

**Study of impact of early learning, socialization and school readiness experiences in preschool settings on educational and behavioural outcomes along the primary stage**

**Report on baseline field visit: Strand A  
September-December 2011**

**Draft**

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## 1. Introduction

### 1.1. Objectives

The overall objective of this study is to explore the impact of preschool programs on children's school readiness and subsequent learning achievement in the early grades of primary school. Conceived as a five year longitudinal study of a cohort of four year olds across three states, the study design consists of three strands:

*Strand A* employs primarily survey methods of data collection to generate district level estimates of preschool participation, school readiness, and (in future years) early grade learning among children who were 3.5 to 4.5 years old at the time of the baseline visit.

*Strand B* comprises an in-depth study of a subset of the full sample which aims to study variations across preschool settings in terms of a range of parameters and identify key factors that are associated with improved school readiness and early grade learning achievement.

*Strand C* consists of a series of case studies of selected early childhood education centres.

The study is a collaborative effort between the Centre for Early Childhood Education and Development (CECED) at Ambedkar University and ASER Centre. Fieldwork and data analysis under Strand A is being conducted by ASER Centre, New Delhi. This work has been supported by UNICEF, New Delhi for Andhra Pradesh and Rajasthan and Sarva Shiksha Abhiyan (SSA) for Assam.

This report summarizes findings from the baseline field visit, conducted between September and December 2011.

### 1.2. Sampling

This study is being conducted in three states: Andhra Pradesh, Assam and Rajasthan. Within each state, two districts were purposively selected for inclusion in the study: Medak and Warangal in Andhra Pradesh, Dibrugarh and Kamrup in Assam, and Ajmer and Alwar in Rajasthan.

*Selection of villages:* Within each district, a total of 60 villages with a population of between 2,000 and 4,000 persons were selected for the study. Given that the primary objective of this study is to examine the relationship between ECE participation and learning outcomes, sampling of villages was deliberately restricted to this population band in order to maximise the likelihood of finding different providers of ECE facilities (and therefore variation in program content and processes) within a single village.

Villages were selected utilizing the following procedures:

- First, ten villages were purposively selected for inclusion under Strand B. These were concentrated in between two and four blocks of each district.
- Next, an additional fifty villages were selected for inclusion under Strand A. In order to ensure a representative sample at the district level, Strand B blocks were dropped while selecting the additional Strand A villages. For example, in Kamrup district of Assam, the ten villages

purposely selected for Strand B were located in four blocks. Therefore, while sampling for Strand A, these four blocks were dropped and the fifty additional villages were selected from the remaining thirteen blocks.

- Systematic random sampling was utilized in order to ensure that at least one village of the requisite size was included from each block in the district.

*Selection of children:* Within each sampled Strand A village, the objective was to randomly select a total of fifty children in the age group of 3.5 to 4.5 years at the time of the baseline visit. Children were selected using the following procedure:

- The frame used for sampling comprised the ICDS survey records maintained by Anganwadis in each village, which are expected to provide up to date records of all children living in the catchment area of the Anganwadi.<sup>1</sup>
- Field investigators first listed the Anganwadis operating in a given village and divided the target number of 50 children across these Anganwadis. Thus, in a village with four Anganwadis, the field team was asked to randomly select 12 to 13 children of the required age from the ICDS survey records of each Anganwadi.
- If the target number of children in this age group was not available in the records of any given Anganwadi, the remaining children were selected in equal numbers from the records of other Anganwadis in the village, where possible.
- In practice, however, despite the selection of larger villages for inclusion in this study, the target number of children (50 per village, or 2,500 children per district for Strand A) was not achieved. The final sample ranges from 1,380 children in Warangal (Andhra Pradesh) to 2,418 in Alwar (Rajasthan). In all, a total of 11,873 children were sampled under Strand A (Table 1).
- Fieldwork for Strand B villages involved selecting all children in the age group 3.5 to 4.5 in the village in the first instance, which enabled an additional 1,995 children to be added to the overall sample, for a total of 13,868. Although household information exists for all of these children, only a subset of these additional (Strand B) children were tracked and tested, as described below.

### 1.3. Methodology

Certain elements of fieldwork were conducted across all sixty sampled villages in each district (that is, both Strand A and Strand B villages), enabling data to be pooled across both strands. These comprised:

- Basic information regarding village characteristics and infrastructure, collected via observation.
- Detailed household information on sampled children, collected through an extensive questionnaire administered during a household visit. This included basic information on all household residents, indicators pertaining to socioeconomic status, and specific questions related to the sampled child's participation in ECE programs along with parents' perceptions and attitudes towards ECE.

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<sup>1</sup> In practice, states varied in terms of completeness of these records.

- A Rapid Facility Survey of as many early childhood education centres operating in the village as possible.<sup>2</sup> The survey covered key aspects of infrastructure, staffing, enrolment, and availability of materials for children. If the centre was open and had children present during the survey visit, field teams also recorded basic information on the nature of the activities taking place as well as the attendance of sampled children during the visit. Partial or complete facilities information was collected for a total of 1,561 centres (97%).
- A baseline School Readiness Test was administered to as many sampled children as could be located from the larger (Strand A) sample, and to a subset of children from the smaller (Strand B) sample.<sup>3</sup> In all, 11,426 or 82.4% of all sampled children were tested.

The number of villages, children, households and ECE facilities for which data were collected is summarized in Table 1 below. All findings described in this report are based on the total (pooled) sample from Strands A and B unless specifically mentioned otherwise.

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<sup>2</sup> A total of 1,616 ECE centres were located across all sampled villages. However, some ECE Centres under private management refused permission to field teams. In other cases, although the centre was not open to children during the period that the survey team was in the village, the centre was visited and information about infrastructure, staffing, and enrolment was collected.

<sup>3</sup> Strand B children were tested and subsequently tracked only if a minimum number of them were attending a given centre.

**Table 1: Sample Description**

State	District	Strand A					Strand B					Total (Strand A+B)				
		No. of Villages	No. of ECE Centres in sample villages	No. of children sampled	% Sample children for whom HH visits conducted	% Sample children tested	No. of Villages	No. of ECE Centres in the sample village	No. of children sampled	% Sample children for whom HH visits conducted	% Sample children tested	No. of Villages	No. of ECE Centres in sample villages	No. of children sampled	% Sample children for whom HH visits conducted	% Sample children tested
Andhra Pradesh	Medak	51	178	1800	92.7	85.0	10	58	321	99.7	100.0	61	228	2121	93.8	87.3
	Warangal	51	236	1380	92.5	77.8	10	65	366	95.9	99.7	61	301	1746	93.2	82.4
	<b>Total</b>	102	406	3180	92.6	81.9	20	124	687	97.7	99.9	122	529	3867	93.5	85.1
Assam	Dibrugarh	52	152	1551	80.3	72.9	9	26	196	55.1	98.5	61	178	1747	77.5	75.8
	Kamrup	50	257	2378	79.2	77.5	9	51	385	49.9	96.1	59	308	2763	75.1	80.1
	<b>Total</b>	102	409	3929	79.6	75.7	18	77	581	51.6	96.9	120	486	4510	76.0	78.4
Rajasthan	Ajmer	51	224	2346	83.9	82.8	10	44	334	100.0	99.7	61	268	2680	85.9	84.9
	Alwar	52	281	2418	86.9	80.0	7	52	393	99.0	100.0	59	333	2811	88.6	82.8
	<b>Total</b>	103	505	4764	85.4	81.4	17	96	727	99.4	99.9	120	601	5491	87.3	83.8
<b>TOTAL</b>		<b>307</b>	<b>1320</b>	<b>11873</b>	<b>85.4</b>	<b>79.6</b>	<b>55</b>	<b>296</b>	<b>1995</b>	<b>85.0</b>	<b>99.0</b>	<b>362</b>	<b>1616</b>	<b>13868</b>	<b>85.3</b>	<b>82.4</b>

## 2. Characteristics of sampled villages

As noted earlier, villages selected for this study had a total population in the range of 2,000-4,000 persons according to Census 2001 information. Sampled villages are therefore neither very small nor extremely remote, as evidenced by their infrastructure (Table 2). Although there are variations across districts and states, overall 91% of these villages had an electricity connection; 90% had a PDS shop; 82% had a Government primary school; and 76% were accessible by *pukka* road. About two thirds had a post office and some kind of health clinic, while internet facilities were available in only 12% of all villages. More than half of all villages had a private school located within the village.

Overall, two districts had near universal provision of primary schooling (Warangal in Andhra Pradesh, Kamrup in Assam). In the other four districts, only about three quarters of sampled villages had a government primary school. Except in the case of Rajasthan, there is considerable variation across districts even within each state in provisioning of Government primary schools.

**Table 2: % Sampled villages with selected characteristics, by district**

Facility	Andhra Pradesh		Assam		Rajasthan		TOTAL
	Medak	Warangal	Dibrugarh	Kamrup	Ajmer	Alwar	
Electricity	94	99	72	90	98	94	91
PDS shop	92	99	74	98	93	83	90
Govt primary school	75	96	70	96	74	75	82
Pucca road	91	99	42	44	98	93	76
Post office	86	92	32	45	87	72	68
Private health clinic	88	93	30	35	70	72	64
Health sub centre	71	50	38	52	87	81	63
STD booth	92	96	32	24	62	57	59
Private school	31	47	47	52	86	81	57
Bank	28	14	16	28	47	27	26
Internet	3	5	19	14	22	14	12

## 3. Provision and characteristics of ECE Centres in sampled villages

### 3.1. Availability of educational institutions for young children

All of the 362 villages sampled had at least one ECE centre operating in the village.<sup>4</sup> The number of centres operating is broadly related to the population: in districts with smaller villages (Medak, Warangal and Dibrugarh), most villages had 5 or fewer centres; whereas in districts with larger populations (Kamrup, Ajmer and Alwar), most villages had at least 4 centres (Table 3).

Almost all villages had at least one Government ECE Centre, usually an *anganwadi*. Private provisioning of ECE facilities is low in Assam, particularly in Kamrup district; quite high in Andhra

<sup>4</sup> Throughout this report, the term 'ECE Centre' refers to all locations where preschool programs are held – Anganwadis, preschool classes in primary schools, *balwadis*, etc.

Pradesh, particularly in Warangal; and extremely high in both districts of Rajasthan. In Alwar district, for example, as many as 92% of all sampled villages had at least one privately managed ECE centre (Table 4).

