21	56.70	50.90	69.60	73.50	62.68
22	27.10	22.90	44.80	49.90	36.18
23	46.80	40.20	58.80	57.90	50.93
24	80.40	64.30	87.20	86.60	79.63
25	63.40	63.40	71.80	76.10	68.68
26	73.60	69.70	81.50	82.70	76.88
27	71.30	65.10	81.30	81.60	74.83
28	71.60	60.70	79.00	79.60	72.73
29	70.30	55.80	76.40	76.50	69.75
30	77.00	75.90	81.90	82.70	79.38
31	78.80	73.90	81.40	81.00	78.78
32	55.90	51.70	70.70	71.70	62.50
33	82.60	72.80	88.50	87.40	82.83
34	62.50	50.00	73.50	75.10	65.28
35	72.20	63.70	81.70	81.40	74.75
36	80.40	72.30	85.90	83.00	80.40
37	73.20	70.20	83.90	84.70	78.00
38	44.30	27.30	48.80	53.20	43.40
39	44.80	28.30	53.60	54.50	45.30
40	41.90	26.20	56.50	60.50	46.28
No. of students	853	816	1674	2982	6325

Table 9: Item-wise scores of students of Class III in English oral

Item No.	Answers	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
1	0	0.10	1.20	0.50	0.80	0.65
	1	1.50	1.80	0.40	0.90	1.15
	2	98.40	97.00	99.20	98.40	98.25
2	0	11.90	40.70	8.40	11.10	18.03
	1	31.10	16.00	6.00	7.60	15.18
	2	57.00	43.30	85.60	81.30	66.80
3	0	1.60	5.70	1.50	2.60	2.85
	1	14.80	10.70	3.20	4.30	8.25
	2	83.60	83.70	95.40	93.10	88.95
4	0	1.60	5.80	1.60	2.50	2.88
	1	14.50	11.10	2.70	4.20	8.13
	2	83.90	83.10	95.70	93.20	88.98
5	0	3.40	36.20	10.50	11.70	15.45
	1	22.40	29.20	9.50	9.50	17.65
	2	74.20	34.60	79.90	78.80	66.88
6	0	0.40	6.80	2.90	3.80	3.48
	1	13.30	13.60	5.80	6.10	9.70
	2	86.30	79.70	91.40	90.10	86.88
7	0	6.20	34.50	10.30	15.20	16.55
	1	32.00	22.60	14.00	14.00	20.65
	2	61.70	42.90	75.60	70.80	62.75
8	0	1.00	11.30	9.40	10.80	8.13
	1	19.30	17.50	13.70	18.30	17.20
	2	79.70	71.20	76.90	70.90	74.68
9.1	0	6.80	30.90	11.00	13.90	15.65
	1	26.40	8.60	10.10	14.40	14.88
	2	66.80	60.50	78.90	71.70	69.48
9.2	0	6.30	28.10	11.60	11.80	14.45
	1	28.10	10.50	11.40	13.20	15.80
	2	65.60	61.40	76.90	75.10	69.75
9.3	0	8.40	67.50	17.70	19.80	28.35
	1	35.90	13.40	23.20	22.90	23.85
	2	55.70	19.10	59.10	57.30	47.80
9.4	0	15.80	64.90	22.30	23.50	31.63
	1	34.40	15.50	23.60	24.40	24.48
	2	49.90	19.60	54.10	52.10	43.93
9.5	0	13.60	50.60	20.80	23.80	27.20
	1	32.70	15.50	20.80	22.40	22.85
	2	53.70	33.90	58.40	53.70	49.93
9.6	0	14.80	44.00	18.00	19.40	24.05
	1	29.30	14.20	19.30	20.70	20.88
	2	55.90	41.80	62.70	59.90	55.08
9.7	0	20.80	79.60	30.20	31.50	40.53
	1	41.20	13.00	27.80	26.90	27.23
	2	38.00	7.30	41.90	41.60	32.20
No. of students		735	722	1419	2640	5516

Notes: Marking Criteria used to estimate scores - 0= Not able to answer; 1= Not able to answer the question fluently and 2= able to answer the question fluently.



