Baseline Study on International Development of Early Learning Assessment (IDELA)

Saptari

Submitted to
Save the Children Nepal
Nepal Country Office
Shree Krishna Bhawan, Airport Gate, Shambhu Marga
Kathmandu Nepal,

Submitted by
Research Inputs and Development Action (RIDA)
House # 1357, Bhimsengola-34, Kathmandu, Nepal
GPO Box: 25414, Phone: +977-01- 4470803
Email: mail@ridanepal.org, ridanepal@yahoo.com

August, 2016
Kathmandu Nepal

Contents

Acknowledgement

List of Acronyms

DOE	Department of Education
DEO	District Education Office
ECCD	Early Childhood Care and Development
ECD	Early Childhood Development
ECED	Early Childhood Education and Development
EFA	Education for All
GoN	Government of Nepal
IDELA	International Development and Early Learning Assessment
MDG	Millennium Development Goal
NASA	National Assessment Student's Achievement
NER	Net Enrolment Rate
PPC	Pre-Primary Classes
RIDA	Research Inputs and Development Action
SSRP	School Sector Reform Program
STR	Student-Teacher Ratio
SCN	Save the Children Nepal
SMC	School Management Committee
UPE	Universal Primary Education
VDC	Village Development Committee

1. Executive Summary

Context. In 2015, Save the Children has education programs in 18 districts and works with 1402 ECCD centers and 1332 schools. Save the Children began implementing ECCD programs in Nepal in 1997 to help children to learn and develop their full potential. Recently, Save the Children has developed a tool to measure ECCD children's developmental outcomes - International Development and Early Learning Assessment (IDELA). Research Inputs and Development Action (RIDA) supported Save the Children to conduct baseline study using IDELA tool in Saptari district during June - August, 2016 with the objectives to find out the current status of children's early learning and development outcomes in the district by program (program and non-program), sex (boy & girl), and caste/ethnic groups and to find out the current status of care giving practices in Saptari district.

Methodology and limitations. The study included three tools: IDELA test, survey with parents/caregivers, and team member paper (with information related to ECCD centers). IDELA included five domains focused on gross and fine motors skills, emergent literacy, emergent numeracy, socio-emotional development and approaches to learning. The tool was slightly adjusted for use in Nepal, and was translated to Nepali, and local language (Maithali).The tests were administered through trained local enumerators. IDELA test was administered among 445 ECCD enrolled children (including 242 in control and 205 in intervention area) from around 38 ECCD centers. Likewise, the parents/caregivers survey was conducted with 400 parents/caregivers of the children sampled and selected for IDELA test. The study used quasi experimental design in a setting where the sites were not identified randomly. The control and treatment sites were not identical.

Findings

Family environment. The average age of the child was around 4 years with higher proportion of girls in both treatment (52.1%) and control (55.0%) sites. Both fathers and mothers were found to be less literate in the program area. Fathers of control areas were found more literate than those of the program areas (58.4% compared to 46.7%). Average number of children below six years of age was found to be around 1.8 for both control and treatment areas. There was one member belonging to 6-12 years of age group and around four members over 18 years.

Home learning environment. The availability of materials that are directly related to learning was quite low with the children in treatment areas having lower access. The pattern was similar in case of availability of toys too. Although many children receive support from their parents, differences were found in the activities like telling stories, singing, taking child out and playing with child in control and treatment sites. Treatment areas were significantly on the higher side in the activities like mother telling stories to child, singing songs, taking child out, drawing with child and hitting the child. The involvement of others in the activities like taking child out, playing with child, drawing with child, hugging, hitting and yelling were higher in control VDCs as compared to the treatment areas. Similarly, a number of adversities were affecting children in both the control and treatment areas. Hitting and yelling were rampant.