**Table 3: Provision of ECE centres and primary schools in sampled villages, by district**

State	District	Average population	Average No. of HH	% villages with Govt Primary School	% villages with:				
					Up to 3 ECE Centres	4-5 ECE Centres	6-7 ECE Centres	8+ ECE Centres	Total
Andhra Pradesh	Medak	2869	576	75	62.3	26.2	9.8	1.6	100
	Warangal	2909	692	96	36.1	37.7	16.4	9.8	100
Assam	Dibrugarh	2511	461	70	68.3	25.0	5.0	1.7	100
	Kamrup	3492	559	96	19.3	38.6	26.3	15.8	100
Rajasthan	Ajmer	4333	648	74	26.7	51.7	18.3	3.3	100
	Alwar	4242	650	75	11.9	44.1	25.4	18.6	100
<b>Total</b>				<b>82</b>	<b>37.7</b>	<b>37.2</b>	<b>16.8</b>	<b>8.4</b>	<b>100</b>

**Table 4: ECE centres in sampled villages, by management type and district**

State	District	% of villages with:		% of Centres by Management:			
		At least one Govt ECE centre	At least one Private/ other ECE Centre	Govt	Private	NGO/ Other	Total
Andhra Pradesh	Medak	100	26.2	79.1	20	0.9	100
	Warangal	100	42.6	79.1	17.9	3.0	100
Assam *	Dibrugarh	98.4	3.3	97.7	1.7	0.6	100
	Kamrup	96.6	25.4	93.5	6.2	0.3	100
Rajasthan	Ajmer	98.4	86.9	61.4	36.7	1.9	100
	Alwar	100	91.5	54.7	42.3	3.0	100
<b>Total</b>		<b>98.9</b>	<b>45.9</b>	<b>75.9</b>	<b>22.3</b>	<b>1.8</b>	<b>100</b>

\* Government ECE centres in Assam were either Anganwadis (part of the ICDS program of the Ministry of Women and Child Development) or Ka-shrenis (a preschool class run by SSA as part of the Government Primary School).

Given that villages in India are commonly divided into separate hamlets with distinct socioeconomic compositions, it is also important to examine the availability of ECE facilities within a village – particularly because of the young age of the children who are the intended beneficiaries. Table 5 shows the proportion of villages in each district that had as many Anganwadi Centres as hamlets, and the proportion of villages that had fewer (i.e. not all hamlets had an Anganwadi Centre). These data show that the ICDS network is extensive in Rajasthan, where a large majority of villages in both districts had at least as many AWCs as hamlets – testimony in part to the relatively large size of these villages. Assam, in contrast, had the lowest proportion of villages with at least one AWC per hamlet, again a reflection of the relatively low populations in these villages.



**Table 5: Proportion of sampled villages with as many Anganwadis as hamlets**

State	District	% of villages with:	
		At least one ANW per hamlet	Less than one ANW per hamlet
Andhra Pradesh	Medak	67.2	32.8
	Warangal	73.8	26.2
Assam	Dibrugarh	42.6	57.4
	Kamrup	30.5	69.5
Rajasthan	Ajmer	86.9	13.1
	Alwar	72.9	27.1
<b>Total</b>		<b>62.4</b>	<b>37.6</b>

### 3.2. Sample description of surveyed facilities

In an effort to understand the resources available to ECE programs and the experiences of children who attend them, a Rapid Facility Survey of 1561 centres was conducted. The survey covered key aspects of infrastructure, staffing, enrolment, attendance, and availability of materials. If the centre was open and had children present during the survey visit, field teams also recorded basic information on the nature of the activities taking place as well as the attendance of sampled children during the visit. A sample description of the centres that were visited, and the percentage of those that were open with children present during the visit, are shown in Table 6 below.

**Table 6: Sample Description of Rapid Facilities Survey**

State	District	Total No. of centres surveyed	Percentage of centres surveyed that were open and had children present
Andhra Pradesh	Medak	210	87.6
	Warangal	266	84.6
	<b>Total</b>	<b>476</b>	<b>85.9</b>
Assam	Dibrugarh	179	94.4
	Kamrup	330	94.8
	<b>Total</b>	<b>509</b>	<b>94.7</b>
Rajasthan	Ajmer	259	91.5
	Alwar	317	81.1
	<b>Total</b>	<b>576</b>	<b>85.8</b>
<b>TOTAL</b>		<b>1,561</b>	<b>88.7</b>

A summary of the visited centres by management type is shown in Table 7 below. Approximately three-quarters of the centres visited and surveyed were government-managed. Government centres included Anganwadi centres operated under the Integrated Child Development Scheme (ICDS) in all three states. In Assam, government centres also included *Ka-Shrenis*, which are pre-school classes run in government schools operated under *Sarva Shiksha Abhiyan* (SSA).

Within each state and district, the distribution of the surveyed ECE centres by management type was reflective of the provisioning discussed in the previous section. In Assam, where families are heavily reliant on government centres for early childhood education, over 95% of the visited centres were government-managed. In Andhra Pradesh, government-managed centres comprised approximately four-fifths of the sample, while private centres comprised the remaining fifth. In Rajasthan, the sample included a near-equal number of government and privately-managed centres.

**Table 7: Sample description by management type and district**

State	District	No. of Centres	Government	Private & Other	NA	Total
Andhra Pradesh	Medak	210	80.0	20.0	0.0	<b>100</b>
	Warangal	266	86.1	13.2	0.8	<b>100</b>
	<b>Total</b>	<b>476</b>	<b>83.4</b>	<b>16.2</b>	0.4	<b>100</b>
Assam	Dibrugarh	179	97.8	2.2	0.0	<b>100</b>
	Kamrup	330	93.9	5.5	0.6	<b>100</b>
	<b>Total</b>	<b>509</b>	<b>95.3</b>	<b>4.3</b>	0.4	<b>100</b>
Rajasthan	Ajmer	259	63.3	36.3	0.4	<b>100</b>
	Alwar	317	50.8	48.6	0.6	<b>100</b>
	<b>Total</b>	<b>576</b>	<b>56.4</b>	<b>43.1</b>	0.5	<b>100</b>
<b>TOTAL</b>		<b>1561</b>	<b>77.3</b>	<b>22.2</b>	0.5	<b>100</b>

### 3.3. ECE Centre location, infrastructure and facilities

The facility survey revealed that ECE programs operate out of a variety of premises, with less than one-fifth of centres operating out of an independent facility. Other locations included government schools, private schools, private homes, and other locations such as panchayat *bhavans*, community halls, or in open locations. Locations of the surveyed ECE programs are shown in Table 8.

Both government and private centres operated out of a wide variety of facilities. Private centres were seen operating out of private homes, private schools, their own buildings, and other locations, all in substantial proportions. Government centres revealed distinct patterns in their locations across the three states, as a result of different state policies in the implementation of ICDS. In Andhra Pradesh, the bulk of Government run centres operated from private homes (45%) followed by approximately one-third in government school premises. In Assam, most centres (63%) operated from government schools, and smaller proportion operated from other locations. In Rajasthan, a high proportion (40%) of centres had their own buildings.

During the visits, centres were assessed for the availability of basic physical infrastructure – including boundary walls, playgrounds, toilets, and facilities for providing drinking water and meals. Results, displayed in Table 9 below, show that ECE centres often lack these basic resources. While playgrounds and drinking water facilities were available in the majority of centres visited, all other amenities were available in less than half of all centres.

**Table 8: Location of Early Childhood Education centres**

Location	% Centres located in:						
	Government school	Private school	Private house	Own building	Other	Total	
<b>All Centres: by management</b>							
Government	43.3	3.1	22.9	17.2	13.6	100	
Private & Others	1.6	21.1	38.1	18.2	21.1	100	
<b>TOTAL</b>	<b>33.7</b>	<b>7.2</b>	<b>26.4</b>	<b>17.5</b>	<b>15.3</b>	<b>100</b>	
<b>Government Centres: By State</b>							
Andhra Pradesh	33.7	1.2	45.1	12.5	7.5	100	
Assam	62.5	4.7	10.6	7.1	15.1	100	
Rajasthan	21.6	2.7	16.3	40.9	18.6	100	
<b>TOTAL</b>	<b>43.4</b>	<b>3.1</b>	<b>22.8</b>	<b>17.2</b>	<b>13.5</b>	<b>100</b>	
<b>All Centres: By district</b>							
AP	Medak	17.9	8.2	41.9	19.6	12.5	100
	Warangal	36.6	3.6	47.3	10.3	2.2	100
	<b>Total</b>	<b>28.2</b>	<b>5.6</b>	<b>44.9</b>	<b>14.5</b>	<b>6.9</b>	<b>100</b>
AS	Dibrugarh	59.2	7.7	5.9	9.5	17.8	100
	Kamrup	61.3	5.1	13.7	6.7	13.1	100
	<b>Total</b>	<b>60.6</b>	<b>6.0</b>	<b>11.0</b>	<b>7.7</b>	<b>14.7</b>	<b>100</b>
RJ	Ajmer	3.0	13.6	17.8	47.0	18.6	100
	Alwar	19.8	6.2	33.5	13.6	26.9	100
	<b>Total</b>	<b>11.8</b>	<b>9.7</b>	<b>26.0</b>	<b>29.6</b>	<b>22.9</b>	<b>100</b>
<b>TOTAL</b>	<b>33.6</b>	<b>7.2</b>	<b>26.3</b>	<b>17.5</b>	<b>15.3</b>	<b>100</b>	

Privately managed ECE centres had greater infrastructure resources on average than government centres. In fact, on every infrastructure indicator except for the availability of a kitchen shed and playground, private centres were more than twice as likely to be equipped than the government centres. A comparison of infrastructure availability across the three states shows some degree of variation, with centres in Assam particularly lacking in drinking water facilities, and centres in Andhra Pradesh particularly lacking in toilets.

Given that the provision of a midday meal to children via the extensive ICDS network is a central pillar of the ICDS program, it is unsurprising that kitchen facilities were observed far more frequently in government centres (25%) than in private ones (7%). However, children were observed eating cooked meals much more frequently than kitchen sheds were observed to be available – indicating that meals for children are often sourced from other locations.