**Table 10: Item-wise scores of students of Class III in Tamil oral**

Item No.	Answers	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
1	0	0.50	1.40	0.10	0.10	0.53
	1	0.50	1.90	0.10	0.50	0.75
	2	99.00	96.80	99.80	99.40	98.75
2	0	0.40	0.90	0.60	1.00	0.73
	1	0.90	0.80	1.60	1.20	1.13
	2	98.70	98.20	97.80	97.90	98.15
3	0	10.40	17.30	8.40	9.10	11.30
	1	10.60	19.90	12.90	15.30	14.68
	2	79.00	62.80	78.70	75.60	74.03
4	0	0.10	1.20	0.80	0.60	0.68
	1	12.30	16.90	7.60	6.60	10.85
	2	87.60	81.90	91.50	92.70	88.43
5	0	0.40	0.40	1.70	0.90	0.85
	1	2.60	1.50	2.80	1.30	2.05
	2	97.00	98.10	95.50	97.90	97.13
6	0	16.40	28.90	17.80	21.10	21.05
	1	13.30	23.80	13.30	15.40	16.45
	2	70.30	47.30	68.90	63.50	62.50
7	0	9.10	20.40	8.60	8.90	11.75
	1	21.00	30.80	24.20	24.30	25.08
	2	69.90	48.80	67.20	66.70	63.15
8	0	8.30	8.60	6.20	8.20	7.83
	1	8.40	10.30	7.60	9.50	8.95
	2	83.20	81.10	86.10	82.30	83.18
9	0	1.20	16.30	5.20	7.40	7.53
	1	20.10	25.10	19.90	22.60	21.93
	2	78.80	58.60	74.90	70.00	70.58
10.1	0	4.80	11.40	4.20	5.90	6.58
	1	16.20	10.10	7.20	8.50	10.50
	2	79.00	78.50	88.70	85.70	82.98
10.2	0	7.90	16.00	6.20	7.30	9.35
	1	19.30	13.50	10.90	11.60	13.83
	2	72.80	70.50	82.90	81.10	76.83
10.3	0	9.90	34.00	10.10	11.40	16.35
	1	31.80	29.00	24.50	23.80	27.28
	2	58.30	37.10	65.30	64.80	56.38
10.4	0	9.10	19.70	6.90	8.00	10.93
	1	21.00	19.50	14.40	15.10	17.50
	2	69.90	60.80	78.70	76.90	71.58
10.5	0	8.90	21.30	6.70	7.10	11.00
	1	19.70	20.90	11.60	14.70	16.73
	2	71.40	57.90	81.70	78.20	72.30
No. of students		755	738	1407	2660	5560
	1	41.20	13.00	27.80	26.90	27.23
	2	38.00	7.30	41.90	41.60	32.20
No. of students		735	722	1419	2640	5516

Notes: Marking Criteria used to estimate scores - 0= Not able to answer; 1= Not able to answer the question fluently and 2= able to answer the question fluently

**Table 11: Item-wise scores of students of Class IV Tamil oral**

Item No.	Answers	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
1	0	2.40	10.80	3.40	3.10	4.93
	1	4.50	5.50	4.50	4.40	4.73
	2	93.00	83.70	92.10	92.50	90.33
2	0	0.80	10.40	2.20	2.90	4.08
	1	1.90	8.20	4.90	4.80	4.95
	2	97.30	81.30	92.90	92.30	90.95
3	0	0.50	3.30	2.60	2.10	2.13
	1	0.70	4.70	6.70	6.10	4.55
	2	98.80	92.00	90.70	91.80	93.33
4	0	6.70	13.10	6.60	6.50	8.23
	1	13.80	27.50	19.90	18.40	19.90
	2	79.60	59.40	73.50	75.10	71.90
5	0	15.90	36.60	14.90	13.90	20.33
	1	19.70	21.60	14.60	16.10	18.00
	2	64.40	41.80	70.50	70.00	61.68
6	0	4.70	10.30	6.50	6.20	6.93
	1	15.70	31.30	24.50	26.90	24.60
	2	79.60	58.40	69.10	66.90	68.50
7	0	4.00	12.60	4.60	5.20	6.60
	1	6.80	9.50	8.20	7.40	7.98
	2	89.20	78.00	87.20	87.40	85.45
8	0	3.50	5.80	7.10	5.70	5.53
	1	17.90	21.70	24.30	21.80	21.43
	2	78.50	72.50	68.60	72.50	73.03
9.1	0	5.50	22.90	7.30	5.80	10.38
	1	23.30	24.70	29.90	34.40	28.08
	2	71.20	52.50	62.80	59.90	61.60
9.2	0	5.30	15.50	6.20	6.90	8.48
	1	9.70	6.10	6.00	8.40	7.55
	2	85.10	78.40	87.80	84.70	84.00
9.3	0	6.40	24.30	8.80	8.10	11.90
	1	16.70	17.40	14.90	16.90	16.48
	2	76.90	58.20	76.30	74.90	71.58
9.4	0	9.50	48.50	12.00	12.80	20.70
	1	31.40	24.30	31.00	32.00	29.68
	2	59.20	27.10	57.10	55.20	49.65
9.5	0	5.60	17.50	8.00	7.40	9.63
	1	8.40	11.40	7.90	11.50	9.80
	2	86.00	71.10	84.10	81.10	80.58
10.1	0	5.70	18.70	6.00	6.40	9.20
	1	16.50	33.30	22.40	24.70	24.23
	2	77.80	48.10	71.60	68.80	66.58
10.2	0	5.80	23.60	7.10	7.40	10.98

Item No.	Answers	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
	1	19.00	32.40	28.00	29.90	27.33
	2	75.10	44.00	64.90	62.70	61.68
10.3	0	5.50	19.40	6.60	7.30	9.70
	1	17.90	33.50	22.10	24.20	24.43
	2	76.70	47.10	71.40	68.60	65.95
10.4	0	6.50	20.60	7.30	7.90	10.58
	1	18.90	33.70	23.60	25.70	25.48
	2	74.60	45.60	69.10	66.50	63.95
10.5	0	7.00	29.00	8.30	8.30	13.15
	1	22.80	36.00	32.40	32.90	31.03
	2	70.10	34.90	59.20	58.80	55.75
No. of students		854	813	1649	2940	6256

Notes: Marking Criteria used to estimate scores - 0= Not able to answer; 1= Not able to answer the question fluently and able to answer the question fluently.