IDELA results. Total baseline IDELA scores depict that children belonging to the centers of treatment areas have significantly stronger skills as compared to the children of control areas. The differences are also found in the scores between girls and boys. Boys were in the better position than the girls. Scores on motor skills were low for both the groups with no significant difference between boys and girls and by group (control vs treatment). Within emergent numeracy

skills for children in this study analyses find that on average children in ECCD centers of the treatment VDCs have significantly stronger emergent numeracy skills than children of the control VDCs. Within emergent literacy, analyses find that on average children in treatment area have significantly stronger emergent literacy skills than children of control ECCD centers. Looking at socio-emotional development skills for children in this study, analyses find that on average children in the treatment areas have significantly stronger socio-emotional skills than children of the control centers. Similar to the other domains, children in treatment area significantly outperformed the children of control VDC. Total baseline IDELA scores depict that children belonging to the centers of treatment areas have significantly stronger skills as compared to the children of control areas. The differences are also found in the scores between girls and boys. Boys were in the better position than the girls.

IDELA key indicators mean scores, by group and gender

	Control		Treatment		Significant Difference
	Boys	**Girls**	**Boys**	**Girls**	**School type**
Motor skill	18.9%	15.9%	18.2%	16.5%	
Early literacy	30.9%	23.8%	35.1%	31.2%	Type (0.000***), Sex (0.001***)
Early numeracy	38.4%	32.9%	45.9%	46.2%	Type (0.000***), Sex (0.09*)
Socio-emotional development	31.6%	30.0%	37.5%	38.0%	Type (0.001 ***)
Total Executive Function	33.6%	33.3%	45.1%	40.9%	Type (0.000***)
IDELA Total	30.5%	26.2%	34.8%	33.6%	Type (0.000***), Sex (0.03**)

Factors associated with the IDELA scores. Looking into the connection between home environments and children's development positively associated factors include children's age, activity index, protection index, father's education and mother's education.

Conclusion*.* On the whole, the baseline findings of Saptari district clearly indicate that the existing level of child learning and development is low with girls significantly lower level of learning and development compared to boys. The IDELA score for project ECCD centers is significantly higher than control ECCD centers. The availability of learning resources was low for children while their participation in activity was quiet high. There are some factors with significant associations to IDELA score. The availability of learning activities and protective factors together with parental education contributed to the score. Save the Children Nepal has an opportunity to synthesize and utilize the findings from this study to inform the project design and project implementation strategies.

Recommendations RIDA recommends Save the Children and its partners to review the study findings, and have detailed discussions and brainstorming to generate possible inferences for the project. Nevertheless, some key inferences are:
- Support family members especially father and other family members to increase number of learning activities for children.
- Promote activity with father, and other family members
- Put special focus on girls on having adequate learning activities
- Prioritize the promotion and increase of protective factors like family members' time to the child, care and affection
- Focus on the test with low score
- The project is advised to focus on the skills with low scores.

2. Introduction

2.1 Background

Despite a decade long armed insurgency and other political turmoil in the country, Nepal has witnessed significant progress in terms of expansion of public school system, especially at the primary level. The Constitution of Nepal, 2015 has recognized basic education as a fundamental right of all citizens along with the provision of free education up to the secondary level. Education has been the chief social sector that receives highest proportion of government budget. For FY 2015/16 government has allocated 98 Billion Nepali Rupees (12.9% of the total public expenditure) for education sector (MOF, 2015). The school education in Nepal has expanded over the years with massive increase in the number of schools, students, and teachers. Universal primary education (UPE) has been explicitly prioritized agenda of the government following to its commitments to Education for All (EFA), and Millennium Development Goals (MDGs). The country is currently implementing School Sector Development Program (SSDP), third sector wide approach program of its kind.

Nepal is considered to be remarkable achiever in terms of school enrollment especially in primary level. Based on the most recent flash report published in 2014, the net enrolment rate (NER) for the primary level (grades 1-5) was 96.2 percent[1] while the NER for lower secondary and secondary level is around 75 percent, and 56 percent respectively (DOE, 2014). These figures indicate high level of drop out and repetition from primary to lower secondary level.