**Table 9: Centre infrastructure and facilities**

Infrastructure & Facilities	% Centres with:							
	Building		Drinking Water	Toilets		MDM		
	Boundary wall	Playground	Drinking water facility available	No toilets	With toilets	Kitchen shed	children observed eating a hot cooked meal	
<b>All Centres: By management type</b>								
Government	32.3	65.8	43.7	62.1	37.9	24.7	46.2	
Private & Other	71.2	69.1	88.4	31.2	68.8	6.8	10.7	
<b>TOTAL</b>	<b>41.3</b>	<b>66.5</b>	<b>54</b>	<b>55.2</b>	<b>44.8</b>	<b>20.6</b>	<b>38.1</b>	
<b>Government Centres: By State</b>								
Andhra Pradesh	34.8	72.2	58.6	84.1	15.9	24.1	52.1	
Assam	23.7	61.5	26.3	48.6	51.5	17.2	54.7	
Rajasthan	44.3	65.0	55.6	55.1	44.9	38.7	23.9	
<b>TOTAL</b>	<b>32.3</b>	<b>65.8</b>	<b>43.7</b>	<b>62.1</b>	<b>37.9</b>	<b>24.7</b>	<b>77.6</b>	
<b>All Centres: By district</b>								
AP	Medak	34.2	61.4	72.1	75.2	24.8	21.4	65.8
	Warangal	40.0	80.7	53.8	78.4	21.6	20.5	32.4
	<b>Total</b>	<b>37.4</b>	<b>72.0</b>	<b>62.1</b>	<b>77.0</b>	<b>23.0</b>	<b>20.9</b>	<b>47.4</b>
AS	Dibrugarh	32.0	61.1	22.5	47.5	52.5	11.3	32.5
	Kamrup	19.7	61.0	31.4	49.5	50.5	20.8	66.8
	<b>Total</b>	<b>24.1</b>	<b>61.0</b>	<b>28.3</b>	<b>48.8</b>	<b>51.2</b>	<b>17.5</b>	<b>54.8</b>
RJ	Ajmer	58.1	68.2	73.4	38.4	61.6	41.6	18.6
	Alwar	64.5	66.4	71.9	46.5	53.5	7.1	9.7
	<b>Total</b>	<b>61.4</b>	<b>67.3</b>	<b>72.6</b>	<b>42.9</b>	<b>57.1</b>	<b>23.6</b>	<b>14.0</b>
<b>TOTAL</b>	<b>41.3</b>	<b>66.5</b>	<b>54.0</b>	<b>55.3</b>	<b>44.8</b>	<b>20.7</b>	<b>38.1</b>	

### 3.4. Child enrolment, attendance and staff appointment

During Centre visits, information was collected on staff appointment and child enrolment and attendance. Staff appointment information, child enrolment information, and child daily attendance information were obtained from written records, which were maintained in over 97% of the centres visited. Staff attendance information and child attendance information were obtained by a physical headcount of all children present at the time of the visit. The collection of child attendance data from both the centre's records and the observer's headcount allows for comparisons between recorded child attendance and observed child attendance.

Table 10 summarizes data on appointment, enrolment, and attendance. On average, private centres had nearly sixty children enrolled in pre-primary classes and six staff members appointed overall. Caution should be exercised in interpreting these results as a one-to-ten adult-to-child ratio; in many centres, staff appointment records also include staff appointed to teach lower primary standards. Government centres had an average of about thirty children enrolled and two staff members

appointed. Under ICDS, this includes one Anganwadi worker and one assistant. In all states and under both management types, the average observed staff attendance rate was high at 90%.

Across the sample, the observed attendance rate of enrolled children on the day of the visit was close to 60%, which was fairly similar among the three states. Observed attendance rates were substantially higher in private centres (79%) than in government centres (53%).

In Government-run ECE centres, the attendance levels recorded in centre records were slightly higher than that observed, with an average discrepancy of six percentage points. Discrepancies in reported and observed attendance can be interpreted in multiple ways – one possibility is over-reporting of attendance; while another other possibility is that children were in attendance at the centre for a short period of time, but were not present at the time of observation. In private centres, the difference between these two measures was negligible.

**Table 10: Average Child enrolment and attendance (recorded & observed) and Staff appointment and attendance (observed)**

	Child enrolment & attendance				Staff appointment & attendance		
	No. of children enrolled (average)	% enrolled children marked present (average)	% enrolled children observed present (average)	<i>Difference between marked and observed attendance</i>	Average no. of staff appointed	% teachers observed present (average)	
<b>All Centres: by Management Type</b>							
Government	29	59.0	53.4	5.5	2	90.7	
Private & Others	58	78.3	78.9	-0.5	6	86.2	
<b>TOTAL</b>	<b>35</b>	<b>63.3</b>	<b>59.1</b>	<b>4.2</b>	<b>3</b>	<b>89.7</b>	
<b>Government Centre: by State</b>							
Andhra Pradesh	21	69.8	59.7	10.1	2	93.7	
Assam	35	53.0	55.0	-2.0	2	93.6	
Rajasthan	26	56.2	43.4	12.8	3	81.6	
<b>TOTAL</b>	<b>29</b>	<b>59.0</b>	<b>53.4</b>	<b>5.5</b>	<b>2</b>	<b>90.7</b>	
<b>All Centres: by State</b>							
AP	Medak	37	70.0	64.6	5.4	3	89.2
	Warangal	27	72.4	60.6	11.8	2	95.0
	<b>Total</b>	<b>31</b>	<b>71.4</b>	<b>62.5</b>	<b>8.9</b>	<b>2</b>	<b>92.4</b>
AS	Dibrugarh	39	42.6	40.6	2.0	2	88.3
	Kamrup	33	58.6	62.7	-4.1	2	96.6
	<b>Total</b>	<b>36</b>	<b>53.0</b>	<b>55.0</b>	<b>-2.0</b>	<b>2</b>	<b>93.7</b>
RJ	Ajmer	46	66.5	61.5	5.0	4	83.1
	Alwar	31	68.4	60.0	8.4	6	83.7
	<b>Total</b>	<b>38</b>	<b>67.6</b>	<b>60.8</b>	<b>6.8</b>	<b>5</b>	<b>83.4</b>
<b>TOTAL</b>	<b>35</b>	<b>63.3</b>	<b>59.1</b>	<b>4.2</b>	<b>3</b>	<b>89.7</b>	

### 3.5. ECE environment and teaching/learning material

The primary goal of Non-formal Pre-School Education is to prepare children for school. Resources to foster a stimulating learning environment, such as child-friendly wall display items, age-appropriate books, and interactive play materials, are important inputs for any ECE program. Thus, centres were observed for the availability of learning resources in two categories: visual display items and materials for child use. Results are displayed in Table 11.

During the facilities survey, observers checked the classroom wall for the presence of children’s artwork, growth charts displaying children’s height and weight, alphabet or number charts, and other posters. Many centres displayed alphabet or number charts (81%) and posters in the “other” category (74%); a smaller proportion of centres displayed children’s artwork (43%) or children’s height and weight charts (46%). Government centres appeared to have richer displays than privately-managed centres; for example, children’s artwork was displayed in about half of government centres and a quarter of private centres.

**Table 11: Display and availability of teaching and learning material**

% Centres with:										
	Materials on display:				Materials for use by children:					
	Children’s art work	Growth charts (height & weight)	Alphabet or number charts	Other posters	Any type of play material	Picture or story books	Alphabet or Number books	Sports material	Other material	
<b>ECE Type: All</b>										
Government	47.8	54.4	82.6	77.2	61.9	64.6	70.4	53.0	49.2	
Private & Others	25.1	20.1	73.4	61.1	50.2	70.8	78.4	53.9	42.6	
<b>TOTAL</b>	<b>42.6</b>	<b>46.5</b>	<b>80.5</b>	<b>73.5</b>	<b>59.2</b>	<b>66.0</b>	<b>72.2</b>	<b>53.2</b>	<b>47.7</b>	
<b>Government Centres: by State</b>										
Andhra Pradesh	38.1	56.5	81.8	80.4	83.3	87.8	78.3	64.6	58.3	
Assam	73.3	62.1	80.8	74.4	51.1	45.0	65.7	39.7	39.9	
Rajasthan	15.5	38.3	86.7	78.0	53.8	69.3	68.6	61.7	54.2	
<b>TOTAL</b>	<b>47.8</b>	<b>54.4</b>	<b>82.6</b>	<b>77.2</b>	<b>61.9</b>	<b>64.6</b>	<b>70.4</b>	<b>53.0</b>	<b>49.2</b>	
<b>Government Centres: by State</b>										
AP	Medak	40.8	49.5	83.2	81.0	75.5	87.5	79.3	56.0	53.8
	Warangal	38.7	57.3	80.4	76.9	84.0	84.4	77.8	67.6	59.6
	<b>Total</b>	<b>39.6</b>	<b>53.8</b>	<b>81.7</b>	<b>78.7</b>	<b>80.2</b>	<b>85.8</b>	<b>78.5</b>	<b>62.3</b>	<b>57.0</b>
AS	Dibrugarh	67.5	58.0	84.0	75.7	39.6	50.3	72.8	37.3	49.7
	Kamrup	76.7	63.6	78.9	74.1	58.1	43.1	62.6	41.9	34.5
	<b>Total</b>	<b>73.4</b>	<b>61.6</b>	<b>80.7</b>	<b>74.7</b>	<b>51.7</b>	<b>45.6</b>	<b>66.2</b>	<b>40.2</b>	<b>39.8</b>
RJ	Ajmer	18.1	15.6	80.6	75.1	47.7	62.4	69.2	57.4	52.3
	Alwar	11.7	34.6	78.2	61.5	50.6	75.5	75.9	59.1	43.2
	<b>Total</b>	<b>14.8</b>	<b>25.5</b>	<b>79.4</b>	<b>68.0</b>	<b>49.2</b>	<b>69.2</b>	<b>72.7</b>	<b>58.3</b>	<b>47.6</b>
<b>TOTAL</b>	<b>42.5</b>	<b>46.4</b>	<b>80.5</b>	<b>73.5</b>	<b>59.2</b>	<b>65.9</b>	<b>72.1</b>	<b>53.2</b>	<b>47.7</b>	

Given that most learning in preschool programs is expected to be play- and activity-based, providing children with materials that they can handle and manipulate is integral to their early learning. Aside from visual aids, observers checked for the presence of play materials, picture or story books, alphabet or number books, sports materials, and other learning materials. The most commonly available learning materials were alphabet and number books, which were present in about three-quarters of centres. Centres operating under government and private managements had relatively equal amounts of learning materials for children to use. Relative to other states, centres in Andhra Pradesh had more of these materials, while centres in Assam had considerably less.

While inputs in the form of learning materials and display materials are valuable resources for children in ECE programs, their benefits depend on how they are used within the program. Investigators therefore observed what children and teachers were doing at the time of the visit in an effort to gain an understanding of children's exposure to enriching learning activities and social interactions. Given the rapid nature of the facilities survey, observers looked for four simple and broadly defined activities: staff teaching children; staff playing with children; children using books, charts, or play materials; and children talking or playing together. The results of the activities observation are displayed in Table 12.