**Table 12: Item-wise scores of students of Class IV English oral**

Item No.	Answers	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
1	0	6.30	6.00	4.80	5.90	5.75
	1	15.20	13.60	6.20	6.30	10.33
	2	78.50	80.40	89.00	87.90	83.95
2	0	9.10	18.00	12.50	15.50	13.78
	1	38.70	14.20	13.60	10.80	19.33
	2	52.20	67.80	73.90	73.70	66.90
3	0	6.80	15.30	7.70	12.70	10.63
	1	29.90	9.40	10.40	9.60	14.83
	2	63.30	75.20	81.90	77.60	74.50
4	0	11.30	32.10	18.70	22.50	21.15
	1	42.40	17.90	17.70	14.70	23.18
	2	46.30	50.00	63.60	62.80	55.68
5	0	10.50	4.70	7.40	10.10	8.18
	1	35.50	7.70	12.30	10.10	16.40
	2	53.90	87.70	80.30	79.90	75.45
6	0	8.60	20.30	18.20	20.90	17.00
	1	42.10	16.90	21.10	18.90	24.75
	2	49.30	62.90	60.70	60.20	58.28
7	0	3.40	19.40	10.90	12.00	11.43
	1	21.70	14.10	15.00	13.50	16.08
	2	74.90	66.50	74.10	74.60	72.53
8.1	0	9.00	35.30	11.30	13.30	17.23
	1	24.30	17.20	15.60	18.40	18.88
	2	66.70	47.40	73.10	68.40	63.90

Item No.	Answers	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
8.2	0	10.20	42.60	12.60	16.00	20.35
	1	27.90	25.70	26.10	28.80	27.13
	2	61.90	31.70	61.30	55.20	52.53
8.3	0	12.40	61.70	20.60	23.00	29.43
	1	36.90	15.70	25.10	29.30	26.75
	2	50.70	22.50	54.30	47.70	43.80
8.4	0	10.90	47.40	17.20	20.20	23.93
	1	32.10	17.50	20.90	24.70	23.80
	2	57.00	35.10	61.80	55.10	52.25
No. of students		823	795	1667	2940	6225
	1	31.80	29.00	24.50	23.80	27.28
	2	58.30	37.10	65.30	64.80	56.38
10.4	0	9.10	19.70	6.90	8.00	10.93
	1	21.00	19.50	14.40	15.10	17.50
	2	69.90	60.80	78.70	76.90	71.58
10.5	0	8.90	21.30	6.70	7.10	11.00
	1	19.70	20.90	11.60	14.70	16.73
	2	71.40	57.90	81.70	78.20	72.30
No. of students		755	738	1407	2660	5560
	1	41.20	13.00	27.80	26.90	27.23
	2	38.00	7.30	41.90	41.60	32.20
No. of students		735	722	1419	2640	5516

Notes: Marking Criteria used to estimate scores - 0= Not able to answer; 1= Not able to answer the question fluently and 2= able to answer the question fluently.

## B. Item-wise analysis of Teachers' and BRTes' Perception on ABL Methodology

Questionnaires were administered to teachers and BRTes respectively to assess their awareness about the ABL approach. For each question a four-point rating scale was made available to respondents to which each of them had to indicate their level of agreement or disagreement with.

Results revealed that teachers from schools of all the four regions expressed their complete agreement with very few elements of ABL on which they were quizzed upon. One such item was about the ability of students to speak more freely under ABL. Almost all teachers were found to agree with this assertion. Similarly, only around 10% of Coimbatore teachers expressed their disapproval with the level fixing done for each student under the ABL approach. However, a much larger percentage of teachers from Coimbatore schools (20%) were found to express dissatisfaction with the transaction of curriculum through cards. However, overall only around seven percentages of teachers were found endorsing this view.

In comparison to teachers, BRTes were found to express satisfaction with a larger number of ABL components. They being transaction of curriculum through cards, monitoring of progress of students, level fixing of students, raising of questions by students, effectiveness of ABL in learning all subjects up to class IV, development of confidence among students and the ability to talk freely.

Few sentiments were found being resonated by teachers across regions. Almost twenty percent of all teachers felt that absence of textbooks was being felt in schools. The same trend was observed across BRTes. Requirement of textbooks in a few ladder activities is likely to have prompted teachers and BRTes to put forward the abovementioned statement.

Forty four percent of all teachers felt that students were not in a position to make accurate self evaluations. Approximately twenty three percent of BRTes were found lending support to the above mentioned perception.

A large percent of teachers also reported that attendance had not been significantly enhanced since the advent of ABL. Apart from Chennai BRTes, BRTes from all other districts were found stating the same.