Table 1. Student drop out and promotion rates for various levels

Levels	Total number of students	STR (community school)	NER (%)	Promotion Rate (%)	Drop Out Rate (%)
Primary (1-5)	4,335,355	36	96	86.7	4.2
Lower secondary (6-8)	1,835,313	60	75	90.1	5.3
Secondary Level (9-10)	900,585	37	56	91.4	5.3

Source: DOE (2015), Flash I Report, 2014-2015

Along with improvements, there are also numerous challenges. The school education suffers in terms of internal efficiency, and quality of education. Based on National Assessment of Student's Achievement (NASA) learning achievement studies conducted during 2011-2013 commissioned by Education Review Office, Ministry of Education, the learning achievement rates are lower (in between 50-60 percent) for primary grades and around 40 percent for secondary grades in the most recent (DOE, 2014). The key reasons for poor learning outcomes are: poor classroom teaching learning practices, inadequate participation of children in the learning process, and poor

---

[1]The figure is believed to have been inflated due to wrong reporting by schools because the household surveys present completely different picture. The National Living Standards Survey (NLSS-III) published in 2011 reported that the actual NER observed in the household survey was only 68.8 percent which was a decrease of nearly 3 percent from the NLSS-II figures of 72 (CBS, 2007 & CBS, 2011b).

availability of learning materials for children. There have also been numerous efforts to improve the quality of education in community schools.

There is a problem in ensuring equal rights and quality education for all children due to huge gap in quality of public schools (community schools) that cater children from poor households, and private schools (institutional schools) that cater to children from rich sections. School education reflects the existing inequity in the country. There is also huge difference in access to school across Nepal due to socio-economic and demographic groups. Raising education quality in public/community schools in Nepal is an urgent priority that could transform the country's economic landscape.

While the constitution as well as legal documents have explicitly mentioned school education, there is very limited priority given to Early Childhood Development (ECD). The local self governance act, 1991 classified ECD as a prime responsibility of the local government (VDC, Municipality). The early childhood education and development (ECED) goal stipulated in the EFA National Plan of Action (2001-15) provides a basis for the implementation of ECD/PPCs in the SSR Plan. In Nepal, the SSRP goal regarding the Early Childhood Development (ECD) activities is in line with the Dakar Framework of Action for EFA (2001-15). In recent years, ECD has received some priority. There is a separate section within Department of Education (DOE) to deal with ECD. Flash Report collects and presents the data related to ECD on a regular basis.

There are various forms of ECD/PPCs, which include school-based ECD centers, community-based ECD centers and privately managed pre-primary classes. Schools give different names to these classes such as Nursery, Kindergarten, Montessori etc. There are 35,121 ECD centers in the country which includes 30,034 (86%) community based or community schools based centers. The remaining 5,087 (14.5%) of the ECD/PPCs are operating under institutional schools.

Table 2: ECD Center types

Eco-belts	Community	Institutional	Total
Mountain	3,117	186	3,303
Hill	13,620	1,610	15,230
Valley	795	1,169	1,964
Terai	12,502	2,122	14,624
Total	30,034	5,087	35,121

Source: DOE (2015), Flash I Report, 2014-2015

Based on the Flash I Report of 2014/15, in total 1,014,339 children are catered by 35,121 ECD/PPCs. The present ratio of total children enrolled in the ECD/PPCs and the existing number of ECD/PPCs is 1:29 (compared to 1:30 in the last school year), indicating a need for mechanisms to enable ECD/PPCs to maintain the prescribed class size of ECD/PPCs and children ratio (i.e. 1:20) (DOE, 2015). Based on age wise enrollment (considering age 4 as appropriate for ECD), 78 percent of students were of age four. Altogether, there are 41,447 ECD facilitators currently working in ECD centers (DOE, 2015).

While ECD has clearly expanded over the years despite unclear resource priority of the government especially in terms of managing ECD facilitator and infrastructure, there is very limited knowledge about the existing status of children's learning and development in ECD centers in Nepal.

2.2 Context

Save the Children began implementing ECCD programs in Nepal in 1997 to help children to learn and develop their full potential. In 2015, Save the Children had education programs in 18 districts and worked with 1402 ECCD centers and 1332 schools.