In the majority of centres that were visited, staff were observed teaching children (70%); children were observed interacting with each other (74%); and children were observed using books, charts, or play materials (59%). In a somewhat smaller percentage of centres (39%), staff members were observed playing with children.

Staff members were observed teaching in a larger proportion of private centres (80%) than government centres (66%). Talking and playing was observed more commonly in government centres – both among children and their peers, and between staff members and children. Even within government centres, teaching was observed at different rates across the three states -- 87% of centres in Assam, 63% of centres in Andhra Pradesh, and 36% of centres in Rajasthan. While definitive conclusions cannot be made from a one-time observation, this may reflect the differing priorities of government anganwadi centres in different states and private preschool centres. Beyond providing preschool education, anganwadi centres are charged with a variety of tasks related to child and maternal health, and are staffed by only one staff member and one assistant. Private preschool centres, on the other hand, may have a more exclusive focus on children's learning.

The percentage of centres in which children were observed utilizing learning materials (59%) was fairly consistent with the availability of learning materials overall, and did not differ much across management types. However, there was a large amount of variation across states on this indicator. Children were most often observed using these materials in Assam, despite it being the state with the lowest provisioning of learning materials in government centres. Rajasthan, which had relatively high availability of materials for children, had relatively low rates of learning material use among children. These findings suggest that providing centres with funding and material inputs is not enough. Rather, activities must be conducted within the centres in such a way that children benefit from the learning resources that are available to them.

**Table 12: Observed teacher and child activity by ECE Type**

	% Centres where staff was observed:		% Centres where children were observed:		
	Teaching children	Playing with children	Using books, charts, or play materials	Talking or playing together	
<b>All Centres: By management type</b>					
Government	66.4	45.6	59.1	77.6	
Private & Others	79.6	17.6	59.2	63.9	
<b>TOTAL</b>	<b>69.5</b>	<b>39.1</b>	<b>59.1</b>	<b>74.5</b>	
<b>Government Centres: by State</b>					
Andhra Pradesh	62.8	44.6	56.8	74.4	
Assam	86.6	64.2	74.8	78.2	
Rajasthan	35.6	14.0	34.5	80.7	
<b>TOTAL</b>	<b>66.4</b>	<b>45.6</b>	<b>59.1</b>	<b>77.6</b>	
<b>All Centres: by district</b>					
AP	Medak	71.2	51.1	60.3	78.3
	Warangal	58.2	35.6	49.8	68.0
	<b>Total</b>	<b>64.1</b>	<b>42.5</b>	<b>54.5</b>	<b>72.6</b>
AS	Dibrugarh	81.7	50.3	65.7	68.0
	Kamrup	88.5	70.9	79.2	83.4
	<b>Total</b>	<b>86.1</b>	<b>63.7</b>	<b>74.5</b>	<b>78.0</b>
RJ	Ajmer	61.6	16.0	45.6	75.5
	Alwar	54.1	8.6	49.8	69.6
	<b>Total</b>	<b>57.7</b>	<b>12.1</b>	<b>47.8</b>	<b>72.5</b>
<b>TOTAL</b>	<b>69.5</b>	<b>39.1</b>	<b>59.1</b>	<b>74.4</b>	

## 4. Status of 4 year olds

### 4.1. Enrolment

The widespread availability of ECE facilities described in earlier sections of this report is reflected in ECE enrolments, with families of 84% of all sampled children reporting that their children were enrolled in an ECE Centre. However, enrolment patterns across these three states look very different (Table 13).

In both Andhra Pradesh and Assam, well over 90% of families of sampled children reported that their four year olds were enrolled in an early childhood education program. In Assam, both provisioning and enrolment are almost entirely within the government system, either in ICDS Anganwadis or in the SSA run 'ka shrenis' (preschool classes in primary schools). In Andhra Pradesh, on the other hand, only about half of all four year olds are enrolled in Anganwadis; another third in private/other centres; and 6% in primary school. The proportion of young children in AP who attend ECE centres outside the village is very high, particularly in Warangal (25%).



**Table 13: % Children enrolled in ECE Centres**

State	District	% sample children enrolled in:					Total enrolled	Total not enrolled	NA	Total
		Govt ECE center in village	Private ECE centre in village	ECE center outside village	Primary school	NA *				
Andhra Pradesh	Medak	57.3	14.3	15.5	5.6	4.2	96.8	0.8	2.4	100
	Warangal	46.1	10.7	24.6	7.6	7.9	96.9	0.0	3.1	100
	<b>Total</b>	<b>52.4</b>	<b>12.8</b>	<b>19.5</b>	<b>6.5</b>	<b>5.8</b>	<b>96.9</b>	<b>0.4</b>	<b>2.7</b>	<b>100</b>
Assam	Dibrugarh	88.9	2.4	0.0	0.0	6.2	97.4	0.5	2.1	100
	Kamrup	82.9	3.4	0.0	0.0	7.0	93.3	1.0	5.7	100
	<b>Total</b>	<b>85.3</b>	<b>3.0</b>	<b>0.0</b>	<b>0.0</b>	<b>6.7</b>	<b>94.9</b>	<b>0.8</b>	<b>4.3</b>	<b>100</b>
Rajasthan	Ajmer	27.5	25.7	9.5	0.4	5.5	68.6	30.4	1.0	100
	Alwar	14.3	25.6	18.7	0.0	7.5	66.0	33.4	0.6	100
	<b>Total</b>	<b>20.7</b>	<b>25.7</b>	<b>14.2</b>	<b>0.2</b>	<b>6.5</b>	<b>67.3</b>	<b>31.9</b>	<b>0.8</b>	<b>100</b>
<b>Total</b>		<b>49.1</b>	<b>15.1</b>	<b>11.7</b>	<b>2.1</b>	<b>6.3</b>	<b>84.3</b>	<b>13.3</b>	<b>2.4</b>	<b>100</b>

\* The family member interviewed was not able to specify which ECE Centre the child was enrolled in.

The situation in Rajasthan is completely different. Although sampled villages in Rajasthan had more provision (in terms of total number of centres) and also more variety (in terms of management type) than either of the other states, almost one third of all families reported that their children were not enrolled anywhere. Of those who were enrolled, twice as many were enrolled in private centres (either inside or outside the village) than in government Anganwadis.

Enrolment patterns among 4 year olds in Assam deserve special attention, given that in some villages children in this age group have a choice of attending an Anganwadi or a preschool class (ka-shreni) within the Government primary school. In the villages sampled in Assam, overall, whereas almost all villages had at least one Anganwadi, 6.6% of villages in Dibrugarh and 20.3% of those in Kamrup had a Ka-shreni (Table 14). In Dibrugarh, a few Ka shrenis were operating in villages without Anganwadis but for the most part Ka shrenis were found in villages which also had at least one Anganwadi.

**Table 14: Provision of Anganwadis and Ka-Shrenis in sampled villages in Assam**

District	% of villages with:		
	ANW Centre	Ka shreni	Both
Dibrugarh	96.7	6.6	4.9
Kamrup	96.6	20.3	20.3
<b>Total</b>	<b>96.7</b>	<b>13.3</b>	<b>12.5</b>

Table 15 below shows the enrolment patterns of children in sampled villages across both districts with and without a Ka shreni. These data show a clear and fairly large shift in enrolment from Anganwadi to Ka shreni where the latter are available. There is also a substantial increase in the proportion of families who were unable to identify which centre their child was enrolled in.

**Table 15: Enrolment of sampled children in Assam**

Village	% sample children enrolled in:				Total enrolled	Total not enrolled	NA	Total
	ANW Centre in village	Ka shreni in village	Private centre in vlg	NA				
Has Ka shreni	66.0	15.2	4.4	12.5	98.1	0.9	1.7	100
Does not have	86.4	0.0	2.6	5.4	94.4	0.2	4.7	100
<b>Total</b>	<b>83.5</b>	<b>2.1</b>	<b>2.9</b>	<b>6.4</b>	<b>94.9</b>	<b>0.8</b>	<b>4.3</b>	<b>100</b>

## 4.2. Attendance

### 4.2.1 Enrolment and attendance: general trends

If enrolment is a poor measure of actual participation at the primary school level, the situation is even more confusing among children in the preschool age group, where children's attendance is not necessarily a consequence of enrolment. Thus, for example, a child might be enrolled in one ECE Centre but attending a different one; enrolled in one centre and attending both that one and a different one; or attending Std 1 in a primary school even though not enrolled.

As a first level of analysis, Table 16 below summarizes the proportion of children in each district who (according to their families) were enrolled in an ECE Centre and the proportion reported to be attending an ECE Centre. In every district, more children are reported to be attending than are enrolled. The difference is small in some districts but relatively large in others (both districts in Rajasthan and Kamrup in Assam). Part of the explanation may lie in the fact that while family members usually knew whether or not the child was actually going to an ECE centre, they did not always know whether or not s/he was formally enrolled (especially in Kamrup). However, it is also worth noting that with the exception of Rajasthan, the proportion of families who reported that their child was not attending anywhere is very low.

**Table 16: Enrolment and Attendance of Sample children, by district**

State	District	% sample children:			% sample children:		
		Enrolled	Not enrolled	Unknown	Attending	Not attending	Unknown
Andhra Pradesh	Medak	96.8	0.8	2.4	97.6	0.7	1.7
	Warangal	96.9	0.0	3.1	97.9	1.4	0.7
	<b>Total</b>	<b>96.8</b>	<b>0.4</b>	<b>2.7</b>	<b>97.7</b>	<b>1.0</b>	<b>1.3</b>
Assam	Dibrugarh	97.4	0.5	2.1	99.0	0.7	0.3
	Kamrup	93.3	1.0	5.7	99.2	0.3	0.5
	<b>Total</b>	<b>94.9</b>	<b>0.8</b>	<b>4.3</b>	<b>99.1</b>	<b>0.5</b>	<b>0.4</b>
Rajasthan	Ajmer	68.6	30.4	1.0	75.4	21.2	3.4
	Alwar	66.0	33.4	0.6	82.4	15.6	2.0
	<b>Total</b>	<b>67.2</b>	<b>31.9</b>	<b>0.8</b>	<b>79.0</b>	<b>18.3</b>	<b>2.7</b>
<b>Total</b>		<b>84.3</b>	<b>13.3</b>	<b>2.4</b>	<b>90.6</b>	<b>7.9</b>	<b>1.6</b>

The group of children who are attending even though not enrolled can be further broken up into those who were enrolled in one centre but actually attending a different one; and those who were not enrolled anywhere but attending an ECE Centre. Whereas in Andhra Pradesh and Assam the proportion of children not enrolled anywhere is small, this proportion is quite high in Rajasthan (Table 17). In Ajmer and Alwar, 9% and 17% of children respectively were reportedly attending a preschool although they were not enrolled anywhere.

