CHAPTER III
DESIGN OF THE STUDY

3.1 INTRODUCTION
As outlined in Chapter I, this study examines the various academic factors that influence the teaching-learning process of language and students’ achievements in reading and writing in early primary grades. Several academic factors interact with each other and their complex interplay determines what happens inside the classroom, and how children learn. To study such a complex interaction of these academic factors, a purely positivist framework that attempts to simplify, restrict or control variables and quantitatively measure the impact of each variable, is quite inappropriate. Some studies, e.g. NCERT’s Learning Achievement Studies have collected information on hundreds of student, teacher and school variables. However, multivariate regressions have rarely been able to explain a significant proportion of the variance in learning achievements of students. There is so much more that happens inside a classroom that is not easy to convert to a variable and measure quantitatively. Also, school contexts are different and analysis of factors is done most appropriately within the context of the school or a set of similar schools.

Therefore, this researcher has chosen a qualitative research design. In seeking answers to the research questions, both qualitative and quantitative techniques have been used. In some ways, this study can be characterized as a ‘Case Study’ of 16 schools in 4 blocks in 2 states of India. The focus is on individual schools and classrooms, and their contexts. Within each school, the data collection has been done in a holistic manner, covering aspects of students’ backgrounds, school facilities, teachers’ perceptions, teaching-learning process, use of textbooks and TLM (teaching-learning materials) and the systemic environment interacting with the school.
However, in terms of data analysis and reporting, the study does not follow a case study format where the focus is, almost always, on providing a detailed account of a particular context, and findings of each individual case. Since the study aims at understanding patterns of classroom processes, teacher practices and student achievements across a set of schools in a region, it was important to look at aggregated results and comparisons across schools and states. The selected schools do represent the most common reality in the 4 blocks (in 2 states) identified for the study. This will be addressed in detail in the sampling section. Therefore, the analysis attempts to provide descriptions of classroom processes, time-use patterns, teacher perceptions and student achievements in a manner that can help draw comparisons and limited generalizations.

3.2 OBJECTIVES OF THE STUDY

(vi) To study the status of teaching-learning process and materials for development of reading skills among primary grade learners.
(vii) To assess the reading achievements of learners in primary grades.
(viii) To study the school based academic factors that influence reading achievements of learners in primary grades.
(ix) To study existing good practices in teaching of reading in primary grades in some effective reading programmes.
(x) To compare the teaching-learning process and teaching-learning materials in the observed schools with the identified good practices.

3.3 DESIGN OF THE STUDY: AN OVERVIEW

The research design for the study is derived directly from the objectives of the study and the simplified conceptual framework (Figure1.1) outlined in Chapter I.
Figure 3.1 summarizes the overall research design indicating the various research objectives/activities on the left hand side and the methods for data collection and analysis on the right side.

**Figure 3.1: Overview of major research activities & corresponding methods**

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify standards or good practices for teaching-learning language in early primary grades. Also, appropriate teacher beliefs and attitudes</td>
<td>Desk analysis of research in early grades language instruction and acquisition: focus on reading</td>
</tr>
<tr>
<td>Identify preliminary key academic factors that may influence language teaching-learning</td>
<td>Study documentation of effective early grades reading programmes</td>
</tr>
<tr>
<td>Study classroom processes in selected schools including teaching methods, students’ active engagement, use of textbooks and other materials</td>
<td>Interaction with key programme staff of some programmes</td>
</tr>
<tr>
<td>Assess students’ language achievements and compare with desired levels</td>
<td>Experiences of some teachers &amp; CRC/BRC/DIET faculty</td>
</tr>
<tr>
<td>Study and document classroom processes in one good school in each state</td>
<td>Detailed classroom observations in selected schools</td>
</tr>
<tr>
<td>Study teacher/CRC/BRC/DIET/SSA perceptions and beliefs about language teaching practices and student learning</td>
<td>Assessment of language learning of students in grades 1 &amp; 2 using a set of tests measuring different skills</td>
</tr>
<tr>
<td>Identify gaps in teaching-learning practices, beliefs and perceptions for language teaching</td>
<td>Classroom Observations, teacher interviews and assessments</td>
</tr>
<tr>
<td>Identify gaps in curriculum, textbooks, TLM, training and academic support compared with desirable practices</td>
<td>Teacher/CRC/BRC/DIET interviews</td>
</tr>
<tr>
<td>Identify the key academic factors that influence students’ language learning in early primary grades</td>
<td>Attend monthly teacher meetings</td>
</tr>
<tr>
<td></td>
<td>Questionnaire based survey of teachers</td>
</tr>
<tr>
<td></td>
<td>Qualitative analysis of observed practices and comparison with earlier identified desirable practices</td>
</tr>
<tr>
<td></td>
<td>Desk analysis of curriculum, textbooks, workbooks and other TLM and comparison with identified good practices</td>
</tr>
<tr>
<td></td>
<td>Qualitative analysis of all data from school visits, classroom observations, teacher and other interviews, student assessments, other desk analyses etc.</td>
</tr>
</tbody>
</table>
A multiple-method research design has been developed to ensure a holistic understanding of the teaching-learning process for language in early primary grades and the academic factors that influence student reading achievements.

Accordingly, triangulation was built in to the design of the study for several aspects to help understand a holistic picture of classroom processes and identify the more crucial academic factors. For example, what is observed in the classroom through structured observation was also discussed with teachers in a qualitative semi-structured interview to understand their perspective.

Detailed qualitative observations substantiated the structured classroom observation tool recording. Video clips of certain specific classroom processes helped in analyzing teacher and student behaviour and corroborate the structured observations and unstructured notes.

Five kinds of triangulation have been used in this study

**(i) Time triangulation**
Each language classroom was observed 3 times. This helped ensure that the record was not based on a single observation that may not reflect the average reality.

**(ii) Space triangulation:**
The coverage of 8 schools in a contiguous area has helped ensure that the results of assessment, classroom observation etc. do not reflect a unique situation of 1 or 2 schools.

**(iii) Methodological triangulation:**
Use of multiple methods described in later sections helped to create greater confidence that some findings were substantiated through analysis of more than one data collection method.
(iv) **A mix of quantitative and qualitative analysis:**

It helps in corroboration of findings across different data sources and methods of analysis. The qualitative observations are useful in understanding the causes of the behaviours recorded in the structured schedules.

The following sections describe the population and sample for the various modes of data collection; development of tools for data collection; data collection process and data analysis.

### 3.4 POPULATION

#### 3.4.1 For Field Work

The population for the field work included all the government schools located in rural areas of Assam and Rajasthan; students enrolled in these schools at the primary stage and the teachers teaching primary grades constitute.

(i) **Why Assam and Rajasthan?**

Both Assam and Rajasthan are educationally disadvantaged states. According to the Composite Educational Development Index 2007-08 developed by NUEPA, Assam and Rajasthan were ranked 31 and 22 respectively among the 35 States and UTs. In the ASER Survey 2009, both these states figure in the lowest quartile of reading achievements. In Assam, only 59.4 % students of grades 3-5 could read a text of a grade 1 level. This percentage was 62 % for Rajasthan. There are other educationally disadvantaged states like Uttar Pradesh and Bihar. Rajasthan and Assam have been chosen to provide a comparative perspective from two states located in two very different parts of the country, viz. western and northeastern India with very different cultural and ethnic composition. Also, it was useful to study language teaching-learning strategies and students’ achievements for two very different languages. If certain processes or issues turn out to be common in these two states, there is a strong likelihood that these issues are common in most parts of the country.
(ii) Why government schools?
Only government schools were studied, since in both states, more than 80% students in primary grades are enrolled in government schools. Also, the students in government schools come from more deprived socioeconomic backgrounds—low levels of parental education, lack of a preschool experience, little home support and resources for reading, and a low value for education. It is important to understand the challenges in learning to read in such deprived socioeconomic contexts.

(iii) Why only rural areas?
In both states, over 90% of the government primary schools are located in rural areas. In both the states, over 90% of the enrollment in primary grades is in the rural areas. A rural context is, on an average, more deprived in terms of the socioeconomic situation (factors mentioned above) than an urban context. The exposure to print is also much more limited in a rural area. For these reasons, the schools for the field work were selected from rural areas.

(iv) Primary Education in Assam: A Brief Overview
The primary stage had historically included grades 1-4. However, from 2010, grade 5 has been included in the primary schools. There are 23 districts in Assam. The administration of all government schools in Assam is under the Department of Education. The profile of primary school students, teachers and schools (NUEPA, 2010) is in Table 3.1

<table>
<thead>
<tr>
<th>Key data: Elementary education</th>
<th>Primary only</th>
<th>P+UP</th>
<th>P+UP+ Sec/HS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Schools</td>
<td>50756</td>
<td>1446</td>
<td>903</td>
<td>53,105</td>
</tr>
<tr>
<td>Government schools</td>
<td>50,204</td>
<td>1,020</td>
<td>204</td>
<td>51,428</td>
</tr>
<tr>
<td>Private schools</td>
<td>552</td>
<td>426</td>
<td>699</td>
<td>1677</td>
</tr>
<tr>
<td>Govt. schools: Rural</td>
<td>47,515</td>
<td>964</td>
<td>175</td>
<td>48,654</td>
</tr>
<tr>
<td>Pvt. schools: Rural</td>
<td>515</td>
<td>388</td>
<td>541</td>
<td>1444</td>
</tr>
<tr>
<td>Total Enrolment</td>
<td>3,363,347</td>
<td>216,812</td>
<td>104,831</td>
<td>3,684,9</td>
</tr>
<tr>
<td>Enr. in Govt. sch.</td>
<td>3,255,551</td>
<td>189,763</td>
<td>25,788</td>
<td>3,471,102</td>
</tr>
<tr>
<td>Enr. in Pvt. sch.</td>
<td>30,664</td>
<td>43,277</td>
<td>141,242</td>
<td>215,133</td>
</tr>
<tr>
<td>Enr. in Govt. sch.: Rural</td>
<td>3,050,682</td>
<td>177,601</td>
<td>18,012</td>
<td>3,326,29</td>
</tr>
<tr>
<td>Enr. in Pvt. sch.: Rural</td>
<td>28,380</td>
<td>39,451</td>
<td>94,202</td>
<td>162,033</td>
</tr>
<tr>
<td>Total Teachers</td>
<td>118,924</td>
<td>11836</td>
<td>5612</td>
<td>136,372</td>
</tr>
</tbody>
</table>

*P=Primary, UP=Upper Primary, Sec=Secondary, HS=High Secondary
Primary grades are situated in stand-alone primary schools and as part of some upper primary, secondary and higher secondary schools. However, 95.6% of primary classes are situated in stand-alone primary schools. 97% of primary schools in the state are government schools. 95% of the government primary schools are located in rural areas. The total enrollment in government primary schools is 94% of the total primary enrollment in the state.\(^3\) The pupil: teacher ratio for primary schools is 28:1, with an average of 2.4 teachers per primary school. The average repetition rate for primary grades is 3.5% and the dropout rate is 12.7%. The dropout rate is the highest in grade 1 (22.1%).

(v) **Primary Education in Rajasthan: A Brief Overview**

The primary stage in Rajasthan includes grades 1-5. There are 33 districts in Rajasthan. The profile of primary school students, teachers and schools (NUEPA, 2010) are in Table 3.2.

Table 3.2: Rajasthan Primary Grades Data

<table>
<thead>
<tr>
<th>Key data: Elementary education</th>
<th>Primary only</th>
<th>P+UP</th>
<th>P+UP+ Sec/HS*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Schools (Cur. year)</td>
<td>50934</td>
<td>38652</td>
<td>9176</td>
<td>98762</td>
</tr>
<tr>
<td>Govt schools</td>
<td>46,568</td>
<td>25,859</td>
<td>2,769</td>
<td>75,166</td>
</tr>
<tr>
<td>Private schools</td>
<td>4,366</td>
<td>12,793</td>
<td>6,407</td>
<td>23,566</td>
</tr>
<tr>
<td>Govt. schools: Rural</td>
<td>43,747</td>
<td>23,703</td>
<td>2,584</td>
<td>70,034</td>
</tr>
<tr>
<td>Pvt. schools: Rural</td>
<td>3,354</td>
<td>8,636</td>
<td>3,474</td>
<td>15,464</td>
</tr>
<tr>
<td>Total Enrollment</td>
<td>3,957,474</td>
<td>5,967,235</td>
<td>1,574,729</td>
<td>11,499,438</td>
</tr>
<tr>
<td>Enr. in Govt. sch.</td>
<td>2,850,667</td>
<td>3,864,499</td>
<td>584,068</td>
<td>7,299,234</td>
</tr>
<tr>
<td>Enr. in Pvt. sch.</td>
<td>409,070</td>
<td>2,295,225</td>
<td>1,645,816</td>
<td>4,350,111</td>
</tr>
<tr>
<td>Enr. in Govt.: Rural</td>
<td>2,628,296</td>
<td>3,495,468</td>
<td>507,003</td>
<td>6,630,767</td>
</tr>
<tr>
<td>Enr. in Pvt.: Rural</td>
<td>303,624</td>
<td>1,610,515</td>
<td>889,098</td>
<td>1,610,515</td>
</tr>
<tr>
<td>Total Teachers</td>
<td>125,944</td>
<td>205,537</td>
<td>55,498</td>
<td>386,979</td>
</tr>
<tr>
<td>Govt teachers</td>
<td>95,211</td>
<td>135,285</td>
<td>18,693</td>
<td>249,189</td>
</tr>
<tr>
<td>Private teachers</td>
<td>19,092</td>
<td>92,443</td>
<td>57,106</td>
<td>168,641</td>
</tr>
</tbody>
</table>

\(^*\) P=Primary, UP=Upper Primary, Sec=Secondary, HS=High Secondary

Primary grades are situated in stand-alone primary schools and as part of some upper primary, secondary and higher secondary schools. Only 51.2% of primary classes are situated in stand-alone primary schools. 76% of primary schools in the state are government schools. 93% of the government primary

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\(^3\) DISE (District Information System for Education) data is collected from government and private schools each year. However, not all private schools participate in this exercise. The figures of number of private schools and enrollment in these schools are, therefore, lower than the real situation.
schools are located in rural areas. The total enrollment in government primary schools is 63.5% of the total primary enrollment in the state. The pupil: teacher ratio for primary schools is 31:1, with an average of 2.2 teachers per primary school. The average repetition rate for primary grades is 7% and the dropout rate is 11.1%. The dropout rate is the highest in grade 1 (15.1%).