Recently, Save the Children has developed a tool to measure ECCD children's developmental outcomes. This tool is commonly known as International Development and Early Learning Assessment (IDELA) and will be used to establish a baseline of children's learning and development at beginning of the project and a final assessment of children at the end of the school year. IDELA was developed by Save the Children for the assessment of children aged 3.5 – 6.5 years. Testing and modifying the tool over multiple years across many countries (Bangladesh, Bhutan, Egypt, Ethiopia, India, Indonesia, Mali, Malawi, Mozambique, Pakistan, Rwanda, and Zambia) has resulted in a 24-item assessment that balances three key dimensions: psychometric rigor, feasibility, and international applicability. As a result, IDELA is easily translated and administered in varied cultural contexts, and has strong reliability and validity.

IDELA includes six domains focused on gross and fine motors skills, emergent literacy, emergent numeracy, socio-emotional development, executive control and approaches to learning. Table 1 displays the items that will be included in this study's IDELA.

Table 3: Core IDELA items

Gross and Fine Motor Skills	Emergent Literacy	Emergent Numeracy	Socio-emotional Development	Executive control	Approaches to learning
Hopping	Print awareness	Size/length identification	Friends	Short-term memory	Attention
Copying a shape	Expressive vocabulary	Sorting	Recognizing emotions in self	Inhibitory control	Confidence
Drawing a human figure	Letter identification	Number identification	Recognizing emotions in others		Concentration
Folding paper	Emergent writing	Shape identification	Conflict resolution		Diligence
	Phonemic awareness	One-to-one correspondence	Personal information		Motivation
	Oral comprehension	Simple operations			Curiosity
		Puzzle completion			

Source: Save the Children, IDELA Guidelines

Saptari is one of the Save's working districts where ECD related interventions are currently underway along with other school level interventions. In Saptari, there are 726 ECD/PPCs with 22,200 students (including 11374 girls, 51%) currently enrolled in the centers. Among the enrolled children, 7579 were dalits (34%), and 5,268 were janajatis (24%). In Saptari district, 90 percent of the new entrants in schools had previous ECD experience. There were altogether

853 facilitators currently working in ECD centers (including 45 male facilitators). Among the total facilitators, 786 (90%) were trained. In total,17 facilitators did not meet the minimum qualification requirements of completing grade 10. The facilitator to children ratio was 26 children catered by one facilitator (DOE, 2015, Flash - I Report 2014/15).

Research Inputs and Development Action (RIDA) supported Save the Children to conduct baseline study using IDELA tool in Saptari district during June - August, 2016. This is the baseline study report.

2.3 Study Objectives

Primarily, the baseline was envisioned to enable the systematic monitoring and evaluation of the project by setting up the starting point. The set objectives for this baseline are more related to getting current value for outcome indicators. This baseline also aims to provide information to inform the design and adaptation of Save the Children's ECD programs to the context and children's specific needs.

The specific objectives are as follows:
1. Find out the current status of children's early learning and development outcomes in Saptari district by program (program and non-program), sex (boy & girl), and caste/ethnic groups
2. Find out the current status of care giving practices in Saptari district

2.4 Key Research Questions

The key research questions of the study were as follows:

1. What do the family environment and home learning environment look like for children in intervention and comparison ECCD centers?
   - What assets and gaps exist with regard to:

- types of books in the home	- types of learning activities that at least one household member is doing with the children
- types of toys in the home	- Amount of time spent engaging/stimulating children

2. What does children's development status look like in terms of their performance on IDELA domains, subtests, and overall IDELA score? (disaggregated by sex and age, similar to Afghan report)
3. How do the following correlate, if at all, with IDELA score? (controlling also for sex, age, ECCD experience and number of household members)

- Language - Caste - Socio Economic Status - Home learning environment: resource index (either books, toys, or both) and activity index	- Parental expectations - Parental education (use the one variable that has the most variation or is most strongly correlated with IDELA)

4. What are the most and least prevalent types of adversity?
    - What is the prevalence of spanking/hitting children and caregivers, and what is the prevalence of child neglect? (both of these we will report to the relevant local child board)
    - How does exposure to adversity correlate to IDELA scores in this context?