**Table 17: Rajasthan: enrolment and attendance categories**

District	N	Percentage of children reported by their families as:				
		Enrolled & Attending	Enrolled but not attending	Not enrolled but attending	Neither enrolled nor attending	Total
Ajmer	2599	66.0	2.1	8.5	23.4	100
Alwar	2664	65.5	1.4	16.6	16.6	100
Total	5263	65.7	1.7	12.6	20.0	100

Dual enrolment was minimal in most districts except Warangal. Across the other five districts besides Warangal, 2% of households listed multiple centres (the child could be enrolled in one attending another, enrolled in both, etc.) In Warangal by contrast, more than one third of all households listed multiple centres (34%). In most cases, this was because children were enrolled in an anganwadi centre that they did not attend.

#### 4.2.2 What does 'attendance' mean?

The previous section presented some broad findings on sampled children's enrolment and attendance status as reported by their families. The children reported above as 'attending' include those who go every day to eat a Midday Meal, those who go for an hour or two once or twice a week, and those who go every day for several hours a day. Looking more closely at what 'attendance' means is a way to estimate the 'dosage' of the ECE program children are exposed to and a potential predictor of the impact that the program may have on children's school readiness.

- *How often do children attend?*

Families of more than three quarters of children in this sample reported that the child attended the centre every day. This proportion is high for all states and highest in Andhra Pradesh.

However, children attending private or other ECE Centres appear to attend more frequently than those in government centres (Table 19), in all likelihood a consequence of families' having to pay for the child's participation. This difference is large in Rajasthan, where close to 30% more children were reported to attend private centres daily compared to those reported attending Anganwadis on a daily basis.

**Table 18: Frequency of children’s ECE attendance as reported by families**

State	District	% attending				Total
		Every day	At least 3 days a week	Less than 3 days a week	NA	
Andhra Pradesh	Medak	90.7	5.7	3.4	0.3	100
	Warangal	87.9	9.3	2.4	0.4	100
	<b>Total</b>	<b>89.5</b>	<b>7.2</b>	<b>3.0</b>	<b>0.3</b>	<b>100</b>
Assam	Dibrugarh	73.8	17.6	7.9	0.8	100
	Kamrup	68.5	26.0	5.3	0.2	100
	<b>Total</b>	<b>70.6</b>	<b>22.6</b>	<b>6.4</b>	<b>0.4</b>	<b>100</b>
Rajasthan	Ajmer	70.4	16.0	13.5	0.2	100
	Alwar	74.3	18.2	7.5	0.0	100
	<b>Total</b>	<b>72.5</b>	<b>17.2</b>	<b>10.3</b>	<b>0.1</b>	<b>100</b>
<b>TOTAL</b>		<b>77.6</b>	<b>15.5</b>	<b>6.7</b>	<b>0.3</b>	<b>100</b>

**Table 19: Attendance of enrolled children as reported by families**

State	Management type	% attending				Total
		Every day	At least 3 days a week	Less than 3 days a Week	NA	
Andhra Pradesh	Government	84.9	10.3	4.6	0.2	100
	Private /Other	94.2	3.7	1.5	0.6	100
	<b>Total</b>	<b>88.2</b>	<b>8.0</b>	<b>3.5</b>	<b>0.4</b>	<b>100</b>
Assam	Government	69.9	23.0	6.6	0.4	100
	Private /Other	Insufficient data				
	<b>Total</b>	<b>69.9</b>	<b>23.0</b>	<b>6.6</b>	<b>0.4</b>	<b>100</b>
Rajasthan	Government	52.4	27.1	20.3	0.2	100
	Private /Other	80.9	12.7	6.4	0.0	100
	<b>Total</b>	<b>72.7</b>	<b>16.9</b>	<b>10.4</b>	<b>0.1</b>	<b>100</b>
<b>TOTAL **</b>		<b>76.4</b>	<b>16.2</b>	<b>7.2</b>	<b>.3</b>	<b>100.0</b>

- *For how many hours do children attend?*

Exposure to an ECE Centre depends not only on how often the child attends, but also on how much time s/he spends there on any given day – which in turn is partly determined by the number of hours the centre is open. As with frequency of attendance, overall, parents’ reports on the number of hours their wards spent in the Centres was also high. Close to half of the sample was reported by their families to spend more than four hours daily in the Centre (Table 20). This proportion is highest in AP, where overall, 76.6% children were reported to spend over 4 hours at the centre daily; followed by RJ where just over 60% of children were reported to do so. Not coincidentally, these are the two states where private provision of ECE facilities is relatively high. In Assam in contrast, most children were reported to spend between 1 to 2 hours at the centre daily. This is consistent with the finding that in Assam, the bulk of the sample is enrolled in Anganwadis whose hours of operation are 2 to 3 hours daily.

**Table 20: Average hours in a day attended, reported by parents, by district**

State	District	% Children attending					Total
		Less than 1 hour	1 to 2 hours	3 to 4 hours	More than 4 hours	NA	
Andhra Pradesh	Medak	2.5	2.8	9.9	84.5	0.3	100
	Warangal	1.9	1.5	27.9	66.0	2.7	100
	<b>Total</b>	<b>2.2</b>	<b>2.2</b>	<b>17.6</b>	<b>76.6</b>	<b>1.3</b>	<b>100</b>
Assam	Dibrugarh	9.2	61.1	26.7	1.9	1.1	100
	Kamrup	10.5	60.4	25.0	4.0	0.2	100
	<b>Total</b>	<b>10.0</b>	<b>60.7</b>	<b>25.7</b>	<b>3.1</b>	<b>0.6</b>	<b>100</b>
Rajasthan	Ajmer	3.5	22.9	14.4	58.6	0.6	100
	Alwar	3.3	12.1	16.7	67.7	0.3	100
	<b>Total</b>	<b>3.4</b>	<b>17.2</b>	<b>15.6</b>	<b>63.4</b>	<b>0.5</b>	<b>100</b>
<b>TOTAL</b>		<b>5.0</b>	<b>25.1</b>	<b>19.3</b>	<b>49.9</b>	<b>0.8</b>	<b>100</b>

This conclusion is confirmed when these data are disaggregated by type of centre (Table 21). A far higher proportion of children attending private/other ECE Centres were reported to attend for more hours per day than their counterparts in Government centres. In RJ for example, close to 80% children were reported to attend private and other centres for over 4 hours daily as compared to a quarter of the sample attending AWCs.

Finally, considerable variation is observed across states in the attendance of children in Government centres. Overall in both Assam and Rajasthan, of children who were reported to attend AWCs, the highest proportion was reported as attending for 1 to 2 hours daily (60% in Assam and 45% in RJ). But in AP, on the other hand, this pattern is reversed. 60% children who were reported as attending AWCs were also said to be spending over 4 hours daily at the centre, and for close to 30% children, the reported hours spent were 3 to 4 hours. While further analysis of these data is needed, possible explanations include double enrolment (children enrolled in Anganwadis but actually attending private centres with longer hours) as well as travel time (large proportions of children in AP attend centres located outside the village).

**Table 21: Hours in a day attended, reported by parents, by state and management type**

State	District	% attending					Total
		Less than 1 hour	1 to 2 hours	3 to 4 hours	More than 4 hours	NA	
Andhra Pradesh	Government	2.5	3.9	31.2	62.1	0.3	100.0
	Private /Other	1.5	0.4	3.1	91.4	3.6	100.0
	<b>Total</b>	<b>2.2</b>	<b>2.6</b>	<b>21.1</b>	<b>72.6</b>	<b>1.5</b>	<b>100.0</b>
Assam	Government	10.2	60.0	26.6	2.6	0.6	100.0
	Private /Other	Insufficient data					
	<b>Total</b>	<b>10.2</b>	<b>60.0</b>	<b>26.6</b>	<b>2.6</b>	<b>0.6</b>	<b>100.0</b>
Rajasthan	Government	8.0	45.0	20.7	25.5	0.8	100.0
	Private /Other	1.4	5.8	14.0	78.6	0.3	100.0
	<b>Total</b>	<b>3.3</b>	<b>17.1</b>	<b>15.9</b>	<b>63.2</b>	<b>0.5</b>	<b>100.0</b>
<b>TOTAL</b>		<b>5.1</b>	<b>26.2</b>	<b>20.8</b>	<b>47.1</b>	<b>0.8</b>	<b>100.0</b>

- The 'dosage' question: combining frequency and length of attendance

Tables 22 and 23 below attempt to estimate the 'dosage' of ECE program that sampled children receive based on the information provided by families about both frequency (number of days per week) and length (number of hours per day) of attendance. Table 22 disaggregates these data by district, while Table 23 disaggregates them by management type.

If families' estimates of their children's ECE attendance are assumed to be accurate, these data suggest that children in AP have consistently longer exposure to ECE Centres. For example, three quarters of the sample in AP were reported to attend ECE centres 3 or more days a week for 4 hours or more per day. In Assam on the other hand, the proportion of children attending 3 or more days a week, for 2 hours or less is highest (66%).