3.4.2 Population for Studying Good Practices

Primary schools in Assam and Rajasthan where effective reading/learning programmes are being implemented under various schemes comprised the population for this research activity. The schools identified in Rajasthan as the population for study of good practices included schools where either the ‘Lehar’ programme (an activity based, multilevel learning model based on Tamil Nadu’s ‘Activity Based Learning’ method) or Room to Read’s Literacy Instruction programme was being implemented. In Assam, only those primary schools were included in the population where an earlier learning programme called ‘Bidyajyoti’ was still being sustained.

3.5 SAMPLE

3.5.1 School Selection Criteria

(i) Initially identified criteria

A total of 8 stand-alone primary schools (grades 1-5 only) were selected in 2 blocks of one district in Assam as per process described below. In Rajasthan, however, the 8 schools include 2 upper primary schools for reasons mentioned later. The following data was collected from each of the 16 schools:

- Observation of language classrooms of grades 1 and 2.
- Assessment of all students present in grades 1 and 2 on the date of data collection.
- Teachers’ interview of all teachers in the selected schools who were teaching language (Hindi or Assamese) in grades 1 and 2.
A combination of random and purposive sampling strategy was used to identify the schools for field work. The criteria for identification of schools for the sample identified at the proposal stage were as follows:

a. One district out of those that have an average EDI (Education Development Index), as prepared by NUEPA

b. The 8 study schools would be selected from among schools that have only primary grades, viz. stand-alone primary schools that do not have any upper primary or secondary classes.

c. The selected schools would have at least 3 teachers for the 5 grades. This will ensure that the multigrade teaching situation is not serious. Since the focus of the study is on identifying academic factors and understanding classroom teaching-learning processes, it is important not to study schools where teacher availability is low; multiple classes are seated together and the time the teacher spends in each grade is low. Such situations would not allow a proper study of the processes for teaching of reading in primary grades.

d. The sample would include only schools that function regularly; at least 150-180 days in a year, and for the prescribed number of hours each day. It is important to use this criterion since the focus of the study clearly being on pedagogical issues, and not basic school functionality.

e. Sample would include schools where most students have a first language that is very similar to the language used as the medium of instruction at school. Many other issues come in to play for teaching-learning of language and reading skills when the students belong to a totally different first language background which are not proposed within the scope of this study.

f. Schools that will be selected for field work will not be too remote (more than 5 Km from a pucca road). Schools in remote areas tend to be less functional with poor provisioning and do not help to provide an understanding of an average rural school. Also, this criterion is useful from the aspect of convenience of the field work.
(ii) Modified criteria: Assam

However, the actual school selection deviated from these proposed criteria, as described in Table 3.

**Table 3.3: Final School Selection: Assam**

<table>
<thead>
<tr>
<th>Level</th>
<th>Initial criteria</th>
<th>Modified criteria</th>
<th>Reason for deviation/other explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>District</td>
<td>One district out of those that have an average EDI (Education Development Index), as prepared by NUEPA</td>
<td>Morigaon district was selected in consultation with state SSA office as an average district with a higher proportion of functional schools.</td>
<td>NUEPA has discontinued calculation of district level EDIs due to the poor quality of data. There is no serious problem in Morigaon district about a gap between students’ home languages and Assamese. Also, Morigaon is close to the state capital; hence convenient.</td>
</tr>
<tr>
<td>Blocks</td>
<td>2 blocks to be selected randomly within the district</td>
<td>One randomly selected block had to be replaced. Blocks selected: <strong>Burbandha and Kapilli.</strong> 1 cluster selected in each of the 2 blocks on a random basis.</td>
<td>Most primary schools in this (replaced) block had only 1 or 2 teachers and the students’ home language was very different from Assamese.</td>
</tr>
</tbody>
</table>
| Schools | • Stand-alone primary schools  
• At least 3 teachers  
• School functions regularly  
• No big home language issue  
• Not too remote | • No change  
• 6 of the 8 schools selected had only 2 teachers.  
• No change  
• No change  
• No change | Only one school in the selected clusters has 3 teachers. Teacher recruitment had not taken place for several years |
(iii) Modified criteria: Rajasthan

Table 3.4: Final School Selection: Rajasthan

<table>
<thead>
<tr>
<th>Level</th>
<th>Initial criteria</th>
<th>Modified criteria</th>
<th>Reason for deviation/other explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>District</td>
<td>One district out of those that have an average EDI (Education Development Index), as prepared by NUEPA</td>
<td>Ajmer district was selected based on consultation with Commissioner Education.</td>
<td>NUEPA has discontinued district level EDI calculation.</td>
</tr>
<tr>
<td>Blocks</td>
<td>2 blocks to be selected randomly within the district</td>
<td>One randomly selected block had to be replaced. Blocks selected: <strong>Pisangan and Srinagar</strong> 1 cluster selected in each of the 2 blocks on a random basis.</td>
<td>One block was too distant from the district headquarters</td>
</tr>
<tr>
<td>Schools</td>
<td>• Stand-alone primary schools</td>
<td>• 2 selected primary schools (grades 1-5) had to be dropped and 2UPS (UP schools) had to be selected in their place</td>
<td>One primary school had low enrollment and very low attendance. The other had only one teacher because the other teacher was on long leave. The district has a severe shortage of teachers. Primary schools have low enrollments, and therefore, fewer teachers. In most of Ajmer district, students’ home language is <strong>Rajasthani</strong> (and several dialects within this language group). Therefore, there was a language issue in almost all schools.</td>
</tr>
<tr>
<td></td>
<td>• At least 3 teachers</td>
<td>• 6 of the 8 schools selected had only 2 teachers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• School functions regularly</td>
<td>• No change</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• No big home language issue</td>
<td>• No change</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Not too remote</td>
<td>• No change</td>
<td></td>
</tr>
</tbody>
</table>

3.5.2 Process for Selection of Schools

The process for school selection for Assam and Rajasthan is described below.

These are described separately because there was some difference in the procedure for finalizing the sample in the 2 states.
(i) School selection process in Assam

a. The state SSA office suggested Morigaon district. It was ranked 3rd out of 23 districts in Assam in 2008 when EDIs were last calculated. It is a small district, located not very far from Guwahati.

b. Morigaon district has 4 education blocks. Of these, 2 were randomly selected. However, one of the selected blocks had to be replaced since there was an acute shortage of teachers, and some teacher transfers were taking place even as the research was being initiated. Also, in a large part of the block, children spoke a language (dialect of Bengali) that is very different from the medium of instruction in schools, viz. Assamese. Therefore, this block was replaced and the 2 blocks selected for the study were Bhurbandha (original) and Kapilli (replacement).

c. The researcher visited at least 20 primary schools in the 2 blocks to familiarize himself with the context, school situation, locations etc. Having worked as State Project Director of DPEP (District Primary Education Programme) and Sarva Shiksha Abhiyan, the researcher was already very familiar with the general primary education scenario.

d. One cluster in each of the 2 blocks was selected in a purposive manner based on discussions with the DEEO (District Elementary Education Officer), BEEO (Block Elementary Education Officer) and the BRC (Block Resource Centre) Coordinator. This selection was based on convenience (not too far from the district headquarters); not including an urban area and not an area with deep poverty. However, the local educational administrators clarified that the 2 selected clusters were fairly representative of the 2 blocks.

e. All primary schools (grade 1-5) in these clusters were listed. 4 schools each were randomly selected from this list from each cluster. Familiarizing school visits were made to these 8 schools to meet the head teacher and other teachers of these schools and verify the enrollment and attendance. 2 schools out of these 8 had to be replaced for the following reasons:

- One teacher in one of the selected schools was on long medical leave and it was not appropriate to conduct the research in a single teacher school
• In another school, the teachers were found to be irregular and the attendance was very low on the date of the visit.

f. Selection of a ‘good’ school for identification of good practices (Assam):
The Bidyajyoti programme was identified as the learning improvement programme to be studied for good language teaching-learning practices. The Bidyajyoti programme was being implemented since 2002, and even though there had been a gap in its implementation in the past few years, it was possible to find some schools following the Bidyajyoti strategy. Since the idea was to select a school that was really following good practices in language teaching, the education officials were asked to select a school that they thought was doing well. This school was in an adjoining district with the catchment area having a similar socioeconomic profile to the 8 selected schools in Morigaon district.

(ii) School selection process in Rajasthan
Since EDI calculation had been discontinued, the state government was consulted for selecting a district. One criterion used for selecting the district was that it should be relatively better off than most others in terms of the basic education indicators. Ajmer district was suggested by the state government. Ajmer was ranked 9th out of 32 districts in Rajasthan when EDIs were last calculated in 2008.

a. Ajmer district has 8 blocks. 2 blocks were selected randomly. One of the blocks (Kekri) was very far from Ajmer. Based on consultations with the district education officials, Srinagar block that is adjacent to Pisangan was selected as replacement

b. In Rajasthan, the cluster arrangement has been discontinued by the state government. Therefore a list of all primary schools (PS) within 40 Km of Ajmer in both the blocks was drawn up. This list had 13 schools in one block and 15 in another, the rest were upper primary schools (UPS). Of these, 7 schools in one block and 9 schools in the second one were included under a learning improvement programme called Lehar. As per the criteria for school selection, these Lehar schools were not included.
c. From the initial school visits in the 2 blocks, it was apparent that some schools were not functioning regularly, and most 2 teacher schools had only 1 teacher attending on a regular basis. It was decided to visit all the 12 schools (after removing Lehar schools) that had been shortlisted in these 2 blocks. The situation was not encouraging at all. Still, 4 schools in each block were selected. Familiarization visits were carried out to these 8 schools. One school in each block had to be discarded because (a) the teachers were found to be negligent and it did not appear that they were actually teaching regularly (b) attendance was low (less than 40% of enrollment). A simple assessment of reading levels of a few students selected randomly from grades 1 & 2 showed that most did not even recognize all the letters in these 2 schools. This was followed by a discussion with the district and block education officials. They were quite candid in stating that all the remaining primary schools in that area would be in a similar situation. They suggested that 2 upper primary schools be included to replace the 2 primary schools. This had to be agreed to since it was not appropriate to go to a far off area where there could be fewer functional primary schools, even though selection of upper primary schools was not in keeping with the identified selection criteria.

d. Selection of a ‘good’ school for identification of good practices (Rajasthan):
Initially, it was decided to select a school where the activity based multilevel programme called Lehar was being implemented. However, after visiting a few Lehar schools and discussing with district education officials and DIET faculty, this was dropped because it was clear that the Lehar programme was yet to take strong roots in the schools in Ajmer district and teachers were still trying to understand the pedagogy. The classroom processes in these schools were still an unclear mix of the traditional and some Lehar strategies. Therefore, it was decided to select a primary school in an adjoining block of Ajmer district where Room to Read’s (an NGO working in the area of school libraries and early grades literacy) literacy instruction programme was being implemented.
3.6 TOOLS USED FOR THE STUDY: DESCRIPTION, DEVELOPMENT AND ADMINISTRATION