3. Study Design & Methodology

This sub-section describes overall study design and methodology.

3.1 Baseline Design

Quasi-experimental design was used for the baseline study creating a 'control' group for assessment of 'counterfactual'. Although this study does not meet all requirements for experimental design, the design has been made to ensure that there is enough ground to have indicative comparison between 'project' and 'non-project' sites. The individuals/areas where the intervention are currently undergoing were selected purposively (without any form of random assignment) by the implementers. The VDCs were considered as 'zone of influence'. For every project VDC, another non-project VDC was selected to enable comparison, based on discussion with the local education authority - District Education Office. The ECD centers within non-project sites or VDCs were selected randomly. For this study, the study design including the sample size calculation was overseen by Save the Children Nepal.

The chart below provides graphical illustration of how quasi-experimental design will work illustrating the use of 'double difference' calculation during the endline study.

Chart – 2: Quasi Experimental Design (Double Differences)
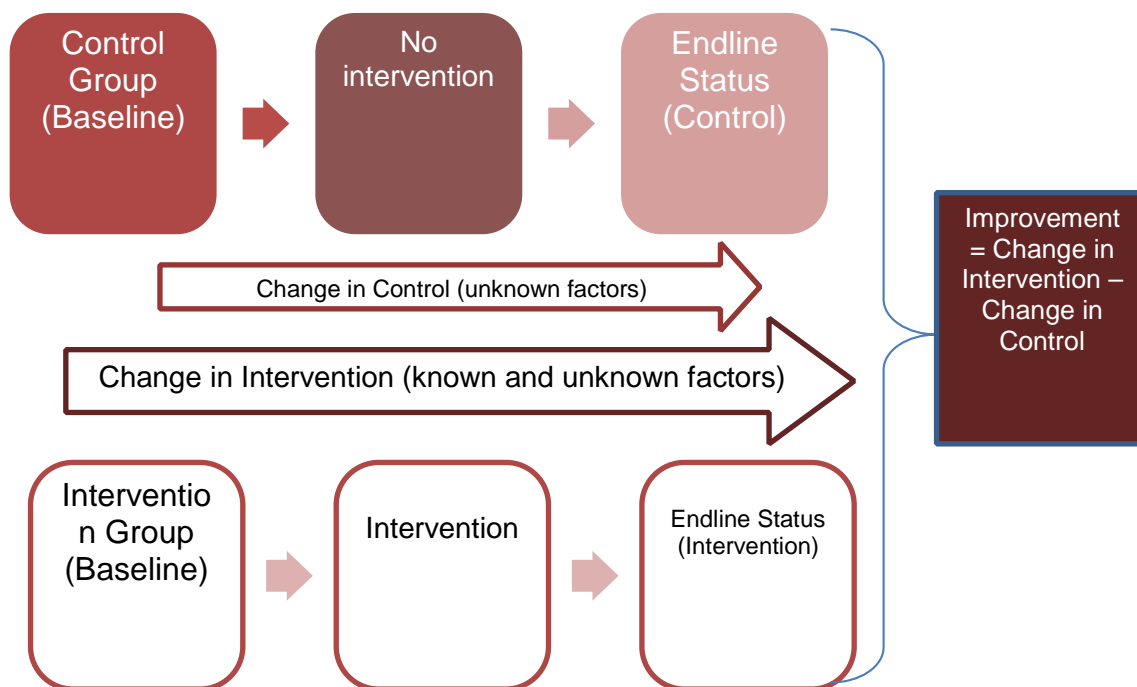
Based on the design, new enrolled children in ECCD are tested at the beginning of the academic calendar. They will again be tested after end of the academic session for the endline. The tests will happen at the 'project' as well as 'non-project' sites. At the end, comparison will be made between baseline and endline figures across treatment and control groups to determine whether ECD related interventions had any influence on the children's learning and development.