**Table 22: Frequency & duration of ECE attendance, as reported by parents**

State	District	% Children attending					Total
		3+ days a week for 4 hours or more daily	3+ days a week for 3 to 4 hours daily	3+ days a week for 2 hours or less daily	Less than 3 days a week	NA	
Andhra Pradesh	Medak	82.9	9.0	4.4	3.4	0.4	100.0
	Warangal	65.3	27.0	2.7	2.4	2.7	100.0
	<b>Total</b>	<b>75.3</b>	<b>16.7</b>	<b>3.6</b>	<b>3.0</b>	<b>1.4</b>	<b>100.0</b>
Assam	Dibrugarh	1.8	24.6	64.1	7.9	1.6	100.0
	Kamrup	3.1	23.0	68.4	5.3	0.3	100.0
	<b>Total</b>	<b>2.6</b>	<b>23.6</b>	<b>66.6</b>	<b>6.4</b>	<b>0.8</b>	<b>100.0</b>
Rajasthan	Ajmer	55.7	12.8	17.5	13.5	0.5	100.0
	Alwar	65.4	15.4	11.4	7.5	0.3	100.0
	<b>Total</b>	<b>60.9</b>	<b>14.2</b>	<b>14.3</b>	<b>10.3</b>	<b>0.4</b>	<b>100.0</b>
<b>TOTAL</b>		<b>48.4</b>	<b>17.8</b>	<b>26.3</b>	<b>6.7</b>	<b>0.8</b>	<b>100.0</b>

**Table 23: Frequency & duration of attendance, by state and management type**

State	District	% attending					Total
		3+ days a week for 4 hours and more	3+ days a week 3 to 4 hours	3+ days a week for 2 hours and less	Less than 3 days a week	NA	
Andhra Pradesh	Government	60.4	29.6	5.0	4.6	0.4	100.0
	Private /Other	90.4	2.8	1.7	1.5	3.6	100.0
	<b>Total</b>	<b>71.2</b>	<b>20.0</b>	<b>3.8</b>	<b>3.5</b>	<b>1.6</b>	<b>100.0</b>
Assam	Government	2.1	24.4	66.1	6.6	0.8	100.0
	Private /Other	Insufficient data					
	<b>Total</b>	<b>2.2</b>	<b>24.2</b>	<b>66.2</b>	<b>6.6</b>	<b>0.8</b>	<b>100.0</b>
Rajasthan	Government	24.0	18.3	36.9	20.3	0.5	100.0
	Private /Other	75.6	12.9	4.9	6.4	0.3	100.0
	<b>Total</b>	<b>60.6</b>	<b>14.5</b>	<b>14.2</b>	<b>10.4</b>	<b>0.4</b>	<b>100.0</b>
<b>TOTAL</b>		<b>27.3</b>	<b>19.2</b>	<b>45.5</b>	<b>7.2</b>	<b>0.9</b>	<b>100.0</b>

As seen above, children who attended private centres were reported by their parents to attend for longer than children who attended government centres. In AP, 90% of children who attended private centres were reported to attend for at least 3 days a week, and for four hours or more each day. In Rajasthan, about three quarters of private centre attendees were reported to attend at least 3 days a week, for four hours or more each day. Attendees of government centres in Rajasthan showed more variation in how much time they spent at centres – though most still attended at least three days per week.

- *Observed Attendance*

The preceding sections on attendance used information reported by sampled children’s family members regarding where, when, and for how long children attend. Subsequently, all sampled children who were reported by their families as attending any institution (whether school or ECE Centre) were tracked to the relevant institution, if this was located within the village.<sup>5</sup>

Given that the observed attendance figures reported below are from a single visit to each ECE Centre, it is not surprising to note that families’ estimate of attendance was higher than observed attendance in most districts, particularly in Warangal (recall that Warangal had the highest incidence of dual enrolment). Observed attendance rates of sample children varied widely across districts, from 51.6% in Dibrugarh to 91.6% in Kamrup. However, subsequent tracking visits to be conducted for all sampled children should provide more reliable estimates of children’s participation.

**Table 24: Children’s attendance by register and headcount, by district**

State	District	Number of children	Child marked present in register			Child observed attending		
			Marked present	Not marked present	Total	Observed attending	Not observed attending	Total
Andhra Pradesh	Medak	1339	62.6	37.4	100.0	58.9	41.1	100
	Warangal	779	82.5	17.5	100.0	63.5	36.5	100
	Total	2118	69.9	30.1	100.0	60.6	39.4	100
Assam	Dibrugarh	1557	53.4	46.6	100.0	51.6	48.4	100
	Kamrup	2363	91.6	8.4	100.0	91.6	8.4	100
	Total	3920	76.5	23.6	100.0	75.7	24.3	100
Rajasthan	Ajmer	1203	62.9	37.1	100.0	55.6	44.4	100
	Alwar	1127	64.0	36.0	100.0	54.8	45.2	100
	Total	2330	63.4	36.6	100.0	55.2	44.8	100
Total		8368	71.2	28.8	100.0	66.2	33.8	100

**Note:** Data for Strand A sample only, since children’s attendance was measured differently under Strand B.

<sup>5</sup> This analysis is limited to Strand A children only, because observed attendance was measured differently in Strand B.

### 4.2.3 Household characteristics that are associated with children’s attendance

This section explores relationships observed during preliminary data analysis between household characteristics and children’s attendance in ECE Centres. Assam is excluded from the analyses below because of low variation in enrolment rates and management categories.

Economic status: In order to represent economic status, a household asset index was constructed. Households were assigned one point each for the possession of cultivable land, an electricity connection, and each of nine consumer durable items. Households were one to three points based on the building type of their home (kutcha=1, semi-pucca=2, pucca=3). The raw sum of 1 to 14 was split at the median in each district, and children from households who scored above and below the median on the asset index are compared below.

Mothers’ educational status: Children from households where mothers had completed at least one year of schooling were compared with children from households where the mother had not attended school at all.

In both AP and Rajasthan, children from the lower economic category and children whose mothers had not attended school were more likely to enrol in government centres, while those from the higher economic category and with educated mothers were more likely to enrol in private centres. The difference is especially apparent when private centres are combined with centres outside the village.

In AP, the only state with a relatively substantial enrolment of 4 year olds in Std 1, children with educated mothers and from the higher economic category were less likely to be enrolled in primary school.

In Rajasthan, the only state with large proportions of 4 year olds who were not enrolled anywhere, children with educated mothers and from the higher economic category were more likely to be enrolled in some kind of ECE centre.

**Table 25: Children’s enrolment and household characteristics, by state**

			N	% of children enrolled in:				
				Govt	Pvt/other	Outside village	Primary school	Total
AP	Asset Index	Below median	1253	64.5	12.4	14.0	9.2	100
		Above median	1412	47.6	14.9	31.9	5.6	100
	Maternal Education	Never attended school	1529	67.1	11.1	12.7	9.1	100
		Attended school	1761	46.8	15.8	31.9	5.5	100
RJ	Asset Index	Below median	1085	42.7	35.1	21.8	0.4	100
		Above median	1574	27.3	47.3	25.0	0.3	100
	Maternal Education	Never attended school	1740	43.2	36.7	19.7	0.4	100
		Attended school	1303	22.0	49.0	28.7	0.2	100



## 5. Children’s School Readiness

### 5.1 Overview of School Readiness Inventory

Children’s preparedness to enter school was assessed using the School Readiness Inventory (SRI), which tested baseline abilities in ten competencies. The skill domains addressed in the inventory included language abilities, listening abilities, categorization and pattern recognition, and pre-mathematical abilities. Assessment tasks are described in further detail in Table 26 below. Children were scored in each of the ten competencies according to the point value indicated, and aggregate scores were calculated on a scale of 0 to 40.

**Table 26: Description of Competencies Assessed in the School Readiness Inventory**

	Skill	Assessment activity	Point Value in Total Score
1	Pre-number concepts	Given pictures of four apple trees, children were asked to point to the ones with the least and most apples.	2
2	Space Concept	Given two illustrations of children and houses, children were asked to point to the one in which the child was behind the house.	1
3	Sequential thinking skill	Children were shown illustrations of water filling up a bucket and were asked to determine the correct sequence for the pictures.	5
4	Classification of birds and animals	Children were asked to classify six creatures as either birds or animals.	6
5	Following instructions	Children were asked to raise their hands, and then to pick up an object and bring it to someone.	4
6	Number/object matching	Children were shown the numbers 3, 5, and 8 and asked to match them to illustrations of the corresponding number of objects.	3
7	Reading readiness, identifies beginning sound	Children were asked to identify the beginning sound of words and to match the two words with the same beginning sound.	6
8	Pattern making	Children were asked to repeat and complete a pictorial pattern.	5
9	Sentence making	Children were asked to describe a photograph in complete or partial sentences.	6
10	Relative comparisons	Children were asked to point to a number (among 9, 3, 7, 8) that was less than the number 5.	2

**Testing process:** Children were administered the school readiness inventory one-on-one with a field investigator, during visits to the child’s home. Testing of young children is often a challenging task because they are frequently unused to interactions with strangers and scared, nervous or uncomfortable at attempts to interact with them directly. Field investigators were therefore trained to take their time and to begin by making the child feel as comfortable as possible by engaging in one or more predefined activities such as colouring or looking at a colourful story card. Since the SRI was administered after the household questionnaire, field investigators had already spent an average of about an hour in the household, and sampled children in most cases had already been exposed to their presence during this time. However, in order to be able to standardize and compare

results, investigators were also asked to spend a maximum of 30 minutes administering the tool with each child.<sup>6</sup>

Despite these precautions, 866 of the 11,507 children (7.5%) who were tested did not respond to a single question in the SRI. It is possible that rather than lacking the necessary abilities, these children were not comfortable with the survey and testing procedures and were therefore unwilling to engage with the field investigator. Table 27 shows the breakdown of these children by district, which shows that the vast majority of the non-responding children were located in Rajasthan and Andhra Pradesh.

**Table 27: District breakdown of children who were unresponsive to SRI testing**

State	District	Number of children who did not respond to any question
Andhra Pradesh	Medak	184
	Warangal	175
	Total	359
Assam	Dibrugarh	8
	Kamrup	92
	Total	100
Rajasthan	Ajmer	116
	Alwar	291
	Total	407
<b>Total</b>		<b>866</b>

The non-responding children were, on average, slightly younger than the tested children overall. Table 28 shows the distribution of all tested children by their date of birth, separated into four-month intervals. In the age group of the sampled children – when time periods of a few months can lead to substantial mental and social development – these results might provide a partial explanation for children’s non-response on the SRI. Although the differences in age distributions are small, they are statistically significant.

**Table 28: Age ranges of children who were responsive & unresponsive to SRI testing**

	% of Children born in:		
	Mar-June 2007	July - Oct 2007	Nov 2007 - Feb 2008
Responded to SRI	31.9	37.3	30.8
Did not respond to SRI	25.4	38.7	35.9
<b>Total</b>	<b>31.4</b>	<b>37.4</b>	<b>31.2</b>

The remainder of this section excludes the non-responding children from the analysis and is limited to the 10,641 sampled children who attempted at least one question from the inventory.

<sup>6</sup> For children who did not need coaxing or an extended period of confidence building, the test was administered in an average of about ten minutes. However, few children fell into this category.

## 5.2 Children’s Proficiency in School Readiness Competencies

Before discussing findings from the SRI, it is important to note that sampled children were deliberately restricted to an age group that would have had little or no exposure to an ECE program at the time of the baseline visit. It is to be expected that children in this age group will have low or no proficiency in the tasks being asked of them, but that after a year’s exposure to an ECE program (i.e., during the second round of testing) many of these competencies and abilities will have been fully or partially acquired.