More than fifty percent of teachers felt that it was difficult to achieve a comprehensive coverage of curriculum though cards. The same trend was observed among BRTes. However, in comparison to teachers lesser percent of BRTes, 17.49%, were found reporting the above mentioned. A significant percentage of teachers also perceived that the possibility of rote learning was still not completely rooted out by the system of ABL. The same opinion was voiced out by almost twenty two percent of BRTes.

The possibility of still further improving the enquiry skills in ABL was reported by many teachers from across regions. The same was reported by almost eight percent of BRTes from across the schools. Over all thirty seven percent teachers from all schools also reported that it was difficult to organize remedial teaching under ABL. This emotion was reverberated by around eleven percent of Coimbatore BRTes.

Twenty five percentage teachers from all districts other than Chennai lamented about the fact that understanding of milestones and ladders was a complex process for students. Ten percent of Chennai BRTes also felt the same. These teachers also found that arts and aesthetic education is neglected by ABL. Around twelve percent of Chennai BRTes also believed that arts and aesthetic education was being neglected by ABL. 14% of teachers felt that ABL was not equally effective for learning all subjects upto standard IV.

A large percentage of BRTes from Coimbatore expressed doubt over ABL being most effective in elementary education over and above all programmes. However, most of the BRTes from all the regions agreed with the assertion that ABL had proved to be extremely effective. Ten percent of Coimbatore BRTes disagreed with the statement that peer learning was crucial in ABL. Coimbatore BRTes also expressed disagreement with the statement that during meetings parents actively expressed happiness with the ABL methodology. They also reported that presently communication was insufficient with the community about learning of students. Likewise, a large percentage of teachers were found voicing out their disagreement with the assertion that parents expressed happiness with the ABL methodology and their being sufficient scope for communication with the community about students' learning.

Approximately forty percent of all teachers disagreed with the statement that ABL classes had become more self disciplined. Coimbatore, model and other school educators added that there still existed a need for discipline to be imposed by teachers even in ABL classrooms. Coimbatore and model school BRTes disagreed with the notion that ABL classes were more self disciplined than non ABL classes.

A large percentage of teachers from Coimbatore felt that ABL had not necessarily enhanced confidence among students. Coimbatore and model school teachers together felt that peer learning need not be a crucial aspect of the ABL approach. Teachers from schools of these two types also perceived that students had not substantially started raising questions related to their learning since the commencement of ABL. Coimbatore teachers also expressed difficulties in monitoring the progress of students.

Results also revealed that around nine percent of Chennai and Coimbatore BRTes disagreed with the statement that post the ABL implementation the distance between the community and the school had reduced considerably as a result of the VEC day.. Few Coimbatore and BRTes from other schools felt that if a school had just one teacher from classes I to IV then ABL no longer remained an appropriate approach to primary education.

**Table 1: Item-wise responses of BRTes on ABL Methodology**

Item Content	Rating Scale	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
Transacting curriculum through cards has been found effective	1	86.67	27.69	53.00	57.52	55.97
	2	12.50	52.31	39.63	38.59	37.32
	3		10.77	5.53	2.43	4.10
	4	.83	9.23	1.84	1.46	2.62
Absence of the text books has not been felt	1	65.00	16.92	21.66	26.70	29.24
	2	24.17	57.69	51.15	55.34	50.40
	3	3.33	18.46	21.20	14.56	15.24
	4	7.50	6.92	5.99	3.40	5.12
It is possible to monitor the progress of each student	1	85.00	37.98	61.75	74.76	67.54
	2	12.50	42.64	33.64	22.33	26.77
	3	1.67	14.73	4.15	2.18	4.44
	4	.83	4.65	.46	.73	1.25
Fixing the level of each student in the beginning is methodical	1	86.67	36.15	54.17	62.53	59.86
	2	12.50	53.08	40.28	32.60	34.78
	3		6.92	5.56	4.87	4.68
	4	.83	3.85			.68
Peer learning is crucial in ABL approach	1	75.83	27.69	45.62	57.91	52.85
	2	20.00	40.77	33.64	30.17	31.21
	3	1.67	21.54	18.89	8.03	11.85
	4	2.50	10.00	1.84	3.89	4.10
Accurate self evaluation by a student is not always possible in the ABL approach	1	9.24	13.08	8.45	11.03	10.46
	2	10.08	48.46	26.76	38.97	33.45
	3	34.45	31.54	42.72	34.31	35.98
	4	46.22	6.92	22.07	15.69	20.11
Attendance of students has increased drastically after implementing the ABL approach	1	60.66	15.38	23.50	37.62	34.05
	2	23.77	32.31	43.32	40.29	37.57
	3	13.93	36.92	28.11	18.45	22.93
	4	1.64	15.38	5.07	3.64	5.45
For students understanding milestones and ladders is a complex process	1	.83	8.46	4.61	3.40	4.09
	2	7.44	21.54	15.21	23.79	19.09
	3	35.54	59.23	56.22	48.54	50.23
	4	56.20	10.77	23.96	24.27	26.59
ABL has made students more confident	1	88.52	30.77	50.23	56.42	55.56
	2	9.84	50.00	38.25	37.29	35.60
	3	.82	13.08	9.22	5.33	6.80
	4	.82	6.15	2.30	.97	2.04