3.2 Methodology

This section summarizes methods and tools used in the baseline study. The baseline study consisted of International Development and Early Learning Assessment - IDELA test with children who were newly enrolled and attending ECD centers, and survey with the parents of selected children.
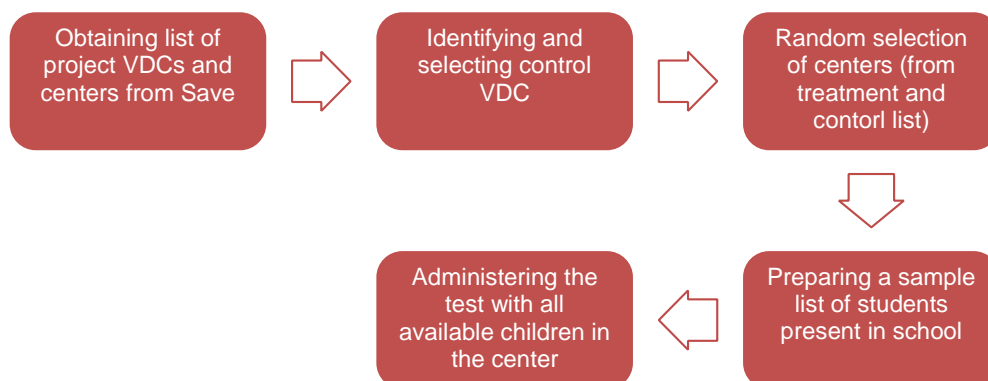
Tool 1: International Children Development and Early Learning Assessment - IDELA

Rationale. The objective of learning achievement assessment is to identify the change i.e. improvement in the learning achievement of the children in the program areas.
Indicators: IDELA Score

Number and sampling. For IDELA test, around 445 children were selected including 202 from the program VDCs and 242 from control VDCs. Control VDCs were identified through consultation with SCN, local implementing partner organization and district education office (DEO). From the list of centers of selected VDCs, 38 centers were randomly selected with 20 centers in the control and 18 in the treatment areas. The list of schools and VDCs is included in the Annex I. In each identified centers, all available newly enrolled children between 3.5 to 6.5 years old were included for the test. The steps followed for selecting the children for IDELA is as given below:

Chart – II: Sampling Steps

Obtaining list of project VDCs and centers from Save	→	Identifying and selecting control VDC	→	Random selection of centers (from treatment and contorl list)

↓

Administering the test with all available children in the center	←	Preparing a sample list of students present in school

Considerations in facilitating IDELA test. Before taking the test, ECD facilitators and school head teachers were informed and consulted about the test and its nature. After random sampling of children, the children appearing for test were clarified on what the test is about. The researchers tried to make them comfortable with seating arrangements and test venue maintaining privacy and peace to avoid disturbances from other children and assessors.

Contents. The IDELA Score is constructed based on scores obtained for motor development, literacy, numeracy, socio-emotional development, approaches to learning, and executive control. Altogether 22 items were included in the test. From the international guidelines on IDELA, two items (copying a shape within fine motor, and hopping within gross motor) were removed to save time when administering the test. The students were separately graded for each items before calculating a weighted IDELA score based on the four core domains of motor development, emergent literacy, emergent numeracy, and socio-emotional development.

Table 4. IDELA Domains and Skills

Gross and Fine Motor Development	Emergent Literacy and Language	Emergent Numeracy	Socio-emotional Development	Executive control	Approaches to learning
Drawing a human figure	Print awareness	Measurement and comparison	Peer relations	Short-term memory	Attention
Folding Paper	Expressive vocabulary	Classification/ Sorting	Emotional awareness	Inhibitory control	Confidence
	Letter identification	Number identification	Empathy		Concentration
	Emergent writing	Shape identification	Conflict resolution		Diligence
	Initial sound discrimination	One-to-one correspondence	Self-awareness		Motivation
	Listening comprehension	Simple operations			Curiosity
		Problem solving			

Tool 2: Parents/Caregivers survey

Rationale
The objective of parents/caregivers' survey was to identify existing care giving practices. The survey with parents/caregivers collected the information about parenting knowledge, care giving practices and various adversity and protective factors.