Children’s performance levels on the ten assessed competencies are shown in Table 29 below. Based on the SRI results, competencies can be clustered into three groups: those on which children scored high, medium, and low. High-scoring competencies are those on which approximately 75-80% of children in the entire sample demonstrated partial or full abilities. Medium-scoring competencies are those on which 30% to 60% of children demonstrated at least partial abilities. On low-scoring competencies, approximately 15% of children or less demonstrated partial or full abilities.

It is worth noting that while the proportions of children who scored in the fully correct, partially correct, and incorrect categories in each competency vary substantially across states, the ordering of difficulty of the competencies remains similar. That is, in all states, children demonstrated high, medium, and low proficiency on the same clusters of competencies.

**Table 29: Children’s Proficiency in School Readiness Competencies**

State	Score	Competency									
		High			Medium			Low			
		Following Instructions	Sentence making	Space Concept	Pattern making	Pre Number concept	Classification of birds & animals	Sequential Thinking	Relative comparisons	Number/object matching	Reading readiness
AP	Full	62.5	14.6	81.6	12.2	34.1	17.7	10.3	10.8	8.5	6.1
	Partial	26.0	72.7		49.3	21.8	20.5	22.3		5.0	5.3
	None	11.4	12.7	18.4	38.5	44.0	61.8	67.3	89.2	86.5	88.6
Assam	Full	43.4	16.7	74.3	18.5	51.4	22.8	35.8	29.8	18.8	7.2
	Partial	28.3	62.2		36.8	14.1	26.3	10.8		8.2	21.7
	None	28.3	21.1	25.7	44.8	34.5	50.9	53.5	70.3	73.0	71.0
Rajasthan	Full	66.8	11.1	72.2	3.6	23.1	9.9	5.9	6.8	3.6	0.3
	Partial	19.7	61.9		45.6	21.1	6.5	13.2		0.9	0.5
	None	13.5	27.0	27.8	50.9	55.8	83.6	81.0	93.2	95.5	99.2
Total	Full	58.0	13.9	75.5	10.8	35.4	16.3	16.8	15.4	9.9	4.2
	Partial	24.3	65.0		43.8	19.1	16.9	15.0		4.4	8.7
	None	17.7	21.1	24.5	45.4	45.6	66.9	68.2	84.6	85.7	87.1

Note: Partially correct answers were not possible for the assessment of ‘space concept’ and ‘relative comparisons’.

Competencies in which children demonstrated high levels of ability included following instructions, making sentences by describing a picture, and understanding a space concept. These competencies required children to demonstrate verbal and spatial abilities that are generally acquired through social interactions outside of ECE centres. The space concept competency, which required children to indicate which figure was standing behind a house in a picture, was the one on which the highest proportion of children demonstrated ability. In the category of following instructions, more than half of children demonstrated the ability to follow a complex set of instructions, while approximately another quarter of them could follow a simple set of instructions. On the item testing verbal abilities, most children scored in the partially correct category – indicating their ability to speak in partial, rather than complete, sentences.

Medium-scoring competencies included making patterns, mastering a pre-number concept, classifying birds and animals, and thinking sequentially. Each of these assessment items required children to demonstrate some degree of logical thinking. Many children demonstrated partial abilities in these skill areas. For example, in the case of pattern making, most children exhibited the ability to imitate a pattern, but not to complete one. In only one item in this category – the pre-number concept item -- did the percentage of children receiving full scores noticeably outnumber those receiving partial scores. In the rest of the categories, less than 20% of children received full scores and an additional 15-45% received partial scores.

Low-scoring competencies included making relative numerical comparisons, matching numbers of objects to written numbers, and demonstrating reading readiness through the identification of beginning sounds of words. The items in this category required children to recognize printed numbers and to specify phonetic sounds – concepts whose acquisition is likely to require explicit instruction. While success rates on these items were lower than those on other items, the number of children who demonstrated competence in them is not negligible. They indicate that at least a few children in the sample, particularly in Andhra Pradesh and Assam, have received exposure to printed numbers and phonetic sounds by the age of four, whether at home or in an ECE program.

### **5.3 Distribution of Total SRI Scores**

Aggregate scores on the School Readiness Inventory were calculated on a scale of 0 to 40, using the point values assigned to items that are displayed in Table 26. A summary of the distribution of total scores is shown in Table 30 below. Children's total scores varied highly across the three states and six districts, with average scores ranging from 7.5 to 15.7. In each state, scores varied significantly between districts; this is especially apparent in Rajasthan, where the difference in averages between districts is 2.8 points.

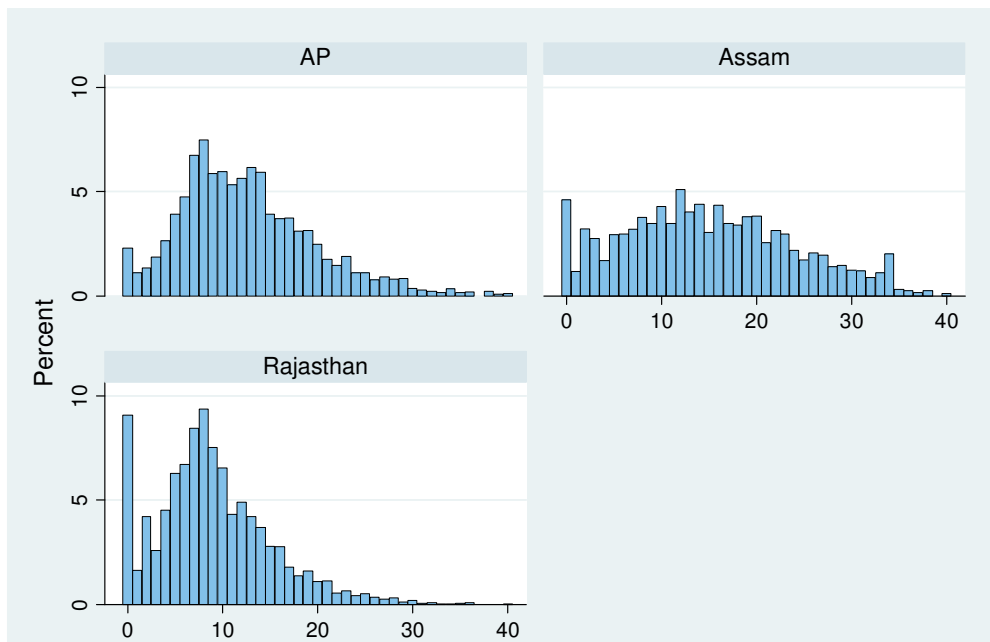
While average scores were higher in Assam than they were in the other two states, one should exercise caution in making comparisons between states using average scores alone. It is worth noting that children in Andhra Pradesh – not those in Assam – had the highest proficiency levels on the most basic competencies, as shown in Table 29 of the previous sub-section. Furthermore, a higher proportion of children in Assam than in Andhra Pradesh scored at the lowest end of the scoring distribution – for example, 16% of children in Assam scored a 5 or below, compared to 13% in Andhra Pradesh. Conversely, a higher percentage of children in Assam scored at the higher end of

the distribution, as can be seen by looking at the 75<sup>th</sup> percentile scores – 17 in Andhra Pradesh and 21 in Assam. An examination of the entire score distribution, shown in the histograms of Figure 1 below, shows that scores in Andhra Pradesh clustered more closely to the mean, while scores in Assam were spread more evenly across the 0-40 scale. The distribution of scores in Rajasthan followed a similar pattern as in Andhra Pradesh, though shifted toward the left with lower scores overall and a higher percentage of children scoring zero.

**Table 30: Summary of SRI Total Score Distribution by district and state**

State	District	Children Tested	Mean Score	Standard Deviation	Min	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> percentile	Max
Andhra Pradesh	Medak	1732	12.0	7.3	0	7	11	15	40
	Warangal	1231	13.4	6.6	0	8	13	18	35
	Total	2963	12.6	7.1	0	8	12	17	40
Assam	Dibrugarh	1317	13.9	9.0	0	7	13	20	38
	Kamrup	2122	15.7	9.0	0	9	15	22	40
	Total	3439	15.0	9.1	0	8	14	21	40
Rajasthan	Ajmer	2161	10.3	6.5	0	6	10	14	40
	Alwar	2038	7.5	5.1	0	4	7	9	36
	Total	4199	9.0	6.0	0	5	8	12	40
<b>Total</b>		<b>10601</b>	<b>11.9</b>	<b>7.9</b>	<b>0</b>	<b>6</b>	<b>11</b>	<b>16</b>	<b>40</b>

**Figure 1: Total SRI Score Distributions by State**



**Table 31: Total SRI Scores by Age Group**

State	Date of Birth	Children Tested	Mean Score	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> percentile
AP	Mar-June 2007	991	13.4	8	12	17
	July - Oct 2007	1025	12.5	8	12	17
	Nov 2007 - Feb 2008	864	11.7	7	10	16
Assam	Mar-June 2007	1043	15.3	9	15	21
	July - Oct 2007	1127	14.9	8	14	21
	Nov 2007 - Feb 2008	1097	15.4	8	15	22
Rajasthan	Mar-June 2007	1220	10.0	6	9	14
	July - Oct 2007	1649	9.0	5	8	12
	Nov 2007 - Feb 2008	1176	8.0	4	7.5	11

*Performance by Age:* Given the rapid pace of social, verbal, and mental development of four-year-old children, SRI scores were examined in three age categories, each spanning a four-month date-of-birth interval. Age had a clear relationship with children’s school readiness in two states. In both Rajasthan and AP, each additional four months of age was associated with an average score increase of between .8 and 1.0 points on the SRI. In Assam, no pattern in scores by age can be discerned.

#### 5.4 Household Factors Influencing School Readiness

Several household factors appeared to have an influence on children’s SRI scores. Higher economic status and higher levels of maternal education were associated with higher levels of school readiness. As might be expected, these influencing factors are highly correlated; mothers are more likely to have attended school in households with more economic resources. Therefore, connections between household economic status or maternal education and SRI scores should not be interpreted as directly causal relationships, but rather as the result of interrelated factors that contribute to children’s school readiness.

*Economic Status:* Household economic status was measured using the asset index described earlier. In every state, children from households that placed above the median on this asset index scored higher on the SRI than children from households placed below the median. Differences in scores amounted to 1.7 points in Andhra Pradesh, 3.0 points in Assam, and 1.6 points in Rajasthan. SRI scores broken down by household asset index placement are shown in Table 32.