Item Content	Rating Scale	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
Students under ABL talk to me more freely	1	95.90	62.31	71.43	76.03	75.62
	2	3.28	36.92	27.19	22.76	23.24
	3			1.38	.97	.79
	4	.82	.77		.24	.34
Students raise many questions related to their learning	1	80.33	24.62	44.91	46.73	47.67
	2	18.03	53.85	41.67	45.04	41.77
	3	.82	14.62	12.50	6.54	8.40
	4	.82	6.92	.93	1.69	2.16
ABL classes are more self disciplined	1	51.64	10.77	25.46	28.33	28.26
	2	27.05	18.46	37.50	34.87	32.01
	3	11.48	46.15	26.39	28.81	28.38
	4	9.84	24.62	10.65	7.99	11.35
In casual meetings parents express happiness with the ABL methodology	1	80.33	16.15	30.41	38.26	38.89
	2	17.21	38.46	46.08	45.52	40.70
	3	2.46	37.69	18.43	13.56	16.78
	4		7.69	5.07	2.66	3.63
There is sufficient scope for communication with the community about learning of students	1	69.67	17.69	29.17	36.56	36.55
	2	26.23	38.46	46.30	49.15	43.70
	3	3.28	31.54	22.22	11.86	16.12
	4	.82	12.31	2.31	2.42	3.63
It is very difficult to organize remedial teaching under the ABL approach	1	5.74	12.31	6.45	8.98	8.40
	2	9.84	36.15	27.65	32.52	28.72
	3	36.07	43.08	53.00	44.17	45.06
	4	48.36	8.46	12.90	14.32	17.82
The ABL approach is equally effective for learning all subjects upto standard IV	1	81.15	20.77	42.86	54.48	50.34
	2	15.57	48.46	39.17	36.08	35.83
	3	1.64	26.15	14.75	6.30	10.66
	4	1.64	4.62	3.23	3.15	3.17
Arts and aesthetics education is neglected by the ABL	1	1.64	2.31	6.02	8.01	5.80
	2	3.28	23.85	14.35	21.60	17.61
	3	42.62	58.46	53.24	51.94	51.93
	4	52.46	15.38	26.39	18.45	24.66
The enquiry skills in science are a casualty in ABL	1	1.64	1.54	1.85	3.63	2.61
	2	4.10	13.08	12.04	16.95	13.39
	3	33.61	69.23	54.63	53.75	53.46
	4	60.66	16.15	31.48	25.67	30.53
It is very difficult to have a comprehensive coverage of the curriculum through cards	1	1.64	15.38	9.30	11.14	10.00
	2	16.39	56.92	41.40	41.65	40.34
	3	28.69	23.85	35.35	34.87	32.50
	4	53.28	3.85	13.95	12.35	17.16
There is no scope for rote learning in ABL	1	36.07	33.08	29.95	28.88	30.76
	2	13.93	42.31	40.55	44.66	39.05
	3	32.79	18.46	20.28	18.69	21.00
	4	17.21	6.15	9.22	7.77	9.19

Note: Rating Scale used to give scores: Very much agree -1; Agree - 2; Disagree - 3; and Very much disagree - 4.

**Table 2: Item-wise responses of Teachers on ABL Methodology**

Item Content	Rating Scale	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
Transacting curriculum through cards has been found effective	1	100.00	47.83	70.25	78.75	75.48
	2		<b>47.83</b>	<b>29.11</b>	<b>20.88</b>	<b>23.76</b>
	3		<b>2.17</b>			<b>.19</b>
	4		<b>2.17</b>	<b>0.63</b>	<b>0.37</b>	<b>.57</b>
Absence of the text books has not been felt	1	91.84	39.13	49.37	50.18	52.85
	2		<b>41.30</b>	<b>30.38</b>	<b>29.30</b>	<b>27.95</b>
	3		<b>17.39</b>	<b>13.29</b>	<b>10.62</b>	<b>11.03</b>
	4	6.12	2.17	6.33	8.42	7.03
It is possible to monitor the progress of each student	1	100.00	69.57	86.71	85.35	85.74
	2		<b>26.09</b>	<b>10.76</b>	<b>12.82</b>	<b>12.17</b>
	3			<b>0.63</b>	<b>1.47</b>	<b>.95</b>
	4		<b>4.35</b>	<b>1.90</b>	<b>.37</b>	<b>1.14</b>
Fixing the level of each student in the beginning is methodical	1	100.00	52.17	75.95	72.89	74.52
	2		<b>43.48</b>	<b>20.25</b>	<b>22.34</b>	<b>21.48</b>
	3		<b>4.35</b>	<b>3.80</b>	<b>2.93</b>	<b>3.04</b>
	4				<b>1.83</b>	<b>.95</b>
Peer learning is crucial in ABL approach	1	97.96	52.17	79.11	78.39	78.14
	2	2.04	36.96	19.62	20.15	19.77
	3		<b>6.52</b>	<b>0.63</b>	<b>1.47</b>	<b>1.52</b>
	4		<b>4.35</b>	<b>0.63</b>		<b>0.57</b>
Accurate self evaluation by a student is not always possible in the ABL approach	1	12.24	8.70	6.33	8.79	8.37
	2	6.12	17.39	14.56	15.75	14.64
	3	4.08	56.52	37.97	35.16	34.98
	4	77.55	17.39	41.14	39.93	41.83
Attendance of students has increased drastically after implementing the ABL approach	1	91.84	21.74	59.49	54.21	56.46
	2	6.12	52.17	32.28	35.16	33.08
	3		<b>17.39</b>	<b>5.06</b>	<b>10.26</b>	<b>8.37</b>
	4		<b>8.70</b>	<b>3.16</b>	<b>.37</b>	<b>1.90</b>
For students understanding milestones and ladders is a complex process	1	4.08	6.52	0.63	2.56	2.47
	2	6.12	2.17	3.16	2.93	3.23
	3	4.08	58.70	46.20	42.49	41.44
	4	85.71	32.61	49.37	51.65	52.47
No other programme has been as effective as the ABL as far as elementary education of students is concerned	1	93.88	34.78	67.09	66.67	66.54
	2	2.04	45.65	30.38	27.47	27.57
	3		<b>13.04</b>	<b>1.27</b>	<b>4.76</b>	<b>3.99</b>
	4	4.08	6.52	1.27	.73	1.71
ABL has made students more confident	1	100.00%	65.22%	84.18%	84.62%	84.22%
	2		<b>30.43%</b>	<b>14.56%</b>	<b>14.29%</b>	<b>14.45%</b>
	3		<b>2.17%</b>	<b>.63%</b>	<b>.73%</b>	<b>.76%</b>
	4		<b>2.17%</b>		<b>.37%</b>	<b>.38%</b>