Table 3.5: Overview of Sample and Tools*

<table>
<thead>
<tr>
<th>Sample</th>
<th>Tool</th>
<th>Assam</th>
<th>Rajasthan</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>District Level</strong></td>
<td>Interview</td>
<td>DEEO &amp; DPC SSA; Pedagogy Coordinator, SSA; Principal and language department faculty from DIET; District Collector</td>
<td>DEEO &amp; DPC SSA; APC, SSA; Language department faculty from DIET; District Collector</td>
<td></td>
</tr>
<tr>
<td><strong>Block level</strong></td>
<td>Interview</td>
<td>Additional BRC; 2 BRPs for each block</td>
<td>Additional BRC; 2 BRPs for each block</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Survey Questionnaire</td>
<td>48 teachers from PS in 2 blocks</td>
<td>49 teachers from PS in 2 blocks</td>
<td>Interviewed teachers not included</td>
</tr>
<tr>
<td></td>
<td>Teacher monthly meetings</td>
<td>1 cluster level meeting with 28 teachers</td>
<td>1 block level meeting with 35 Headmasters of Nodal UPS</td>
<td></td>
</tr>
<tr>
<td><strong>Cluster level</strong></td>
<td>Interview</td>
<td>1 CRC Coordinator from each block</td>
<td>1 Nodal Headmaster from each block</td>
<td>CRC arrangement discontinued in Rajasthan</td>
</tr>
<tr>
<td></td>
<td>Focus Group Discussion</td>
<td>5 teachers from 3 schools</td>
<td>6 teachers from 3 schools</td>
<td>Schools located close to each other</td>
</tr>
<tr>
<td><strong>School level</strong></td>
<td>Student assessment School Background data</td>
<td>All students present in grades 1 &amp;2 on day of visit. Totally 164 students assessed</td>
<td>All students present in grades 1 &amp;2 on day of visit. Totally 209 students assessed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Classroom observation</td>
<td>16 classrooms (8 grade 1 and 8 grade 2)</td>
<td>16 classrooms (8 grade 1 and 8 grade 2)</td>
<td>8 schools in each state</td>
</tr>
<tr>
<td></td>
<td>Teacher Interview</td>
<td>10 teachers teaching language in grades 1 &amp; 2 in 8 schools</td>
<td>10 teachers teaching language in grades 1 &amp; 2 in 8 schools</td>
<td>All teachers in these 16 classrooms were interviewed</td>
</tr>
</tbody>
</table>

*DEEO=District Elementary Education Officer. DPC=District Project Coordinator SSA. APC=Additional Project Coordinator SSA. BRC=Block Resource Centre. BRP=Block Resource Person. DIET=District Institute of Education & Training.
In the following sections, each tool and data collection method is described under the following headings:

- Description
- Tool development
- Data collection process
- Validity and reliability
- Learning from implementation of the tool
- Limitations of the tool or its use for this study

The various tools may be seen at the Annexure indicated against each.

a. School background : Annexure I
b. Student background : Annexure II
c. Student assessment stages & individual student score sheet : Annexure III-A & III-B
d. Sample assessment items : Annexure IV
e. Classroom Observation Schedule : Annexure V
f. Lesson sequence record : Annexure VI
g. Time-on-Task Record : Annexure VII-A & VII-B
h. Questions Asked : Annexure VIII
i. Teacher Interview Guide : Annexure IX
j. Teacher Questionnaire : Annexure X

### 3.7 STUDENTS’ ASSESSMENT

#### 3.7.1 Description

As described in Chapter II, a set of skills need to be have been mastered in order for a child to read fluently with complete understanding. Most research in early grades reading identifies the following building blocks for successful reading in early grades:

- Oral language development
- Concepts of print
- Phonological and phonemic awareness
- Word recognition (decoding skills)
- Vocabulary
- Oral reading fluency
- Comprehension

The test used for student assessment for grades 1 and 2 was developed to assess the level of achievement in these crucial skills. Writing was also included to make this an essential skill-set for language learning in early primary grades. The test has been adapted from EGRA (Early Grades Reading assessment) developed by RTI (Research Triangle Institute) and Room to Read’s assessment test that was developed by NFER (National Foundation for Educational Research, UK) specifically for assessing early grades reading performance.

The test is a norm-referenced test that measures individual student performance as well as differences between students’ performances. The test is not designed as a criterion-referenced test because there are no predefined and absolute standards for the skills included in the test in Indian languages. However, for the analysis, some desirable outcome levels have been used to study the proportion of students achieving these levels. The assessment tool developed for this research includes the following stages:

**Stage 1**: Listening comprehension  
**Stage 2**: Letter recognition  
**Stage 3**: CV (consonant-vowel) combination recognition  
**Stage 4**: Familiar word reading  
**Stage 5**: Oral reading fluency and comprehension  
**Stage 6**: Dictation

*Stage 1* focusses on listening comprehension. *Stages 2-5* relate to skills of reading. *Stage 6* measures one kind of writing skills. Since students in all
classes are at different levels of reading ability, it is important that the test measures performance on stages in increasing order of difficulty. While stages 2 and 3 were common for grades 1 and 2, separate test items were designed for stages 1, 4, 5 & 6 for the two grades. This was done to ensure that the test is related to grade specific expectations. Fluency in letter recognition (stage 1) and reading CV combinations (stage 2) are foundational skills that must be mastered to be able to read words and sentences. Table 3.6 gives a description of the assessment test.

Along with the testing of reading skills, background information on each student was collected about parents’ education, occupation, home language, disability, books and reading at home etc.

Table 3.6: Stages of Assessment Test

<table>
<thead>
<tr>
<th>Stage 1 Listening comprehension</th>
<th>Objectives</th>
<th>Description</th>
<th>Difference between grade 1 &amp; 2</th>
</tr>
</thead>
</table>
|                                 | Answer comprehension questions after listening to a passage (Not a speed test) | Examines
  • Student’s capacity to comprehend an oral text.
  • Student’s language knowledge and speaking skills | The text was longer and more difficult for grade 2. |

| Stage 2 & 3 Letter sound knowledge and CV combinations | Name letter and CV combinations (2 minutes-not timed) | Student identifies the basic sounds at a reasonable speed. Fluency in letters and CV is an important foundation of fluency in word reading. | Same for both grades |

<p>| Stage 4 Reading familiar words | Reading 30 or 50 words (1 min) | Student’s ability to read simple and more difficult, but familiar words is tested at this stage. Automaticity in word recognition (speed and accuracy) is the basis for fluent reading | 30 common words for grade 1 and 2. In addition, grade 2 test included 20 more words with more letters and vowel signs and conjunct letters |</p>
<table>
<thead>
<tr>
<th>Stage 5</th>
<th>Oral fluency &amp; comprehension (60 seconds)</th>
<th>Objectives</th>
<th>Description</th>
<th>Difference between grade 1 &amp; 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Answering 6 questions after reading a simple passage (60 seconds for reading the passage) (A speed test)</td>
<td>Reading speed, accuracy and comprehension is tested by getting the student to read a passage and answer questions. 3 of the 6 questions were of the literal/recall type; 2 of simple inference type and one question relating to vocabulary knowledge. Oral reading fluency and comprehension are strongly correlated.</td>
<td>A longer &amp; more difficult text for grade 2. One comprehension question for grade 2 required higher order comprehension ability- where the student was expected to understand the main thought behind the passage and express an opinion.</td>
<td></td>
</tr>
<tr>
<td>Stage 6</td>
<td>Dictation (about 5 minutes) (Time is not checked)</td>
<td>Dictation</td>
<td>The student writes a sentence when dictated and corrects what has been written. Tests spelling and accurate writing skills.</td>
<td>7 words and 1 punctuation mark for grade 1. 13 words and 4 punctuation marks for grade 2.</td>
</tr>
</tbody>
</table>

### 3.7.2 Test Development

This is an achievement test that includes the core skills needed to read with understanding. The following 4 tools for assessing reading skills in early grades that have been used extensively were studied to finalize the test for this research.

- Early Grades Reading Assessment (EGRA) Tool
- DIBELS
- Room to Read’s assessment tool developed by NFER (National Foundation for Educational Research, UK)
- Pratham’s ASER (Annual Status of Education Report) test for reading and writing

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4 The Early Grade Reading Assessment (EGRA) is an oral student assessment designed to measure the most basic foundation skills for literacy acquisition in the early grades: recognizing letters of the alphabet, reading simple words, understanding sentences and paragraphs, and listening with comprehension. EdData II developed the EGRA methodology and has applied it in 11 countries and 19 languages. Can be accessed at: [https://www.eddataglobal.org/reading/index.cfm](https://www.eddataglobal.org/reading/index.cfm)

5 This tool was developed by the Centre for Teaching and Learning at the University of Oregon. It can be accessed at: [https://dibels.uoregon.edu/](https://dibels.uoregon.edu/)
These tests have a lot in common. They focus on measuring foundational reading skills like phonemic awareness, concepts of print, alphabetic principle (decoding or phonics), oral reading fluency, vocabulary and comprehension. The EGRA test has been adapted in 19 languages and used in 11 countries. DIBELS is used mainly in the US, but is based on the universally agreed principles of ‘learning to read’ in early primary grades. Room to Read’s test has been adapted from EGRA and used in 9 countries, including India. Pratham’s ASER reading test has been used annually throughout India for 6 years now to project district-wise reading scores.

In adapting these tests to the needs of this research, the following changes were made:

a. A new sub-test (stage) was created to test performance in reading CV combinations (letters with vowel signs-\textit{matras}-attached). This was added because during pretests in Assam, a majority of students were found struggling with \textit{matras}. This was also, the researcher’s understanding from his earlier work on Room to Read’s early grades literacy programme.

b. Time limits were not used for Stage 2 & 3. It was felt that it is more important to study the students’ knowledge of letters and CV combinations, rather than being too concerned with the time taken. Thus, a reasonable period of 2 minutes was allowed for each of these 2 sub-tests. This time was decided based on the time taken by an average student during the pretests.

c. In all the tests mentioned above, the same list of words and the same passage is used for testing grades 1 and 2. In fact, in the ASER test, 2 texts (grade 1 and 2 equivalent) are used to measure oral reading fluency till grade 5. Since this research is focussed on documenting students’ performance on grade appropriate standards, the words for stage 4 and the passage for stage 5 were prepared based on curricular expectations. The words appearing in the textbook were used a yardstick, though the words and passage were both of a medium difficulty level compared with the expectation level at the end of grade 1 and 2.
d. Some qualitative recording of the way students were reading was introduced for stages 2 and 5. These were then converted to predefined codes.

e. A section on availability of books and reading storybooks was added to the student’s background form to collect data about the reading habit of the students.

Based on these decisions, a draft Student Assessment Test was prepared in English with very detailed adaptation guidelines. The researcher then worked with 2 language experts in each state to finalize the following in Assamese and Hindi:

- Passage for stage 1 (listening comprehension) for grades 1&2
- Familiar words for stage 4 (30 for grade 1 and 50 for grade 2)
- Passage for stage 5 and comprehension questions for both grades

These were first reviewed by the researcher to check for strict adherence to adaptation guidelines. For Stage 1 and stage 5, three alternative passages (each) were developed for field testing. Similarly a larger bank of words was prepared.

These words, passages and comprehension questions were field tested with 8 students each from grade 1 and grade 2 in 2 schools in each of the states. Following the field testing, one of the passages was selected for each grade by making a few changes in some sentences and substituting some words. Some words that seemed unfamiliar to the students were dropped. There was good feedback on some comprehension questions, as the students did not understand what was being asked, or there could be more than one answer to the questions. During the field test, an effort was made to check if an average student who could read, was able to read most words and the passages. One finding, which the researcher was already expecting based on his earlier work on language and literacy, was that a majority of the students could not read well at all and the
words/passage was difficult for most of them. It was decided not to reduce the level of text since the objective was to assess the achievements against grade level expectations.

A scoring sheet was developed which was to be marked for each child for each stage. Also, reading cards were printed and laminated for students to read for different stages. Also, a detailed assessment test implementation and scoring guideline was prepared that was very useful during the implementation process.

3.7.3 Test administration
The assessments were done with the help of 2 research assistants who had worked on assessments earlier. This was necessary in Assam since the researcher is not a native speaker of Assamese. The same pattern was also followed in Rajasthan as it helped to expedite the assessments. This researcher was present all the time during conduct of the assessments and each student's scoring was discussed with the research assistant at the end of the test.

The following process was followed:

a. Orientation and practice: A two day training was conducted for the research assistants. On the first day an orientation was done that included basic principles of early grade reading including phonological awareness, concepts of print, phonics and decoding, fluency and comprehension and writing. The test was discussed at length. The following day, a practice assessment was conducted in one school with 3 children each from grades 1 and 2. At the end of each assessment, the process and scores were discussed at length. Initially, there was some difference between the 3 persons in the recording of scores for correct words read in one minute and the qualitative record of reading. These differences were resolved, and by the time the last students were tested, there was a very high degree of inter-rater consistency. This was followed by another session to rehearse the process finally.
b. The 3 member team visited one school every day. All students present on the
day of visit were assessed. Only if a class had over 20 students, the number
tested was restricted to 20 by a random selection of students. Each research
assistant took up assessment for one grade. The assessment for each student
took between 10-15 minutes. This included a conversation to fill up the
student background form and the 5 stages of oral assessments. The dictation
test was given as a group written test. Since many students could not even
read all the letters and very few CV combinations, the test took lesser time
since they could not even attempt the stages 4 and 5.

3.7.4 Validity and reliability

(i) Validity
Content validity was ensured by identifying the exact sub-skills to be included
in the test based on review of research in early grades reading. The widely used
assessment instruments like EGRA and DIBELS have documented content,
criterion-related and concurrent validity for the tests. The indicators/measures
for each sub-skill as well as oral reading fluency and comprehension have been
used in many assessments all over the world and also in India (Educational
Initiatives, 2010).