**Table 32: Total SRI Scores by Asset Index Placement**

State	Asset Index Placement	Children Tested	Mean Score	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> percentile
AP	Below median	1059	11.7	7	10	16
	Above Median	1206	13.4	8	13	17
Assam	Below median	1185	13.4	6	12	20
	Above Median	1623	16.4	10	16	23
Rajasthan	Below median	1376	8.1	4	7	11
	Above Median	2109	9.7	6	9	13

*Maternal Education:* In the household survey, mothers were asked if they had attended school and how many years of school they had completed. In every state, children whose mothers had completed at least one year of school scored higher than children whose mothers had never been to school. Average differences amounted to 1.4 points in Andhra Pradesh, 1.3 points in Assam, and .9 points in Rajasthan. These differences, while significant, were less pronounced than those related to household economic status. SRI scores broken down by mothers' school attendance are shown in Table 33 below.

**Table 33: Total SRI Scores by Maternal Education**

State	Mother's schooling status	Children Tested	Mean Score	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> percentile
AP	Did not attend school	1259	11.8	7	11	15
	Attended school	1468	13.2	8	12	17
Assam	Did not attend school	661	14.4	8	14	20
	Attended school	2112	15.7	9	15	22
Rajasthan	Did not attend school	2410	8.6	5	8	12
	Attended school	1546	9.5	6	9	13

*Household Environment:* While it is clear that children from more secure economic backgrounds and more educated families experience advantages in school readiness, it remains to be explained what aspects of their household environment provide these advantages. Several questions on the household survey provide insight into possible explanations. Families were asked whether they ever read to their child, tell stories to their child, or provide help with a learning task to their child; whether they had spoken to a staff member at their child's ECE centre within the past six months; and which of nine print materials were present in their homes. Table 34 displays the results of these items by district and state.

Overall, 62% of children were reported to receive some form of learning support from their families. The most common form of learning support received was help with a learning task, such as learning to recognize letters, numbers, animals, or shapes. Fewer children were read stories or told stories – but these numbers varied across the districts.

61% of families of enrolled children reported that they had spoken to an ECE centre staff member within the past six months. These numbers also varied highly across states and districts; in Assam – a state with higher ECE participation within the village-- nearly all families reported having spoken to an ECE centre staff member.

Children also came from households with varying access to print materials. Nearly all households – all but 11% -- had at least a calendar or a school textbook within the home. Beyond these commonly available print materials, the majority of households also had some additional material, which could have included a newspaper, magazine, religious text, book, or children's story books, alphabet/ barakhadi/number book, or picture book.

**Table 34: Learning support provided to children, family interaction with ECE Centre Staff, and Household literacy environment**

State	District	% of children receiving learning support: *				% enrolled children whose parents have spoken to ANW worker in last 6 months	% of children with print materials in households		
		Reads to them	Tells them stories	Helps with learning task	Any of the three		None	Calendar or school textbook only	Material besides calendar/ school textbook
Andhra Pradesh	Medak	25.0	33.6	56.2	62.2	67.9	7.3	45.4	47.2
	Warangal	21.1	20.4	55.2	59.2	52.9	13.9	58.6	27.4
	<b>Total</b>	<b>23.3</b>	<b>27.8</b>	<b>55.8</b>	<b>60.9</b>	<b>61.5</b>	<b>10.2</b>	<b>51.2</b>	<b>38.6</b>
Assam	Dibrugarh	76.1	77.6	85.8	89.5	96.5	7.1	25.0	67.9
	Kamrup	85.1	83.1	87.8	89.3	94.9	6.4	16.9	76.7
	<b>Total</b>	<b>81.5</b>	<b>80.9</b>	<b>87.0</b>	<b>89.4</b>	<b>95.6</b>	<b>6.7</b>	<b>20.2</b>	<b>73.2</b>
Rajasthan	Ajmer	12.2	17.9	26.8	30.7	26.5	20.7	35.7	43.7
	Alwar	15.8	34.0	52.1	58.1	40.6	10.3	30.3	59.5
	<b>Total</b>	<b>14.0</b>	<b>26.0</b>	<b>39.6</b>	<b>44.6</b>	<b>34.0</b>	<b>15.4</b>	<b>33.0</b>	<b>51.7</b>
<b>Total</b>		<b>35.4</b>	<b>41.7</b>	<b>57.6</b>	<b>61.9</b>	<b>61.1</b>	<b>11.4</b>	<b>35.0</b>	<b>53.6</b>

Children’s access to the enriching learning environments and parental support described above are strongly connected to household economic status. Table 35 displays results on each indicator discussed above, broken down within states by the household’s placement on the economic asset index.

**Table 35: Learning support provided to children, Family interaction with ECE Centre Staff, and Household Literacy Environment by Household Asset Index Placement**

State	Asset Index Placement	% of children receiving learning support: *				% enrolled children whose parents have spoken to ANW worker in last 6 months:	% of children with print materials in households		
		Reads to them	Tells them stories	Helps with academic task	Any of the three		None	Calendar or school textbook only	Material besides calendar or school textbook
AP	Below median	20.7	24.5	47.0	51.8	59.3	17.7	47.6	34.7
	Above Median	25.4	30.2	65.1	70.2	63.4	4.2	53.1	42.8
Assam	Below median	67.0	67.0	75.0	78.6	91.0	23.6	22.4	53.9
	Above Median	90.1	89.8	92.9	94.4	98.1	0.3	15.1	84.7
Rajasthan	Below median	9.6	19.8	29.7	34.6	25.8	26.9	33.9	39.2
	Above Median	18.3	31.8	47.1	52.4	40.4	7.4	31.0	61.6



The effects of economic status on children’s access to learning support, parental involvement in education, and access to households with print materials were noticeable in every state and on every indicator. In each state, the proportion of children who received some form of learning support increased by 17-19 percentage points if their families lay above the median on the economic index. Similar increases were seen in the likelihood that parents of enrolled children had recently spoken to an ECE centre staff member. Additionally, households with more economic resources were more likely to have print materials beyond calendars and school textbooks, and much less likely to have no print materials at all.

Learning support received at home appeared to have a positive relationship with children’s school readiness, as shown below in Table 36 below. The results were visible in each state – with differences in average scores of 1.9 points in Andhra Pradesh, 3.4 points in Assam, and 1.7 points in Rajasthan. These differences are similar to those seen when comparing households above and below the household asset index median. Ultimately, this suggests that a variety of factors interact within the household to affect the school readiness levels of four year olds before their exposure to institutional education environments.

**Table 36: SRI Scores by Children’s Access to Learning Support in the Home**

State		Children Tested	Mean Score	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> percentile
AP	Does not receive learning support	1132	11.4	7	10	15
	Receives learning support	1831	13.3	8	12	17
AS	Does not receive learning support	641	12.3	6	11	18
	Receives learning support	2798	15.7	9	15	22
RJ	Does not receive learning support	2321	8.2	4	8	12
	Receives learning support	1878	9.9	6	9	13

## 5.5 Connections between School Readiness and ECE Participation

Preliminary results from the baseline assessment suggest that enrolment in and regular attendance of an early childhood education program may have a positive influence on children’s school readiness. However, given that at the time of the baseline visit most sampled children had received limited exposure to early childhood education programs, these results may reflect other advantages enjoyed by children who are enrolled in and attending preschool, such as those deriving from parental education or higher economic status. An analysis of endline scores, after children have received lengthier exposure to ECE programs, will enable more precise conclusions regarding the effects of ECE participation on school readiness. Baseline results are summarized below.

*Enrolment and Attendance:* In Assam and Andhra Pradesh, nearly all children who were administered the SRI were both enrolled in and attending a preschool. However, the lower participation rate of children in Rajasthan allows for comparisons between SRI scores of enrolled and non-enrolled children, as well as attending and non-attending children. As shown in Table 37, children in Rajasthan who were enrolled in an ECE centre received higher scores on the SRI than children who were not enrolled anywhere. Children who were reported by parents to be attending the ECE centre also received higher scores than those reported to not be attending.

**Table 37: SRI scores of children in Rajasthan by Family-Reported Enrolment & Attendance Status**

	Asset Index Score	Children Tested	Mean Score	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> percentile
By Enrolment	Not enrolled	1272	6.9	3	7	10
	Enrolled	2883	9.9	6	9	13
By Attendance	Not attending	712	7.1	3	7	10
	Attending	3355	9.5	6	9	13

Further examination of the scores of children who are enrolled in ECE Centres suggests that the centre's management type may have some association with school readiness. Assam, where the vast majority of children attend government schools within the village, is excluded from the comparison below. Under the assumption that most centres in which children enrol outside the village are private centres, centres outside the village (of unknown management type) have been combined with private centres for the purpose of this analysis. In Rajasthan, and more evidently in Andhra Pradesh, SRI scores of children enrolled in privately managed centres were higher than scores of children enrolled in government centres within the village (Table 38).

**Table 38: SRI scores of enrolled children by centre management type**

State	Type of ECE in which child is enrolled	Children Tested	Mean Score	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> percentile
AP	Government in village	1611	11.4	7	10	15
	Private in village/unknown outside village	905	14.8	9	13	20
RJ	Government in village	877	8.5	5	8	12
	Private in village/unknown outside village	1701	10.5	7	9	14

*Observed Attendance:* Children who were noted as present by the observer on an initial visit to the child's ECE centre received higher scores on the SRI than children who were not present. In the absence of more comprehensive attendance data, limited conclusions can be made regarding the effects of attendance on these children's school readiness. Preliminary results are shown in Table 39 below. Differences in mean scores are apparent in Assam and Rajasthan, but not in Andhra Pradesh.

**Table 39: SRI scores of children by observed attendance**

State	Attendance during observation	Children Tested	Mean Score	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> percentile
AP	Observed present	1068	13.0	8	12	17
	Not observed present	549	12.9	7	11	18
Assam	Observed present	2156	16.4	10	16	23
	Not observed present	710	15.4	8	15	22
Rajasthan	Observed present	1176	9.6	6	9	13
	Not observed present	852	8.7	5	8	12

## 6 Conclusions

The baseline School Readiness Inventory provides a picture of children’s preparedness to enter school at the age of four, after limited or no exposure to formal early childhood education. Results indicate that most children have begun developing verbal, pre-mathematical, and logical capabilities, and that these abilities develop further over periods of several months. Small percentages of children exhibit preparedness for more complex academic tasks such as reading or manipulating numbers.

Preliminary results indicate that several factors – maternal education, economic status, the household learning environment, and ECE program enrolment and attendance – influence children’s school preparedness. These influences interact in many ways, conferring multiple advantages on some children, and multiple disadvantages on others. Aside from illuminating possible predictors of children’s school readiness, the current SRI results provide a benchmark from which to assess children’s future learning over the course of a year, which can be analyzed against a range of household and ECE program factors.