Item Content	Rating Scale	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
Students under ABL talk to me more freely	1	100.00%	84.78%	89.24%	89.74%	90.11%
	2		15.22%	10.76%	9.89%	9.70%
	3				.37%	.19%
	4					
Students raise many questions related to their learning	1	100.00%	65.22%	73.42%	73.63%	75.29%
	2		30.43%	25.32%	25.27%	23.38%
	3		2.17%	.63%	1.10%	.95%
	4		2.17%	.63%		.38%
Teacher does not have to discipline the students in ABL	1	87.76%	10.87%	33.54%	32.23%	35.93%
	2	4.08%	21.74%	35.44%	34.43%	30.80%
	3		60.87%	24.68%	28.21%	27.38%
	4	8.16%	6.52%	6.33%	4.76%	5.70%
ABL classes are more self disciplined than the non ABL classes	1	97.96%	21.74%	56.33%	58.61%	58.37%
	2	2.04%	39.13%	33.54%	34.07%	31.37%
	3		30.43%	8.23%	6.59%	8.56%
	4		8.70%	1.90%	.73%	1.71%
In casual meetings parents express happiness with the ABL methodology	1	100.00%	32.61%	65.19%	58.24%	61.98%
	2		50.00%	32.28%	38.46%	34.03%
	3		17.39%	1.90%	2.56%	3.42%
	4			.63%	.73%	.57%
There is sufficient scope for communication with the community about learning of students	1	97.96%	30.43%	65.19%	61.54%	63.31%
	2	2.04%	54.35%	28.48%	35.16%	31.75%
	3		10.87%	5.06%	2.93%	3.99%
	4		4.35%	1.27%	.37%	.95%
The distance between the community and the school has reduced considerably as a result of the VEC Day after implementing the ABL	1	89.80%	47.83%	70.89%	75.09%	72.81%
	2	2.04%	43.48%	23.42%	20.51%	21.67%
	3		4.35%	1.90%	1.83%	1.90%
	4	8.16%	4.35%	3.80%	2.56%	3.61%
It is very easy to organize remedial teaching under the ABL approach	1	91.84%	32.61%	69.62%	66.30%	66.73%
	2	6.12%	56.52%	25.95%	30.77%	29.28%
	3		6.52%	3.80%	2.93%	3.23%
	4	2.04%	4.35%	.63%		.76%
The ABL approach is equally effective for learning all subjects upto standard IV	1	97.96%	50.00%	80.38%	82.42%	80.42%
	2	2.04%	41.30%	18.35%	16.12%	17.68%
	3		4.35%	.63%	1.10%	1.14%
	4		4.35%	.63%	.37%	.76%
Arts and aesthetics education is neglected by the ABL	1	4.08%	4.35%	1.27%	2.56%	2.47%
	2	8.16%	4.35%	1.90%	1.47%	2.47%
	3	2.04%	45.65%	35.44%	31.50%	31.18%
	4	85.71%	45.65%	61.39%	64.47%	63.88%
The enquiry skills in science are a casualty in ABL	1		2.17%	.63%	2.20%	1.52%
	2	8.16%	6.52%	8.23%	5.13%	6.46%
	3	4.08%	54.35%	50.00%	41.39%	41.63%
	4	87.76%	36.96%	41.14%	51.28%	50.38%