The major departure that was made from EGRA and Room to Read tests was
that grade specific test items were included for listening comprehension, word
reading, oral reading fluency and dictation. Content and construct validity of
the grade specific test items was ensured by matching them to the familiar
words and texts used in the textbook of that grade. The pilot testing of the
assessment test helped give confidence that the test items were clear and
unambiguous for the students.

(ii) Reliability
The test items were developed based on the detailed guidelines of tests like
EGRA. The following measures helped to ensure a high degree of reliability of
the test and results:
a. **Student related:**

- The assessment was carried out in an informal manner. The assessors used the local dialect to converse with the students before and during the assessment. Some test items had a story format and helped students become motivated to read and answer questions. The assessors used words of encouragement regularly to help students feel enthused. The instructions were simple and given clearly.
- The setting for the test was familiar to the students. They were sitting comfortably in a place with adequate lighting and little external or internal disturbance.

However, the format of the test was not familiar to them as it was not commonly used by teachers. An attempt was made to explain each test item in a conversational manner and get the students to practice a little before formally starting a particular stage of the test.

b. **Assessor-related:**

- The guidelines for marking were very clear and there was no scope for subjectivity. Each assessor had a student-wise scoring sheet where the reading cards were printed and he had only to mark every letter or word as read correctly or incorrectly.
- The extensive training and practice before the final assessments helped ensure that there was little or no variability in understanding of the 2 assessors. This researcher was present throughout the assessment process dividing time between the 2 assessors. This helped in achieving a high degree of inter-rater reliability.
- The ‘halo effect’ was not very relevant here since there was no subjective element in the marking, except for the recording of the nature of reading in categories to be chosen by the assessor. These categories were checked at the end of each day in the light of the performance on different test items and adjusted, if necessary.
c. *Instrument related:* The test items were very clear to the students. They were all related to what students were learning in their language class. The test was not too long. A student could complete the oral component within 8-12 minutes. Since the test items were not known to teachers, there was no chance of teachers giving students practice on the test items before the test. The teacher was not present during the test administration. The test was adapted separately in the 2 languages and local-cultural dimensions were considered. For example, the oral reading fluency passage for grade 2 in Assam had a reference to floods, but the passage for Rajasthan was about a drought situation.

d. *Statistical analysis related:* Statistical analysis was fairly straightforward. Most of the results have been presented using analysis of raw scores.

### 3.7.5 Learning from the Administration of the Assessment

a. The initial training and practice sessions with feedback and further practice are crucial to ensure inter-rater reliability

b. Young students need to be made to feel comfortable without feeling stressed about the test situation

c. It is important to help teachers and education officials understand that this is a low-stakes or no-stakes assessment and will not be used to reflect on the school’s performance. This was done successfully through initial meetings with district and block officials and preliminary familiarization visits.

d. Implementing a timed testing for fluency is not difficult. Students did not feel distracted with the use of a stop watch or a cell phone.

e. The test results proved to be a great starting point for discussions with teachers about students’ learning. Teachers appreciated that they could clearly understand each student’s learning through the test.
3.7.6 Limitations of the Test or Its Use for This Study

a. While the test items were directly related to the curriculum and the teaching in language classrooms, students did not have exposure to this kind of testing. Also, most students had not been exposed to any texts beyond the textbook

b. The test should have included criteria for stopping the test (not proceeding to the next stage) if the performance on a particular stage was very poor or zero. This could have saved time.

3.8 CLASSROOM OBSERVATION

The classroom observation instrument had 4 parts:

(i) Structured observation tool called Classroom Observation tool for observing and recording the teaching-learning process during the language class with detailed qualitative notes for different aspects of observation.

(ii) A Time-on-task tool for recording teacher and student activities to help calculate time-on-task and a quantitative analysis of the nature of activities of teachers and students.

(iii) A tool called Questions to record the number and nature of questions asked by the teacher and students

(iv) A detailed record, called Lesson Sequence, of the teaching sequence during the observed period. This included a record of the teacher’s and students’ activities.

Observations for these 4 parts were conducted as follows:
Table 3.7: Components of Classroom Observation

<table>
<thead>
<tr>
<th>Tool</th>
<th>Number of times</th>
<th>Duration</th>
<th>Teacher presence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Observation</td>
<td>3 periods on different days</td>
<td>Entire language period</td>
<td>Irrespective of teacher presence</td>
</tr>
<tr>
<td>Time-on-task</td>
<td>Once</td>
<td>45 minutes</td>
<td>Irrespective of teacher presence</td>
</tr>
<tr>
<td>Questions</td>
<td>Once</td>
<td>15 minutes</td>
<td>When teacher present in class</td>
</tr>
<tr>
<td>Lesson Sequence</td>
<td>3 periods on different days</td>
<td>Entire language period</td>
<td>Irrespective of teacher presence</td>
</tr>
</tbody>
</table>

3.8.1 Classroom Observation Schedule

A structured observation schedule for non-participant classroom observation was developed for the study. An observation helps a researcher gather data in a live situation instead of depending on secondary accounts or self reports. If done over a period of time, it can help recreate the reality of the classroom, at least in terms of observable behaviours and events. Classroom observations can be *structured, semi-structured or unstructured*. Given the nature of this study, where the objective was to compare the observed classroom processes with certain predefined desirable practices, an unstructured observation would not be useful at all. A semi-structured observation identifies issues in advance, but does not predetermine the manner of recording of these issues.

A structured classroom observation schedule has certain limitations. It represents a ‘positivist’ perspective and the assumption is that observing discrete and fragmented events and behaviour can help reconstruct the reality of the teaching-learning process. The criticism of structured observation is that it simplifies a complex, highly contextual process to a set of discrete observations that can be quantified or arranged in to mutually exclusive categories. Another point that is often raised with respect to structured observations is that they could tend to create simple indicators of observable behaviour for complex constructs. The selective observations may not be
adequate to infer the intention or motivation or perspective of the person(s) being observed, in this case the teacher.

For this study, a structured classroom observation schedule was considered as the most appropriate technique. All the essential aspects of classroom transaction that could influence language learning outcomes had been identified prior to the commencement of field work through review of research in reading and documentation of reading programmes. Therefore, it made much more sense to prepare a systematic and structured observation tool that incorporated these dimensions of teaching-learning process. Also, since one of the objectives of the data collection through classroom observations was to compare classroom processes within and across states, it was important to use a structured tool. A structured observation tool with predetermined points of observation and predefined categories for recording observations facilitates numerical analysis. In this research, one of the objectives was to present a descriptive analysis of the classroom situation across different situations and contexts in a somewhat aggregated manner. Therefore, a numerical analysis of some data was necessary.

It is true that the classroom observation tool for this study has identified selective aspects of the classroom process and the observations were recorded on clearly defined, mutually exclusive categories (e.g. Not at all true; true to a very limited extent; somewhat true and mostly true). The reasons for choosing a structured tool are mentioned in the paragraph above. However, this researcher does not subscribe to the oft-repeated dichotomy between positivist and interpretive research and structured versus semi-structured observation. In this research, the attempt has been to use both kinds of observations. The observation tool, which was highly structured, was supplemented with the following:
• Qualitative notes on each of the aspects being observed. These were running notes, not recorded as events or behaviours. The researcher attempted to understand the reasons behind the observed behaviour over a period of 3 days. These provided insights into the teacher and students’ behaviour over a period of 3 days and also some indication of the motivation and mental make-up of the teacher that resulted in observable behavior.

• Field notes on a daily basis on what was observed, and patterns and interpretation that came to the researcher’s mind.

• Informal interaction with the teacher at the end of each day’s observation to help understand her perspective on the classroom situation. This also helped get some clarifications from the teacher about a particular practice and her reason for following that practice.

The structured recording of classroom processes was not done during, or even after just one day’s observation. The observation tool was filled in after 3 days of observations and detailed analysis of the qualitative notes and other field notes from the visit. The rating scales included in the schedule require some judgement on the part of the researcher about the observed events and behaviour. This was considered as the most appropriate way of categorizing the observations since the interpretation of the qualitative notes would be really difficult a few days after completion of the observation. However, some entries in the tool, relating to observation of facts regarding physical setting, availability of books etc. were recorded during the observation itself.

The structured recording of events that happen at a specific instant or during an interval was limited to a small part of the total observational time. The time-on-task tool was recorded for one language class while the questions asked by the teacher and students were recorded only for 15 minutes on one day. This ensured that over the 3 days the researcher had enough time for more qualitative observations and taking detailed notes that would form the basis of
the inferential recording in the classroom observation tool and for later interpretive analysis.

(i) Description

The structured observation tool consisted of the following parts:

Part 1: Classroom environment including physical environment, print- richness and availability/access to appropriate books

Part 2: Classroom Climate

Part 3: Classroom organization and management and student engagement

Part 4: Language use in the classroom

Part 5: Instructional Strategy including lesson preparation, focus on learning and support to struggling readers

Part 6: Focus on oral language development

Part 7: Early grades language teaching practices including balanced literacy instruction; strategy for teaching decoding and text-based lessons, comprehension and fluency development, use of supplementary reading materials etc.

Part 8: Time distribution of a period where the focus was on decoding and where the focus was on reading a text

Part 9: Focus on writing

Part 10: Comment on time-on-task and other insights from the observation over 3 days. This is an interpretive section.

Parts 1-4 deal with classroom environment and climate and the general organization of learning (group work etc.). Parts 5-9 relate to the specific language teaching-learning strategies. Each part consists of related questions or indicators that together constitute a reliable description of a particular classroom process, e.g., oral language development. Some questions or indicators require a factual response (e.g., does the classroom have a library?); others require a more inferential one (e.g., was the teacher well prepared for the lesson?). The response to such questions requiring a judgement was noted in
categories like Not at all true, true to a very limited extent, somewhat true and mostly true. About 60 percent of the items in the schedule are rating scale items with 4 response options ranging from not at all true to mostly true. As mentioned earlier, these responses were to be filled in after the 3 days of classroom observation based on the detailed section-wise notes and other qualitative notes.

Under every major item, there is a space for qualitative notes. These notes help to substantiate the rating/response chosen for that item. Thus, the notes provide the evidence for a particular response to the item. In addition, the notes help describe the classroom process in some detail to amplify on the response selected. In some cases, the observed situation may not fit any of the categories/options provided in the schedule. The notes section help to clarify the real situation. For several items, there are specific questions to be answered in the notes section. For example, Part 5 has an item (5.2) called ‘Focus on student learning and assessment’. The Notes and evidence section has the following questions that need to be answered in the space provided for item 5.2:

- How is the teacher assessing the level of understanding and reading abilities of the students?
- What kind of record does the teacher maintain for students’ outcomes on a regular basis?
- What record is maintained for unit tests or term examinations? Are these test results used for any remedial work?
- What evidence was seen for the teacher adjusting the pace of the lesson based on feedback from students’ level of understanding or learning?

Apart from these qualitative descriptions and evidence recorded in the item-wise notes, the schedule requires recording of open-ended notes at the end of the schedule providing insights (beyond what is recorded under different items) regarding the language teaching-learning process. In this section, the researcher
has used an interpretive and critical analysis approach to get under the observed behaviours and explore the likely reasons for the observed behaviours of teacher and students and comment on his understanding, at that point in time, of which academic factors appear to be most crucial in influencing reading success or failure in that particular classroom.

In addition, photographs and brief video clips were recorded for specific aspects of the teaching-learning process to help in later analysis and as evidence for the responses recorded in the schedule.

(ii) Schedule development

The following steps were followed for developing and finalizing the classroom observation schedule:

- Identification of the major areas and sub-topics of observation related to classroom processes
- Review of existing observation tools relevant for this study.
- Identification of the items for observation within these broad areas; categories for recording evidence; development of operational definitions/descriptions for recording a particular entry on a scale; coding patterns
- Review of the draft tool by 3 primary stage language teaching-learning experts and incorporation of feedback
- Piloting of the tool in 4 classrooms in Assam and 2 in Rajasthan.
- Adaptation to specific lessons/topics being taught at the time of observation in Rajasthan & Assam.

a. Identification of topics for observation: Specific issues to be explored through classroom observation were identified based on (a) detailed review of research in language instruction, (b) documentation of effective strategies in different reading programmes, and (c) interaction with teachers and programme staff of some reading programmes. These included:

- Classroom environment and climate
• Availability and access to print
• Classroom management and learning organization, including group-work and student engagement
• Essential elements of effective language teaching: oral language development, phonological and phonemic awareness, varied activities for decoding, practice for fluency in word recognition, appropriate strategy for reading a text, fluency practice through use of additional graded materials, access and dedicated time for reading storybooks, focus on comprehension and vocabulary development, and graded writing practice.