Number and sampling
The survey was conducted with 400 parents/caregivers of the children sampled and selected for IDELA test. Some parents were invited to schools while others were reached at home.

Contents
The survey with parents collected background information related to the family and the children. It included following information:

Table 5. IDELA Caregiver questionnaire

Section	Description
1. General family information	Sex of child, child age, number of children at home, parental literacy, parental education, languages spoken at home
2. ECCD experience and educational expectations	Child participation in ECCD programs, details of participation, parental expectation and aspirations of child's educational attainment
3. Access to early learning materials and resources at home	Types of reading materials at home, types of toys at home
4. Parenting practices and support for learning and development	Adults in the home engaging with children to promote learning and development

| Section	Description
5. Inadequate care	Children left alone or in the care of another young child
6. Socioeconomic status	Housing materials, objects/appliances owned, land/animals owned
7. Adversity, protective factors & resilience	Adversity: Disasters, illness, shocks, conflicts, threats etc.; Protective factors: low adult-child ratio, remittances from migrant worker, accessible health facility

3.3 Study Procedure

The IDELA items were translated and contextualized by Save the Children's education and MEAL staff. RIDA worked on the tools and data collection guidelines received from SCN to further shape and develop to meet the local context. The IDELA tool was translated into local language (Maithali).

An intensive five-day training conducted jointly by Save the Children and RIDA during last week of May and first week of June. The training was aimed at building capacity of the locally hired enumerators to administer the IDELA tools by fulfilling necessary ethical requirements. The pre-testing activity carried out during the training period provided the assessors a familiarity of the tools use and inputs for tools revisions.

The data collection in Saptari started on June 7, 2016 and completed on June 22, 2016. Local enumerators/assessors hired for the data collection were regularly monitored and supervised by RIDA supervisors. Upon completion of the field activity data were entered, checked and cleaned during July, 2016 and shared with SCN. RIDA conducted analysis of the data based on the agreed analysis framework. Following is the chart highlighting major activities of the IDELA baseline study.

Chart 3: Study Procedure
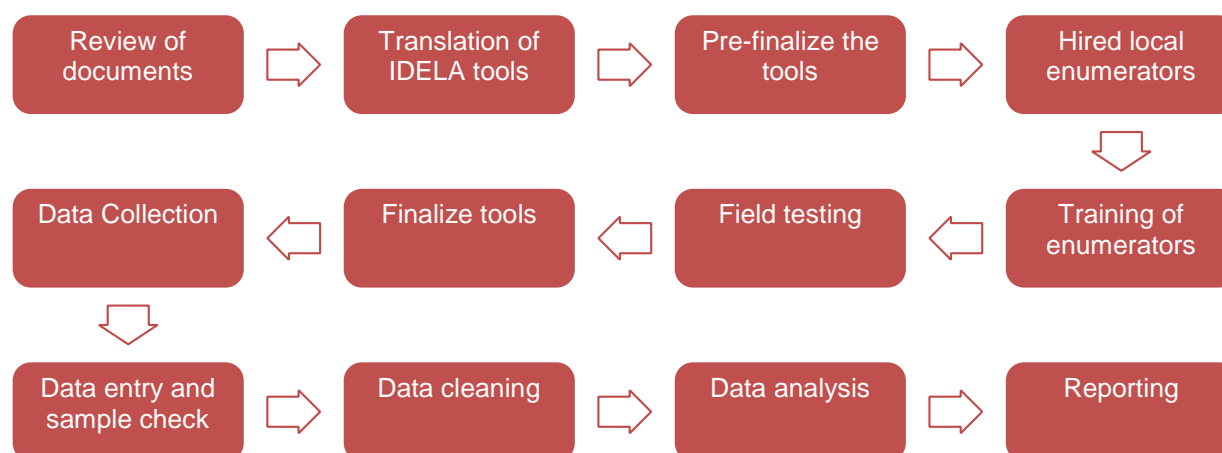
3.4 Limitations/Data collection challenges