Item Content	Rating Scale	Chennai Schools (Phases I and II)	Coimbatore City Schools (Phases III and IV)	Model Schools in other sample districts (Phase III)	Other Schools in other sample districts (Phase IV)	All schools
It is very difficult to have a comprehensive coverage of the curriculum through cards	1	2.04%	4.35%	3.16%	4.40%	3.80%
	2	8.16%	17.39%	15.19%	13.19%	13.69%
	3		<b>47.83%</b>	<b>37.97%</b>	<b>38.10%</b>	<b>35.36%</b>
	4	89.80%	30.43%	43.67%	43.96%	46.96%
There is no scope for rote learning in ABL	1	87.76%	21.74%	36.08%	37.36%	40.30%
	2	6.12%	50.00%	43.04%	36.26%	36.69%
	3	4.08%	21.74%	14.56%	20.15%	17.11%
	4	2.04%	6.52%	6.33%	5.86%	5.70%
Even if there is one teacher to one class up to standard IV, ABL is still the appropriate approach to primary education	1	100.00%	39.13%	71.52%	68.86%	69.96%
	2		<b>54.35%</b>	<b>22.78%</b>	<b>19.78%</b>	<b>21.86%</b>
	3		<b>4.35%</b>	<b>1.90%</b>	<b>8.42%</b>	<b>5.32%</b>
	4		<b>2.17%</b>	<b>3.80%</b>	<b>2.56%</b>	<b>2.66%</b>

Notes: Rating Scale used to give scores: Very much agree -1; Agree - 2; Disagree - 3; and Very much disagree - 4.

## APPENDIX F: List of Schools

City: Chennai		
School Name	School Name	School Name
1) Cms Aminjikarai	2) Cms 246 Mint St	3) Cps Thiruvalluvar Nagar
4) Cms New Kamaraj Nagar	5) Cms Kamarajar Colony	6) Cps Kannadasan Nagar
7) Cms Saidapet	8) Cms Vk Pillai St	9) Cps Pri Sch Km Colony I
10) Cms Coronation Nagar	11) Cms Gandhigramam	12) Cps Koyambedu
13) Cms Velachery	14) Cps Thiruvanmiyur	15) Cms Maduma Nagar
16) Cps Ganesapuram	17) Cms Vellala St	18) Cps Thillaiyadi Valliammai
19) Cps Naduvankarai	20) Cps Tagur Nagar	21) Cps Mkb Nagar
22) Cps Tvk Nagar	23) Cms H&S Factory	24) Cps Pullapuram
25) Cps 10 Jones Road	26) Cms Vinayapuram	27) Cps Voc Play Ground
28) Cms Guji Street	29) Cms Chinna Babu St	30) Cps Ekkattuthangal

City: Coimbatore		
School Name	School Name	School Name
1) Cps Rspuram North	2) Cps Seeranalckenpalayam	3) Cps Peelamedu Pudur
4) Pvp Memorial Corp Pry Sc. East	5) Cps Kuppakonampudur	6) Cps Udayampalayam
7) Cps Devanga High School Road (M)	8) Cps Ganapathy	9) Cms Sihs Colony
10) Verivada Chettiar Pry School	11) Cps Ramakrishnapuram (M)	12) Cps Ondipudur North
13) Cps Ramanathapuram	14) Cms Ramasamy Nagar	15) Cms Masakalipalayam
16) Cps Ranganathapuram (M)	17) Cms Sanganur	18) Cms Krishnapuram
19) Cps Okkiliyar Colony	20) Cps Kovilmedu	21) Cms Krishnarayapuram
22) Cps Bb Street	23) Cps Peelamedu	24) Cms Pappanaickenpalayam (M)
25) Cps Sidhapudur		

<b>District: Coimbatore</b>		
<b>School Name</b>	<b>School Name</b>	<b>School Name</b>
1) Pupschool-Puduathikombai	2) Pups - Samiyarpudur (M)	3) Pum School-Paganatham
4) Pupschool-Reddiyapatti	5) Pups - Periyakottai (M)	6) Pum School-Singarakottai
7) Pupschool-K.Keeranur	8) Pups - Arasappapillaipatty (M)	9) Pum SI-Velayuthampalayam
10) Pupschool-Dhasaripatty	11) Pup School-Senmanampatty	12) Pups - Savadagoundanpatty (M)
13) Pupschool-Chatrapatty	14) Pum School-Kuppampatty	15) Pups - Chithoor (M)
16) Pupschool-Veeralapatty	17) Pup School-Ermanayakkanpatty	18) Pups - Thennampatty (M)

<b>District: Dindigul</b>		
<b>School Name</b>	<b>School Name</b>	<b>School Name</b>
1) Adw Ms Pasur	1) Pups Kariyampalayam	1) Pups V. Vellakundapuram
2) Pups Boyanur	2) Pups Kattampatti (M)	2) Pups Vagatholuvu
3) Pups Pattakaranpudur	3) Pups Anaiyur (M)	3) Pups Nanjegoundenpudur
4) Pums Kemmanaickenpalayam	4) Pups Nagamma Pudur (M)	4) Pups S. Vellakundapuram
5) Pups Vadugapalayam	5) Pups Kollupalayam	5) Pums Pukkulam
6) Pums V L N Pattipudur (M)	6) Pums Kongalnakaram (M)	6) Pums Moonkil Tholuvu (M)