These topics were further divided into sub-topics and key points of inquiry were identified for each sub-topic. For example:

**Topic:** Fluency, comprehension and vocabulary development  
**Sub-topic:** Reading strategy for a textbook lesson  
**Points of observation:**
- What was the strategy for modelling reading?  
- Was there a focus on comprehension?  
- Did students get enough practice for reading?  
- What kinds of questions were asked by the teacher?

b. **Review of existing observation tools:** During the literature review process, two kinds of classroom observation tools were studied to help the process of the schedule development for this research, viz. (i) Tools specific to observation of language teaching-learning processes, and (ii) Tools about general classroom processes. These are described below:

(i) **Tools specific to language teaching-learning processes**

• *Early Language & Literacy Classroom Observation Tool (ELLCO, grades K-3):*
  - Developed by a group of researchers at the Centre for Children & Families
at the Education Development Centre, Inc. (EDC) (see Smith et al., 2008)

- **Brief description**: ELLCO consists of 5 sections with 18 items. The Sections are: Section I: Classroom Structure; Section II: Curriculum; Section III: Language Environment; Section IV: Books and Reading; Section V: Print and Writing. Each of the items is constructed to describe the characteristics of classroom practices at five distinct levels, from *exemplary* to *deficient*. Each item consists of anchor statements for each level as descriptive indicators, which help guide scoring for each item. Also, for each item, evidence needs to be recorded from the classroom observation to support the level/score selected.

- **Classroom Observation Tool for language teaching-learning (grades 1 & 5)**:
  - Developed by this researcher for the study conducted on home and school language issues in 2003-04
  - **Brief description**: The tool focusses on the nature of teaching-learning process (teacher or student centred; students’ engagement in the process) and the use of different languages in the classroom. This provided qualitative descriptions of classroom processes along identified dimensions.

- **The Protocol for Language Arts Teaching Observation (PLATO) for grades 4 to 9**:  
  - Developed through the Measures for Effective Teaching (MET) Project at Stanford University, supported by the Bill and Melinda Gates Foundation.  
  - **Brief description**: It aims at assessing classrooms on selected classroom practices that have been shown to differentiate between more and less effective teachers. 4 levels of scores can be recorded on 13 PLATO elements. The following are the 8 major elements: (a)
Intellectual challenge, (b) Modelling, (c) Strategy use and instruction, (d) Guided practice, (e) Classroom discourse, (f) Textbook based instruction, (g) Behaviour management, and (h) Time management

- This tool focuses on language and literacy instruction in middle schools

- **Language Classroom Observation Protocol, Room to Read:**
  - Developed by this researcher and his team for Room to Read’s literacy instruction programme for grades 1 & 2 in 2011
  - **Brief description:** It includes the following areas: (a) Classroom environment, (b) Classroom activities, viz. a record of teacher and students’ activities every 10 minutes (c) Pedagogy: language teaching strategies, (d) Teacher interaction with students, (e) Students’ engagement, and (f) Personal reflection

- **Print Rich Classroom Environment (PRCE), Room to Read:**
  - Developed by this researcher and his team for Room to Read’s literacy instruction programme for grades 1 and 2 in 2011
  - **Brief description:** This tool is meant specifically for recording the availability and access to print resources inside the classroom. The components include (a) charts and posters, (b) display of children’s work, (c) functional print, (d) availability and display of books, and (d) access to books of appropriate level

(ii) **Tools about general classroom processes**

- **Classroom Assessment Scoring System (CLASS) for grades Pre K to 3:**
  - Developed by Robert C. Pianta, Karen M La Paro & Bidget K. Hamre in 2008 (University of Virginia)
  - **Brief description:** This tool is based on the premise that positive early childhood teacher–student interactions are the primary ingredient in creating quality educational experiences. Teacher-child interaction analysis is conducted along the following dimensions (a) Emotional support (positive climate, teacher sensitivity, regard for students’ perspectives) (b) Classroom Organization (behaviour management,
productivity and instructional learning formats) (c) *Instructional Support* (concept development, quality of feedback, language modelling, literacy focus). These 11 dimensions help assess the extent to which the teacher is supporting students’ development, both social and academic.

- **Accelerated Learning: Observing the classroom (AAC):**
  - Developed by firms DynaVox and Mayer-Johnson
  - *Brief description*: This observation tool is specifically meant for students using augmentative and alternative communication devices (AAC). The focus is on communication behaviour between teacher and students and between classmates. It has 4 parts-(a) Learning context, (b) Teacher communication behaviour, (c) Classmates’ communication behaviour, and (d) Student’s communication behavior. Though this tool is meant specifically for observing AAC students, it was studied since it offered a simple framework for studying communication of different kinds within a classroom

- **Towards Quality in Primary Schools: A toolkit:**
  - Developed by UNICEF in 2005 (first version) (see UNICEF, 2005)
  - *Brief description*: The classroom observation tool consists of several parts: (a) Teacher and students’ questions (b) Classroom environment, (c) Physical environment, (d) Lesson execution (questioning, clarity and communication, children’s active participation, lesson and class management), (e) Assessment, (f) Child grouping, and (g) Lesson preparedness.
  - Indicators have been developed for each of these foci of observation and ‘essential’ and ‘desirable’ levels have been defined for some of these areas.

Most of the classroom observation tools (just like the research and early grades reading strategies) from the West are far removed from the reality of our country. Since children are exposed to a lot of reading aloud at home;
significant foundational work happens in pre-kindergarten and kindergarten classes; the focus in early grades is mainly on reading; the classrooms are resource-rich; teachers are more qualified and receive high quality training, the expectations are higher and processes for language teaching-learning are far more comprehensive than can be expected in our classrooms. Therefore, while tools like ELLCO and CLASS are really good early grades language and literacy class observation tools, their items are not very relevant for the Indian situation. But, they did provide some ideas, as explained below.

The existing tools helped in identifying indicators and categories (response options) for different sub-topics. Specifically, the UNICEF toolkit had good examples for physical environment and classroom climate. The CLASS tool provided good inputs for teacher-child relationship questions. However, the classroom environment and climate were not a major focus of inquiry in this study. The items used in the ELLCO tool and the researcher’s own language study provided some examples for observation items on fluency and comprehension. Room to Read’s language classroom observation protocol was useful in framing response categories for different questions. The ELLCO tool was most useful in understanding how anchor statements or definitions can be framed for each item followed by examples for each of the response categories for each item. These descriptive indicators help provide an operational definition that can guide the recording of an appropriate category of response and improving reliability. The ELLCO tool uses a 5 point scale—exemplary; strong; basic; inadequate and deficient. For this research, a 4 point scale has been used for most items, viz. not at all true, true to a very limited extent, somewhat true and mostly true. The PLATO tool proved to be of a higher level, meant for grades 4-9, but it did provide good examples of operational definitions for some reading instruction strategies. Room to Read’s PRCE tool helped develop the items for assessing the print richness of the classroom environment including access to appropriate reading materials.
(iii) Development of items and operational descriptions

The items or indicators under each topic or sub-topic were developed to represent that behaviour or strategy. For example, for the sub-topic-'Focus on student learning and assessment’, the following items or indicators were developed that would, together, provide a picture of the teacher’s focus on student learning:

- The teacher has a clear focus on the learning objective for that period
- The teacher focusses on developing skills and not just teaching content
- Teacher uses frequent formative assessment to understand students’ learning levels
- Teacher maintains a record of each student’s progress
- The student progress record in regularly updated
- The teacher changes the pace of instruction after getting feedback that students are not able to keep up

Descriptive indicators or operational definitions or examples were developed for most of the items that needed such clarity. Initially, for all the rating scale items, a 5 point scale was worked out to keep conformity with most other observation tools. However, based on the pretest, the categories for the scale items were reduced to 4, as explained later.

(iv) Review of the draft tool

It was decided not to send the draft tool to linguists or even well-known language teaching experts. Most such experts have fixed ideological stands about language acquisition. They would have kept debating endlessly over the whole language and phonics approaches and such other issues. The tool was based on intensive research in to language instruction practices that have proved effective in early grades. The tool was not identified with a particular ideology of language acquisition. It was also based on this researcher’s deep insights in to the classroom situations across the country, especially Assam. Therefore, it was decided to get feedback from 3 persons who had worked on teacher professional development (with SCERT and DIETs) for language
teaching-learning for many years within the government system. The feedback was mostly about change in the language of some of the items and the descriptive indicators for several items. Another big issue brought up during this review was the adaptation of the tool to multigrade situations (where one teacher teaches 2 or more grades). This required significant tweaking of the tool. Certain options were introduced for different multigrade situations. Some additional response options were introduced based on this feedback. The feedback also helped identify points to be checked during the pilot.

(v) Pilot of the tool

Apart from testing the whole tool, a specific checklist of issues that had been identified through self-review and review by the 3 experts had been drawn up prior to the pilot. One of the reviewers, a Sr. Lecturer from a DIET in Assam was present with this researcher for the pilot. The pilot was done in 4 classrooms of 2 schools (two grade 1 and two grade 2 classrooms) in Assam and 4 classrooms in Rajasthan for only one language period per class. Prior to the pilot, a list of classroom contexts for language teaching had been drawn up after visiting 8-10 primary schools and talking to the teachers. The various situations that came up and had to be accommodated while finalizing the observation tool were:

- Two separate teachers for grade 1 and 2 language class
- One teacher teaching both grades 1 and 2; different subjects taught in different grades at one point in time (e.g. language and mathematics)
- One teacher teaching grades 1 and 2, but teaching language at the same time in both grades
- One teacher teaching more than 2 grades

While there was considerable variation in the manner in which one teacher managed language classes simultaneously in two grades, two broad patterns emerged in both Assam and Rajasthan. Some teachers would spend most of their time in one grade first and then shift to another grade classroom. During this time, the other (unattended) class did not have any activity/task assigned.
Another group of teachers preferred to move from one class to another frequently; teaching and explaining in one and moving to the other while giving some task to students in the earlier class. Thus several shifts were made from one class to another during one period. The observation schedule was adjusted to take in to account these varied situations.

The major modifications that were made to the tool after the pilot were:

- It was understood that a specific language class on any day in either of the two grades could be of the decoding (phonics drill) type or ‘reading a text’ type. In fact, one period could have two different types of instruction. Therefore, the tool for both grades would need to have sections/items relating to both type of instruction.

- The situation of language teaching (strategies, use of materials, students’ activities and learning) was really unsatisfactory. This was something the researcher had expected based on his research on language issues in 4 states in 2004. The 5 identified categories for the scale items, viz. exemplary/outstanding; very good/strong; basic or average; inadequate or below average and poor/unsatisfactory had to be modified. No classroom would (in either state) be at a level 5 (outstanding) based on the desirable practices identified. Therefore, the scale was reduced to a 4 point scale in response to the different items to read: mostly true; somewhat true; true to a very limited extent and not at all true. Thus, the revised set of options/scores was skewed towards a lower level of expectation from the classrooms.

- It also became clear that the tool must take in to account the specific lessons being taught around the time the final observations were conducted.

- The time distribution between taking notes for the classroom observation tool (and other qualitative observations) and the other 3 tools, viz. time-on-task, questions and lesson sequence was worked out for the 3 observations for the same classroom.

- From the pilot observations, it became clear that a significant proportion of students in each classroom cannot read. When choral reading or group
reading was being conducted, many students were only repeating after the teacher or the group leader. Thus, another activity called ‘repeating’ was introduced and the tool was modified to ensure that the researcher checked if students were actually reading or only repeating without reading.

- Since the classroom observation tool was to be filled up only once while each classroom was to be observed three times, additional guidelines were prepared about how to reach conclusions for different items based on 3 days of observations. The guidelines also indicate how to choose on a 4 point scale if different levels of practices were observed on different days.

- Since several teachers were found (in Rajasthan) to be not using the textbook at all, an item was added (8.3) to record the proportion of time when the teacher and students were found using the textbooks. Earlier the time distribution in Section 8.3 included only a record of time for which TLM was used.

- It was clear that some items required an observation/interaction with the teacher and students before/after the class. This was built in to the observation schedule for the following items:
  o Observing students’ progress records
  o Observe books available in the classroom
  o Observe TLM stored inside the classroom
  o Observe students’ notebooks to see nature and frequency of writing work done and corrected

- Several other small changes were made in the options for different items.

- The pilot in Assam preceded the one in Rajasthan, so most changes were incorporated after the first pilot. The Rajasthan school situations were very similar and no major change was needed for the state.

- The pilot also helped to understand the inter-rater consistency in recording of the classroom observation tool. Even though, the tool was to be filled in only by this researcher, it was decided to study its working in a two observer
situation. By the time of the fourth classroom observation, an inter-rater consistency of 97 percent agreement was reached.\(^6\)

**VI Adapting the tool to include the specific lessons being taught**

This was not really a change in the tool, but more a preparation for the researcher by becoming familiar with the specific lessons that were being taught in grades 1 and 2 during the school visits in both states. An observation is much more effective if the observer is fully aware of the content and sequence of the lesson being taught.

**VII Data collection process**

Each classroom was observed for all the language periods on 3 consecutive days. Ideally, observations should be conducted over a period of time (several months) to allow for observing varied kind of instructional strategies and adequate time to observe the attitudes and motivations of the teacher and students. However, such a long period of time was not available for this study. Two options were considered—(a) Observation on 3 consecutive days and (b) Observation on 3 days spread over 10 days. Based on consultation with block and cluster coordinators (in Assam), the former-observation on 3 consecutive days- was chosen. The main reason for this decision was that all aspects of a lesson (model reading, reading in groups, decoding practice and writing) could be observed if the class was observed on consecutive days. This would be more meaningful than appearing in the classroom without clarity on what is expected to be taught on that day (if the days were separated out over a period of 10 days). It was also felt that the element of *reactivity* would have reduced by the third day of observation if the researcher shows up every day for 3 days. This was not ideal, but given the timeframe and resources, there was no other option.

As indicated in Table 3.5, the first day was focussed more on recording the time-on-task tool. On the second day, in the first 15 minutes (when the teacher

\(^6\) This was based on the simple formula: \( \frac{\text{Number of times two observers agree}}{\text{Number of items on which their individual scores were compared}} \times 100 \)
was present), the focus was on recording questions asked by the teacher and students. For the rest of the time, on second and third days, the focus was on observing the classroom based on the aspects included in the observation schedule, but also recording open ended notes and insights. The lesson sequence describing the overall flow and sequence of activities in the classroom was recorded on all three days.

A DIET faculty member accompanied me to the classroom observation in Assam on all days. In Rajasthan, a field researcher trained with Digantar(an education NGO) was my co-observer. All the recording was done by this researcher, but the co-observer took parallel notes for the time-on-task and the classroom observation schedule. The major reasons for having a second observer were:

- It ensured that notes and observations could be compared at the end of each day to check if this researcher had missed out anything.
- It was possible to get additional insights about the observed classroom, especially on interpretive issues like the teacher’s motivation and understanding of basic principles of early grades reading/language instruction.
- With two persons, it was possible to ask the co-observer to unobtrusively take photographs or video clips without disturbing the class. It was also possible for one person to move around briefly to observe group work and students’ writing.
- When observing a class in a multigrade situation, the teacher, sometimes, tended to stay on in the class where the observers are located for a much longer period than usual. This would not provide a clear picture of how language teaching was taking place across two grades. This researcher asked the co-observer to, sometimes, sit in the other class the teacher was expected to teach (in parallel). The teacher would then get the impression that both classes were
being observed simultaneously, and she would spend a similar amount of time in both classes.

The observation was completely non-participant and the observers did not interact at all with the teacher or the students during the language period. If the observer had to ask any question of the teacher or look at the student progress record, it was done only at the end of the period. The observation was conducted after the student assessment had been completed in the school. Therefore, the researcher had a clear idea of the students’ achievements in each classroom.

(viii) Validity, reliability and objectivity

a. **Content validity:** The observation areas had been identified systematically, based on the essential elements of good early grades reading and language instruction. Therefore, the schedule includes all these identified elements. Also, the sub-topics and items were identified based on literature on effective reading strategies and the various tools that were consulted. The review by language teaching-learning experts also helped ensure that most crucial items were included.

b. **Construct validity:** The construct of reading was the starting point of this research. Reading fluently with understanding is a complex combination of several skills. Wolf & Katzir-Cohen (2001) have defined fluency, and by extension successful reading, as the efficient orchestration between several multi-dimensional processes and componential skills. Therefore, the development of various instruments used for this study, including the classroom observation tool have taken in to account the different elements of reading skills and teaching strategies as outlined theoretically and pragmatically in research and programme documentation.

c. **Intra-rater validity:** Since this researcher had designed the tool, including the development of definitions or descriptive indicators for each item, and conducted pilots in 8 classrooms, he was very familiar with the items and categories and clearly understood the meaning of each item and score. It is
true that sometimes there was a doubt about the option or rating score to be recorded for a classroom, but it was resolved by looking at the notes of the observation for the classroom and a few other classrooms observed earlier. Since the observation schedule was finally filled only after 3 days of observation, there was adequate time to look at the notes before deciding a score/option. Sometimes, a score was tentatively recorded in pencil even while the observation was happening so that the initial inference was available to review.

d. Inter-rater reliability: This was not an issue for this study because all items were scored and all qualitative notes were finally written by this researcher. Any discussion and comparison of notes with the co-observer was done only to check if something has been missed and get an added perspective. The additional insight was really useful in most of the observations.

e. Pilot to enhance validity: As mentioned earlier, the pilot in 8 classrooms in Assam and Rajasthan helped ensure that all the categories and options included as a part of different items were appropriate (they truly represented the behaviour/event they were supposed to represent), they were discrete with no overlap, unambiguous with clear descriptions (so that there is no doubt about the difference between one category and another), adequate (i.e. all categories between them cover all possible classroom situations/behaviours that could come up in the course of observation). Several changes were made based on the pilot.

f. Reactivity effect: An effort was made to minimize this by sending messages through the cluster and block personnel about the objectives of the research and how there is no effort to judge or evaluate any school or teacher. This message was reiterated by the researcher during his interactions at school. The constant refrain was that teachers should teach in exactly the same manner as they do on a regular basis. This was initially a bigger problem in Assam since most teachers knew of this researcher’s work in education. In fact, the first day’s observation in the first school had to be nullified because it seemed like an artificial performance. This was then discussed with the
school teachers and the block education officials. It was clearly explained that the research would help portray the situation of language teaching-learning in the classrooms and the problems that teachers face in teaching young children to read in multigrade and poorly resourced situations. By putting in too much effort, teachers would be portraying a rosy picture of the classroom situation and their real problems in ensuring that students learn effectively will not get highlighted. This conscious (minor) distortion of the research objective convinced almost all teachers to teach the class as they would normally do. Of course, some element of reactivity would always remain in such observations. It can be safely assumed that the teachers were more active on these days than they would normally be. During the course of the observations, and by looking at the students’ work, it was possible to understand how differently the teacher was teaching during observation. However, there is no way it could be quantified. The one element of reactivity that teachers had to be constantly reminded not to do was spending more time in the class being observed in a multigrade situation. Often, the correction worked better during the second and third days of observation.

g. Observer omission or selective attention/recording-‘Expectancy effects’: There is no doubt that this researcher was constantly reflecting on the observations, recording insights, formulating tentative inferences as the research progressed. So, there could have been an element of subjectivity and wanting to see and record what seems to be a pattern. The presence of a co-observer and the rigorous discussion (2-3 hours) at the end of each day’s observations definitely helped in being reminded of any missing record of a particular behaviour. Also, insights were shared and comparisons made with the previous classrooms. This helped improve the objectivity of the observations.

h. Faulty memory or attention deficits: The extensive real-time note-taking to record supporting evidence for the items in the schedule helped to avoid gaps. The presence of a co-observer was useful in covering any attention deficits.
Sometimes, work was divided, e.g. when this researcher was watching the teacher’s activity, the co-observer focussed on students’ activities.

i. **Recency effects**: Since the final rating scale categories were decided after consulting notes of all 3 days, recency effect was minimized.

j. **Halo effect**: This does operate and has to be consciously avoided. The teacher interview was conducted at the end of the 3 days observations. Therefore, the observation records were based entirely on what was seen in the classroom.

k. **Central tendency effect**: Clear definitions had been worked out for each category—different points on the rating scale for each item. Therefore, the risk of a majority of scores centring on the midpoint was avoided. The fact that most classrooms were really distant from the desired practices also helped avoid the central tendency effect.

l. **Counter-transference and interpersonal relationships**: Some reflexivity definitely creeps in to observations based on an observer’s preferences. It was reduced by having a co-observer and the daily evening reflections and the recording of notes for each section showing evidence of observed behaviour. There was little interaction with the teacher during the 3 days, except to ask some clarificatory questions. This helped maintain objectivity.

(ix) **Learning from the conduct of observations**

a. It is possible to reduce the reactivity element by repeatedly informing all concerned that the study was not an evaluation of the teacher or the school. By asking teachers about their problems and explaining the research objectives, it is possible to get them in a frame of mind where they see themselves as contributing to a documentation of issues and constraints in the teaching of language in primary grades.

b. A second observer helps in enhancing objectivity, reduce bias and discuss insights and reflection

c. Mandatory writing of notes that provide evidence for the rating scores that are recorded for each item is good practice

d. Clear descriptions of each item and their categories are very useful
e. The pilot is very crucial in testing the tool and significant changes may need to be made following the pilot

f. It is important to be aware of all the possible classroom contexts before finalizing the schedule, so that all situations can be accommodated in the schedule

g. It is important to get some clarifications from the teacher at the end of the class about a particular classroom practice, and understand her rationale for doing that. This enriches the later interpretive analysis.

(x) Limitations of classroom observation in this study:

a. Some teachers were definitely more active during the observation than their real practice. They refrained from sitting down for most of the language period and, probably, allowed more student participation than normal.

b. The classroom observation could have been a strong component of a comprehensive case study of individual classrooms with ‘thick descriptions’ that focussed on individual contexts and attempted to understand the motivations and underlying reasons for the observed teacher behavior in each situation. In this study, while qualitative descriptions and insights were an important component of the analysis, there is no attempt to prepare detailed individual classroom case studies for all classrooms.

3.8.2 Time-on-Task Tool

The time-on-task tool helped to collect numerical data to get quantitative estimates of time spent by teacher and students on different activities as well as estimates of ‘quality’ of the time by identifying the nature of activities and how they support student learning. This is done by taking repeated ‘snapshots’ (instantaneous records) of the classroom at predefined intervals of 3 minutes. The following objectives were achieved using time-on-task data:

- Identifying the nature of teachers’ activities during the language class and arrive at a percentage time distribution, e.g. teacher-centred and student-centred activities
• Percentage time distribution of students’ activities, e.g. copying and rote activities, passive and interactive learning activities etc.
• Relationship between teacher and student activities
• Proportion of time when students were ‘on-task’ or ‘off-task’
• Proportion of time when textbook and TLM were used

(i) Description
The tool consists of 15 snapshots to be recorded in 45 minutes of observation, i.e. one every 3 minutes. The data to be recorded every 3 minutes included:
a. What was the teacher’s activity during the minute of the observation?
b. What were students doing at that time? Since students may not all be engaged in the same activity, up to 3 different activities were recorded for the students (every 3 minutes), indicating the number of students engaged in these activities.
c. How many students were ‘on-task’ and ‘off-task’ at that point?
d. What were most students doing during that minute? (To be chosen from listening, speaking, reading, writing, watching, repeating and no activity).

The activities had been coded in advance, so only a number had to be entered in a cell.

(ii) Development of the tool
This tool is based on the Stallings’ Observation tool that has been used widely around the world for recording classroom events and teacher/student activities. This was directly adapted from the tools used in India for the following large scale time-on-task studies:
• Ministry of Human Resource Development, Government of India’s Time-on-Task study in 3 states in 2010. This included 100 government and 20 private primary schools in each of the 3 states.
• World Bank’s Time-on-task study in 3 states in 2009

7 This method was developed by Jane A. Stallings. The Stallings’ Observation System was developed in the 1970’s to evaluate how elementary teachers and students used their time in classrooms. It has been adapted by the World Bank and several academic institutions and international agencies to study the time-on-task in classrooms.
• Tamil Nadu SSA’s Time-on-task study in 80 schools in 10 districts in 2009

Since these are recent studies carried out in government schools similar to the ones where this study was conducted, the researcher did not make any major modifications to the tool used in these studies. These studies included Language, Mathematics and EVS (Environmental Studies) classrooms. Some modification in the list of activities was carried out to ensure the relevance for language classrooms. Some minor modifications were made prior to the pilot. These were:

• Inclusion of 2 new activities and minor changes in 2 other activities in the list of teacher and student activities. This was done with the perspective of focusing on language period only
• Preparation of a simple format for quick recording of numerical data
• Addition of one record: What were most students doing at the time of observation? Initially only 4 options were selected in the draft tool, viz. listening, speaking, reading and writing.

(iii) Piloting of the tool

This tool was piloted in 4 classrooms in Assam and 4 in Rajasthan. Apart from testing the appropriateness of the tool, the pilot also served as useful practice for the researcher and co-observer prior to the real observations. The pilot in Assam threw up a few issues and changes were made accordingly:

a. A student activity was added, viz. ‘correcting each other’s notebooks/classwork or homework’

b. To accommodate multigrade situations, the activity ‘Teacher not in class’ was divided in to 2 activities, viz. ‘Teacher has no activity/out of classroom’ and ‘Teacher in other multigrade class’

c. The guidelines for the tool were finalized including assignment of numerical values to ‘All’, ‘Most’, ‘Some’, and ‘Few’ for the recording of students’ activities.

d. Several examples were added to the teacher and student activities to ensure intra-rater reliability
e. The pilot threw up another interesting issue. The researcher observed that in all 4 classrooms in Assam, a significant proportion of students were just ‘watching’ or ‘looking’ at the blackboard or another student when s/he had been called to the board to write or for answering a question or reading at the head of the class. This happened for several minutes in each of the pilot classrooms. Also, there were considerable periods of time when few/some/most/all students were distracted and not engaged in any activity. Another activity that had not been thought of in the draft time-on-task tool was ‘repeating’ after the teacher or another student who is reading. Observing the class closely, it was seen that many students were (often) not reading, but just repeating the words following the teacher or a student. Therefore, 3 new activities were added for the record—‘Most students were’. These were-(a) repeating (b) watching, and (c) no activity.