<b>District: Karur</b>		
<b>School Name</b>	<b>School Name</b>	<b>School Name</b>
1) Pups, M.Pudupatti	2) Pups Alamarathupatty (M)	3) Pums, I. Pudupatti
4) Pups, Thirukkampuliyur	5) Pums Sengal (M)	6) Pups, Karungalapalli
7) Pups, Vengampatti	8) Pums Krishnarayapuram (G) (M)	9) Pums, Thiruchapur
10) Pums, Muthampatti	11) Pums, Mariyamankoil	12) Pues Seegampatty (M)
13) Pups, Kattaraipatty	14) Pups, Melakuppureddipatty	15) Pues Kuruchi (M)
16) Pups, Kambaliampatti	17) Pums, Thaliyampatti	18) Pums Sevayam West (M)

<b>District: Madurai</b>		
<b>School Name</b>	<b>School Name</b>	<b>School Name</b>
1) Govt.K.P.S.Joshiyalarangulam	2) Pups, Ammapatti (M)	3) Govt.K.P.S. Kanavaipatti
4) P.U.P.S. Vagaikulam	5) Pups, Uachapatti (M)	6) T.E.L.C.M.S Keelapudur
7) P.U.P.S.T. Pudupatti	8) Pups, Kandai (M)	9) P.U.M.S Allikundam
10) Govt.K.P.S. Nakkala Kottai.	11) P.U.P.S Ayyankovilpatti	12) Pums, T.Chettiyapatti (M)
13) P.U.P.S. Thirali	14) P.U.P.S Ambasamuthiram	15) Pums, Usilampatti Bazar (M)
16) P.U.P.S. Naduvakottai	17) National P.S. Moopparatti	18) Pums, Melaedaiyapatti (M)

<b>District: Perambalur</b>		
<b>School Name</b>	<b>School Name</b>	<b>School Name</b>
1) Pues Vijayagabalapuram	1) Pups Padalur (M)	1) Pums-Ayylur
2) Pumspilimisi	2) Pups Karai (M)	2) Pues-K.Pudur
3) Pums Pudhu Viralipatti	3) Pups Elanthankuzhi-East (M)	3) Adws-Ammapalayam
4) Nethaji Aid.Ms.Addaikampatti	4) T.Rover Ele.S.Perambalur	4) Pups Kurumbalur (M)
5) Pums Allinagaram	5) Adws-Chathiramanai	5) Adwms Echampatti (M)
6) Pums Puduammampalayam	6) Pues-Keelakanvai	6) Pups Siruvachur (M)

District: Pudukottai		
School Name	School Name	School Name
1) Pups.Kallur	1) Pups - South Ponnampatti (M)	1) Pums. Kendayampatti
2) Pus.Posampatti	2) Pups - Pondupuli (M)	2) Pups.Kothagam
3) Pups.Yembal	3) Pups -Thekkur (M)	3) Pups.Neppugai
4) Pups.Vellani	4) Pups.Saveriyarpatti	4) Pups - Kallakottai (M)
5) Pups.Mirattunilai	5) Pums.Veeradipatti	5) Pums - Sangamviduthi (M)
6) Skt.Gandhi.P.S. Rayavaram	6) Pups.Periyakkottai	6) Pums - Vellalaviduthi (M)

District: Ramanathapuram		
School Name	School Name	School Name
1) Pups, Ariyakudi	2) Pups Sathirakudi (M)	3) Pups, Pamboor
4) Pups, Manjur	5) Pups Pandikanmai (M)	6) Pups, Oorakkudi
7) Pups, Poovalathur	8) Pums Pottithatti (M)	9) R.C. Yadhava Ps, Paramakudi
10) Dheeniya Aided Ps. T. Karungulam	11) Pums, Pidariseri	12) Pups Melaikudi (M)
13) Pums, Mennandhi	14) Pums, Thelichathanallur	15) Pups Melachathiram (M)
16) Pums, A.Puthur	17) Pums, Kumarakudi	18) Pups Kulanthapuri (M)

District: Thanjavur		
School Name	School Name	School Name
1) Pups - A. Maravakkadu	1) Pums - Pulavanchi (M)	1) Pups - Kanchankadu
2) Pums- Alampallam	2) Pums- Madukkur (South) (M)	2) Pums - Kuppathevan
3) Pups - Karappankadu	3) Pums - Madukkur (North) (M)	3) Pups - Veerakkudi
4) Pups - Kasankadu (East)	4) Pups- Chokkanathapuram	4) Pups-Valivayal (M)
5) Pups - Olayakunnam	5) Pups - Pookollai	5) Pups -Vilankulam (M)
6) Pups -Siramelkudi	6) Pums - Senthelaivayal	6) Pums-Kollukkadu (M)

District: The Nilgiris		
School Name	School Name	School Name
1) Pups, Kappatty	1) Csi Ps, Burnside	1) Pums Keircombai (M)
2) Csi Ps, Athiyurmattam	2) Aps, Thattapalam	2) Pums Horasholai (M)
3) Gtr Ps, Mettugal	3) Gtr,Ps, Semmanarai	3) Pups Sholurmattam (M)

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