(iv) Data collection for time-on-task tool
For each classroom, data on teacher’s and students’ time-on-task was collected for one 45 minute period. This was done without considering if the teacher was in the class or not for the entire time. For every observation (every third minute), first the teacher’s activity was noted. Then, in a systematic manner, all students were observed starting from one end (in a clockwise direction) and estimates of numbers of students engaged in different activities were made and recorded. This record was also made by a co-observer. While, a very high level of congruence was observed in the time-on-task records between this researcher and the co-observer, the practice of both keeping records was continued throughout the study. This helped cross-check entries at the end of the day and gain confidence about the record.

(v) Validity and Reliability
The Stallings’ Observation System has been used in a large number of studies all across the world and, more recently, in India. The tool used for this study was very similar to the ones used in the recent studies in India. The following steps ensured that the data was valid and reliable:
a. The data collection was done by this researcher and there were no issues about inter-rater reliability. The record of the co-observer was used to only cross-check for any mistakes.

b. The definitions and examples for each activity were provided in great detail. Also, the practice in 8 classrooms in the 2 states ensured that there would be no confusion in recording the activity codes (high intra-rater reliability).

c. The ‘lesson sequence’ record that included a qualitative listing of teacher and student activities with the time duration was consulted whenever a doubt arose about a particular entry in one snapshot. This was a kind of triangulation to ensure complete confidence in the data for the time-on-task tool.

(vi) Learning from data collection of time-on-task

a. Piloting of the tool and its adaptation to a local context (e.g. multigrade situation) is a crucial step

b. Any researcher implementing this tool should get enough practice in actual classroom situations to ensure reliability and confidence in making entries.

c. It is important to keep space for a qualitative comment that could clarify a particular classroom context for better interpretation of the results.

(vii) Limitations of the tool or its use for this study

There is a limitation in the comparability of the findings across all classrooms because the availability of teacher in the classroom varies from school to school owing to a variety of multigrade situations and practices. This does not cause a problem in arriving at an overall picture of ‘quantity’ and ‘quality’ of instructional time, but comparisons of 2 or more classrooms has to be done carefully.

3.8.3 Questions Record

This is a small tool taken directly from Towards Quality in Primary Schools: A toolkit, developed by UNICEF (See UNICEF, 2005). It was used to record the number and nature of questions asked by the teacher during a 15 minute time period when the teacher was transacting a lesson. It also recorded the
number of questions asked by the students (boys and girls, separately). Only those questions were recorded that required a response from the students. Thus, rhetorical questions and questions that were not really meant to be answered by students were not included. During these 15 minutes, no other tool was taken up for data collection.

3.8.4 Lesson Sequence
This is a simple documentation of all three language periods that were observed that records the lesson transaction sequence and flow. The record indicates teacher’s activity (e.g. the teacher is explaining the use of long vowel sign ‘ee’ by showing a flash card), and students’ activities over the entire language period. The time duration for a particular activity is also noted. This descriptive record helped in analyzing the teaching method used by the teacher; the sequence of the lesson and the use of materials; and students’ engagement in the teaching-learning process.

3.9 INTERVIEWS

3.9.1 Description and Development
A semi-structured interview method was used for this study. This is somewhere between an informal conversational interview and a structured formal interview. This is also called the ‘interview guide approach’. (Patton, 1990, p. 206). In this approach, the topics and issues to be covered are specified in advance. The interviewer decides the sequence and wording of questions and explains the questions during the course of the interview. However, as far as possible, a similar wording was used for all interviewees. The responses were recorded in an open-ended manner. This allowed the interviewees to express themselves naturally and further probing questions could be asked. This also helped to delve deeper in to a particular issue with a particular interviewee depending on her interest, knowledge and willingness to share thoughts. However, a set of core questions with the same meaning (and, usually, the
same wording) were asked of every interviewee, and therefore, the responses to these questions could be compared across schools and region for the sample.

*a. Teacher Interviews:* The main purpose of the teacher interviews conducted in this study was to validate data from other methods like classroom observation, and attempt to understand teachers’ perceptions and reasons for their classroom behaviour. Since the interview was conducted after the assessment and classroom observation were completed, it allowed the researcher to discuss some findings regarding student learning and classroom practices with the teacher.

The primary purpose of the teacher interview was to help in a better understanding of the context of a particular classroom by triangulating results from student assessment, classroom observation and teacher’s interview. However, given that a core set of questions were common across all teacher interviews, it was possible to compare responses across classrooms. This was supplemented by specific follow-up questions based on the need in each interview.

The core set of questions in the interview guide covered the following topics:

**Part I:** Teacher’s personal details and information on trainings: Closed questions

**Part II:** General: Interest in teaching; job satisfaction etc.

**Part III:** Instructional time and multigrade teaching

**Part IV:** Reasons for low student achievements and suggestions for enhancing Learning

**Part V:** Teacher’s understanding of the importance of reading and language learning; use of storybooks.

**Part VI:** Teacher’s perceptions and practices related to the essential elements of effective reading instruction

**Part VII:** Teaching of English and other subjects
**Part VIII:** Equity issues: dealing with students lagging behind

**Part IX:** Formative and summative assessment and corrective action based on Assessments

**Part X:** Training and academic support

**Part XI:** Open-ended suggestions about language teaching-learning

A set of core questions were identified under each part which were asked, usually, with the same wording, but with explanation and modifications in wording, where necessary. The sequence of discussing different parts and questions under each part differed from one teacher interview to another. For example, in a school where virtually no student could read more than a few words in a passage, a good starting point for the discussion was the teacher’s understanding of the reasons for this situation.

b. **Interviews with academic personnel at cluster and block levels:** The interview was again semi-structured with a set of core questions identified in the interview guide. However, for this group, there were several questions that were included after the completion of all observations and teacher interviews. Therefore, several questions were specific to the preliminary findings in that block. The core set of questions attempted to get to the perceptions of these academic support personnel about classroom processes, in-service training of teachers, multigrade teaching, curriculum, textbooks and workbooks, reasons for low student achievements and the role of academic support in improving student learning, and suggestions for improving language teaching-learning at the primary stage. From some of them, specific information was sought about number of working days, instructional time, term tests, time spent on visiting schools for academic support etc.
3.9.2 Conduct of Interviews

a. *Teacher Interviews:* All teachers teaching language in grades 1 & 2 in the selected schools (where assessment and observations were conducted) were interviewed. A total of 19 interviews were conducted (9 in Assam and 10 in Rajasthan). The interviews were conducted at the end of the third day of observations at a time convenient to the teachers. This was usually the end of the school day or just after the MDM (Mid Day Meal).

At the beginning of the interview, the researcher expressed sincere appreciation towards the teacher for accommodating the researcher in the classroom. During the interview, a sincere attempt was made to make the teacher feel that she could express herself freely and her thoughts would contribute to the understanding of issues related to early grades language teaching-learning. Almost all teachers (except one) felt comfortable discussing the topics identified for the interview. Even when clarifications were asked about a specific classroom practice or attention was drawn to poor learning achievements in the class, the approach was not one of questioning or criticism. A conversational mode was maintained. Even though the classroom practices of some teachers were really unsatisfactory, this was not pointed out in a negative manner during the interview. Adequate time was provided towards the end of the interview to the teacher to ask questions about the research, some preliminary findings and any other issues. Several teachers wanted to know how they could improve their classroom practice. In such cases, some examples of their practice were selected and a few options for improvement were suggested by the researcher. It did not seem right to move away without this discussion.

Some teachers had no thoughts about some of the academic issues, e.g. suggestions for improving learning or the teaching of new vocabulary (even when they were encouraged to think for some time). Therefore, a few questions had no response or a very sketchy response from some teachers.
Teachers tended to spend more time describing their problems and explaining why they were not able to do teach effectively.

The interviews were conducted in Assamese (in Assam) and Hindi (in Rajasthan) by this researcher. No other person was present when the teacher was being interviewed. The interviews took about an hour on an average. Summary notes were taken during the interview and detailed notes were typed out within a day or two.

b. Other Interviews:

- **Assam**: The following persons associated with training and academic support were interviewed:
  - CRC Coordinators of the 2 clusters (in 2 blocks)
  - Additional BRC Coordinators of the 2 blocks
  - Principal DIET and a faculty member responsible for language
  - District Programme Officer (Teacher Training) from the district SSA office

- **Rajasthan**:
  - Block Resource Persons (BRP): One from each block. The CRC arrangement has been dismantled in Rajasthan.
  - DIET faculty member responsible for language teaching and research

These interviews tended to be more open-ended as issues arising out of the school based field work were discussed. Three common themes included with this group were (a) Suggestions for improving teaching-learning of language (b) role of in-service teacher training and regular academic support (c) Making the system more accountable for student learning.

### 3.9.3 Validity and Reliability

The interview questions were designed to supplement the classroom observations and for understanding teachers’ knowledge, perceptions and
attitudes for the different aspects of language teaching-learning in early primary grades. To that extent, the face validity of the set of questions was ensured.

Inter-rater reliability was not an issue since only this researcher was conducting the interviews. One element that lowers reliability is changes in wording and emphasis of the questions. For the set of core questions, the standard wording was usually maintained. The sequence/entry point was different, at times. The issue of power of the interviewer was an important one because the teachers were aware of the researcher’s identity as a senior civil servant. In Assam, they also knew about the researcher’s long association with DPEP and SSA. The unassuming behaviour of the researcher during the assessments and observation helped to an extent in making the teachers feel at ease. During the interview, the respondent was made to feel comfortable and a conversational setting was established. Most teachers were happy that they were being heard and said they rarely got an opportunity to talk about their classrooms and problems they face.

The other big issue in interviews is the ‘interviewer bias’. It is true that the assessments and observation generated an opinion about the teacher even before starting the interview. However, the researcher was conscious of this and spent the same amount of time with the same questions even with teachers whose classroom practice was really inadequate. The other problem that is common is that the researcher tends to selectively record the respondents’ responses because he already has an opinion about the issue and would like the interview to substantiate that viewpoint. This researcher was acutely aware of this problem and made honest notes that reflected the respondents’ real thoughts. It is true that some teachers and academic personnel gave responses that they assumed were the ‘desired’ responses. In such cases, the researcher had to confront them with the reality of the students’ learning levels and classroom observations. That helped in getting more honest responses, usually.
3.9.4 Learning from Conducting the Interviews:

a. Teachers will be honest in expressing their thoughts if they are convinced that their names will not be disclosed. Also, informing them that their opinions would help formulate the findings of a study that can help project the problems and issues in teaching-learning to the higher authorities is of help.

b. Teachers, and others who were interviewed, were more forthcoming when they knew that the researcher has a good understanding of primary education and had studied the results of assessment in their schools and they could have a good dialogue with him on language teaching and learning.

c. Allowing the respondents to speak freely and articulate their problems and constraints puts them in an appropriate frame of mind.

d. The responses from academic staff like CRC, BRC, and DIET were more candid and useful in Assam than in Rajasthan.

3.10 FOCUS GROUP DISCUSSION (FGD)

Only one FGD was conducted per state with a group of 5-6 teachers from 3 primary schools located near each other. The group was homogenous to the extent that they were all primary school teachers from multigrade schools whose catchment areas had very similar socioeconomic situations. These schools were part of the 8 schools selected for the detailed field work. Therefore, they were familiar with the objectives of the research. The groups were given just two questions to discuss among themselves: *Students are not learning to read and write well in the first two primary grades. What, in your opinion are the reasons for this situation? What can be done to improve student learning?*

This researcher did not speak much during the discussion, except when a course correction was needed when the discussion wandered away in a
different direction. Often, the teachers tended to become very general in their views and also focus mainly on their service problems. This researcher had to bring the discussion back to focus on the academic issues related to language teaching and learning.

3.11 TEACHERS’ SURVEY: QUESTIONNAIRE

3.11.1 Description
It is a closed structured questionnaire that could help aggregate responses, analyze patterns and compare responses across regions.

The questionnaire had 3 parts:

Part I: Language Teaching and Learning
Part II: General Issues in Teaching
Part III: Personal Information of the Teacher

The personal information of the teacher was asked for in Part III, after the teacher had completed responses on the main content questions. The idea was not to get the teacher concerned about his personal details being included while he was filling up the questionnaire. At the beginning of the questionnaire, the objectives of the research were mentioned. Also, steps taken to ensure confidentiality and anonymity were included. Teachers were given the option of not including their name.

The major sections of the questionnaire were:
- Teachers’ perceptions about language teaching-learning, importance of reading skill and good instructional strategies
- Student learning: reasons for low levels
- Language teaching-learning strategies and classroom activities
- Perception about the language textbook and its use in the classroom
- Use of TLM and reading materials
• Early Childhood Education
• General issues that constrain effective teaching-learning in classrooms; role of in-service training and academic support
• Teachers’ suggestions for improving language teaching-learning
• Personal information about the teacher

The questionnaire had 33 questions: Q1 (matrix question) had 38 sub-questions and Q9 (matrix question) had 15 sub-questions. All questions, except two, were closed-ended and included the following type of responses (Table 3.8):

Table 3.8: Nature of questions in Questionnaire

<table>
<thead>
<tr>
<th>Question type</th>
<th>Nature of response</th>
<th>Number of questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating scale (Likert)</td>
<td>Completely disagree, disagree to some extent, agree to some extent, completely agree and don’t know; or always, sometimes, rarely, never</td>
<td>1 matrix question with 38 parts; 1 matrix question with 15 parts; 2 other questions (55 questions)</td>
</tr>
<tr>
<td>Rank Ordering</td>
<td>Choose from given options and prioritize (relative preference of respondent)</td>
<td>7 questions</td>
</tr>
<tr>
<td>Multiple choice</td>
<td>Check the appropriate box from multiple choices</td>
<td>15 questions</td>
</tr>
<tr>
<td>Dichotomous</td>
<td>Choose one of 2 options (yes/no; male/female)</td>
<td>3 questions</td>
</tr>
<tr>
<td>Open-ended</td>
<td>Limited space provided</td>
<td>2 questions</td>
</tr>
</tbody>
</table>

In all multiple choice questions, there was a provision for an Other option where the respondent could specify the response that was not included in the choices. Each question was accompanied by a clear instruction for writing the response. The 2 questions that provided scope for open-ended response were:

• What steps will you take to improve the quality of language teaching learning in your classroom? What steps would you like others to take? (name 2 only)
• What are your suggestions to improve the teaching-learning of language?

3.11.2 Questionnaire Development

The teachers’ survey was conducted to supplement the detailed study in 8 schools. The idea was to get a picture of perceptions and practices of a larger number of teachers from around the schools where the ‘case studies’ were conducted. This would help in understanding the opinions of primary school teachers about teaching in general, and language teaching and learning in particular. Therefore, the major topics included in the questionnaire were similar to the ones used in the interview schedule.

The broad areas included in the questionnaire are mentioned in the description section. Under each topic, the questions or anchor statements were developed. The wording of the questions and anchor statements was drafted carefully to ensure that (a) the meaning is unambiguous, and does not get interpreted differently by different respondents, (b) these do not become leading statements or questions with a ‘desirable’ answer, (c) they require the teacher to take a position on an issue, (d) they are all related to classroom practice and teachers teaching in primary grades should have knowledge of these issues, (e) they are not complicated to understand, (e) sensitive questions were not included (except two that required the teachers’ opinion on effectiveness of training and academic support), and (f) no question or statement had more than one dimension or issue included in it.

A certain flow was maintained in the questionnaire, starting with questions that were specific to language teaching and learning, followed by more general issues relating to quality in primary education, problems in teaching in primary grades followed by personal information about the teachers. Only two questions allowed for open-ended responses.
For each question, the opening statement created a background for the question and helped create interest in that issue. An attempt was made to balance the number of positively and negatively worded questions. The formatting was done to ensure easy readability and reduce the burden by requiring only a check mark to be provided or a number chosen from a set of options. The draft questionnaire was first developed in English and then translated in to Assamese and Hindi. The translations were checked for meaning, clarity and accuracy by the researcher himself.

3.11.3 Validity and Reliability

The constructs that were attempted to be operationalized through the questionnaire were the same as included in the classroom observation tool and the interview schedule. Therefore, the construct validity of all these tools had been worked out in advance.

The draft questionnaire was piloted with 2 teachers in Assam and 2 in Rajasthan from an adjoining district. The pilot was not confined to just getting the teachers to complete the form. It was followed by a discussion to understand what was inappropriate, difficult or unclear in the form and where they found it difficult to respond honestly. The objective was not to try and significantly reduce the length of the questionnaire by carrying out a statistical analysis based on feedback from the pilot. A bigger pilot would have provided more detailed feedback, but that was not feasible given the costs involved and the fact that the final administration was to include only about 50 teachers in a face-to-face administration situation.

The main objective of the pilot was:

- To test the clarity of wording of all the questions, statements and the multiple choice responses
- To identify if additional choices were needed
- To check the time taken to complete the questionnaire
• To check if some items that related to the same construct were marked similarly by the teachers who participated in the pretest
• To get feedback if instructions were clear
• To check if any difficult concepts or jargon had been included
• To identify if any question demanded knowledge or opinion about an issue not linked to a teacher’s day-to-day work at school.

Significant changes were made in the wording of several statements and instructions after the feedback from the pilot in Assam. It was clear that certain items would require a face-to-face clarification/explanation. The personal details section was shifted to the end. Two sensitive questions were dropped. These related to the support received from the head teacher and the issue of teacher transfers. The teachers needed almost 1.5 hours to complete the questionnaire. This seemed high. But, based on discussion with teachers and the SCERT co-researcher, the length was not reduced.

34 questions relating to the language teaching-learning process were included in a matrix question. Another 15 related to classroom practices and activities were included in a 15 item matrix. The option ‘Other (please specify)’ was added in most of the multiple choice questions, though the feedback was that the choices were adequate. In the final analysis, it was seen that very few teachers (less than 5%) used the ‘Other’ option to fill in a choice not included in the question. The questionnaire was converted to a booklet form for ease of use and the font-size of letters was increased. A bold typeface was added to certain phrases to clarify the main thrust of the question.

The pilot in Rajasthan was mainly to confirm the quality of translation in to Hindi and identify if some items may not be relevant or require a different terminology in the Rajasthan context. Some items had to be modified for Rajasthan, e.g., Ka sreni or the preschool class does not exist in Rajasthan; there is no CRC Coordinator; there is no monthly meeting of teachers etc. The
pretest in Rajasthan made it clear that teachers would not be willing to give honest replies to questions relating to the usefulness of training and support received from the block resource persons. While these questions were not dropped, this was kept in mind during the analysis.

In the final administration of the questionnaire and analysis of results, it became clear that 2 questions (included in the 34 sub-questions in Q1) were not clearly understood by some teachers, despite explanation by the researcher. The results for these 2 questions were ignored.

Guidelines were developed for administration of the questionnaire in a face-to-face situation including question-wise clarifications. The questionnaire was self-administered by the researcher. This was helpful because all questions could be clarified to the teachers in a face-to-face setting. It was also ensured that the response rate was very high. During the process of filling up of the questionnaire forms, only the researcher was present with the teachers. However, the meeting was called by the block education office in both states.

3.11.4 Administration of the Questionnaire

The questionnaire was administered at the end of the field work in the 8 schools. Teachers were invited to 2 workshops (one for each block) in each state. Teachers from 18-20 primary schools located near the 4 ‘case study’ schools were invited by the block education office for a workshop on language teaching in each block. This created some interest and expectancy among the teachers. This was a 4.5-5 hour workshop. In the pre-lunch session, the teachers filled the questionnaire. At the outset, the researcher explained the objectives of the research, the work already completed in the 8 schools and how the survey would contribute towards the finalization of the findings. In the post-lunch session, a 2 hour presentation and discussion was organized on good practices in early grades language instruction. Video clips, examples of good materials and storybooks and strategies of effective programmes were used by the
researcher for this session. In all the 4 workshops (2 per state), the teachers sincerely appreciated the session and participated animatedly in the discussion.

Out of 53 teachers who attended the session for filling in the forms in Assam, 51 submitted the filled in forms. In Rajasthan 52 teachers submitted the forms out of 55 who attended. With the explanations, the form-filling process took 2.5 hours (last teacher) in Assam and about 2 hours in Rajasthan. Only 48 forms in Assam and 49 forms in Rajasthan were taken up for analysis.

3.11.5 Learning from Questionnaire Administration
a. A face-to-face administration in the presence of the researcher helps greatly in clarifying doubts and getting more thoughtful responses.
b. The workshop mode where some time was set aside to provide inputs and discuss the topic with the teachers is motivating and helps to get teachers work on the questionnaire more sincerely.
c. Certain sensitive questions that deal with providing feedback about the education system and education officials may not be responded to honestly.
d. It is important that education department officials are not present during the process of filling up of the forms.
e. For some questions, the distinction between ‘completely agree’ and ‘somewhat agree’ or ‘completely disagree’ and ‘somewhat disagree’ was not clear to the teachers. However, teachers used the extreme options (completely agree and completely disagree) very frequently. That was a good sign.
f. With proper explanation and clarification, very few teachers went for the ‘don’t know’ option in the rating scale questions.
g. Less than 10 percent teachers did not write their names-an option that was given to all teachers.
h. In a questionnaire based survey, it is difficult to know when teachers are giving false responses, i.e. providing responses that are ‘desirable’. The use of more than one question to check this does not work well. In the analysis,
an attempt has been made to look at all responses of a teacher to come to a conclusion if some responses were incorrectly provided. The positive responses regarding conduct of classroom activities and use of TLM do not fit in with the observations in classrooms in similar schools.

3.12 STUDY OF A ‘GOOD SCHOOL’
A good school was selected in each of the states to look at some local good practices. In Assam, this was a school in an adjoining district that had similar school and student background variable characteristics. The ‘good school’ had similar school characteristics as well. The school has been implementing the innovative ‘Bidyajyoti’ programme for 4 years now. In Rajasthan the selected ‘good school’ was in the same district, but a different block. Room to Read’s literacy instruction programme for early grades has been operational in this school for about 2 years. The following research techniques were used for the ‘good school’:

- Student assessment in grades 1 and 2
- Classroom observations for both grades for 3 days (including time-on-task recording)
- Documenting the lesson sequence
- Teachers’ interviews
- Discussion with resource person responsible for supporting the innovative programme in that school

3.13 PROCEDURE: SEQUENCE OF RESEARCH ACTIVITIES
The preparatory work on this study was initiated with the following activities:
- In-depth study of research in early grades reading and language instruction and theoretical formulations on this subject
• Analysis of documentation of successful reading improvement programmes in India and outside
• Interaction with key programme staff of Room to Read’s literacy instruction programme in Uttarakhand and Rajasthan to identify the key academic factors, as perceived by them in influencing students’ reading achievements.
• In-depth discussion with teachers, CRC and BRC staff in one district in Assam to understand their perspective on teaching-learning of language in early primary grades.

This initial work helped (a) Identify the good practices in effective early grades language instruction, (b) Identify a set of preliminary factors that seem to influence students’ learning in language, and (c) Prepare a list of topics and sub-topics to be investigated through the field work.

The work on preparing the draft tools was initiated after completing the above activities. The draft tools (student assessment and teacher’s questionnaire) were first translated in to Assamese. Following this, familiarization visits were undertaken in the selected blocks of Morigaon district in Assam. These also included discussion with cluster and block personnel. The identification of the sample of 4 schools in each block of Morigaon was completed.

During this time, a simple analysis of the language textbooks of grade 1 and 2 was undertaken, with a focus on the lessons likely to be taught during the classroom observations. Simultaneously, the piloting of the student assessment test, classroom observation schedule and teacher questionnaire were undertaken in Assam. The tools were revised and finalized.

The field work was then undertaken in 8 schools of Morigaon district. The field work from the initial familiarization visits to the completion of all the interviews took about 45 days in Morigaon district. Interviews with CRC, BRC
and DIET faculty members were conducted towards the end of this period. Data entry for student assessments was carried out every day in the evening after return from the school visits. Classroom observation schedules were also completed on the last (third) day of the observations. The teachers’ survey workshops were carried out in the following week after other data had been collected. Around the same time, data was also collected from an identified ‘good school’.

A similar process was followed in Ajmer district after completion of the Assam study. The familiarization visits and finalization of the sample took more time in Ajmer district since some identified schools could not be included in the sample. The tools had already been translated in to Hindi. These were piloted and revised. The data collection again took about 40 days in Ajmer district. In both Assam and Rajasthan, the sampling and field visits were facilitated by district and block education staff. They had received approval and request for support from their state offices.

An analysis of the in-service teacher training modules for training conducted in the past two years in Assam and Rajasthan under SSA was carried out with the following perspective:

- What was the focus on language teaching concepts and practices at primary level? Was there any component regarding early grades?
- What was the content and delivery strategy? Was the content relevant for classroom practice? How does it compare with identified practices in effective teaching of reading?

### 3.14 DATA ANALYSIS

The analysis is primarily qualitative in nature, though some of the numerical data has been analyzed using quantitative techniques. Some of the data from
the students’ assessment is ratio scale type data. It is non-parametric data for this study since no predefined standards were available. Descriptive statistics has been used for analysis of the assessment data. Exploratory data analysis, viz. analysis of frequencies, percentages and cross-tabulations has been used for the Likert scale type of items in the classroom observation tool and the teachers’ survey. The time-on-task tool for recording teacher and students’ activities also provided some quantitative results. The rest of the analysis is qualitative in nature.

As explained earlier, triangulation of results has been carried out for the teachers’ questionnaire, FGD, classroom observations and teacher interviews. The qualitative notes from the classroom observation have helped provide concrete examples for the rating scale data of the observation schedule. In several cases, these notes have also provided explanations and reasons for the observed behaviour.