There were some limitations during the study. It was rainy season as a result it was difficult for the supervisors and enumerators to travel and reach to centers and households, and most of the community people were heavily engaged in farming activities. Due to unavailability of some caregivers/parents of the IDELA administered children, all caregivers could not be covered in the study. Control VDCs and schools were identified mostly based on the suggestions provide by the DEO on matching the characteristics with the program implemented VDCs. Apart from these no other aspects were considered. Children were not available at the centers as per the information collected prior to the sampling due to high absenteeism.

4. Study Results

This section presents key findings from the study including details about home environment, learning environment, IDELA results, and factors associated with the IDELA results.

## 4.1 Home Environment

Family characteristics
The average age of the child was around 4 years. The proportion of girls was higher in for both treatment (52.1%) and control sites (55.0%). There was a slight difference in the age of mothers between the control and treatment groups. Mothers of treatment groups were slightly older than those of control. There were larger proportion of fathers who were literate compared to mothers. In treatment locations, 28 percent mothers were literate compared to 47 percent fathers.

Table 6. Family characteristics by intervention

	Control	Treatment	Significant difference
Child is Female (%)	55.0	52.1	
Child age (years)	4.1	4.2	
Mother age (years)	26.9	27.8	p=0.04**
Mother is literate (%)	24.7	21.7	
Father age (years)	32.7	33.4	
Father is literate (%)	58.4	46.7	p = 0.01**
Home language as Nepali (%)	0.4	0.5	

Source: IDELA Baseline Study Data, 2016

Chart 4. Education levels for parents (in %)
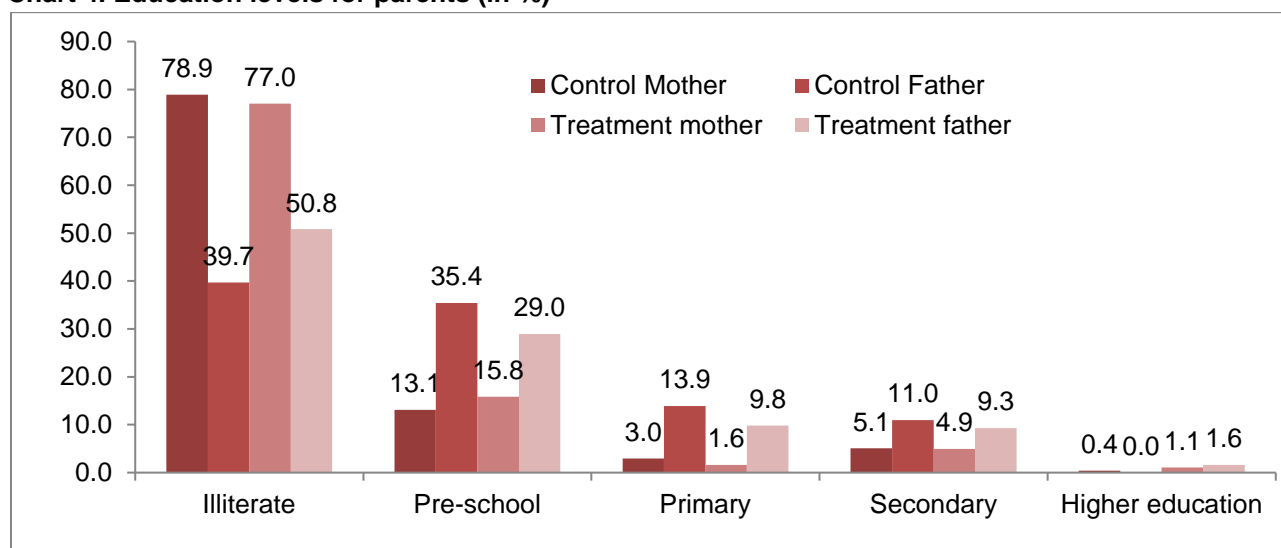
Source: IDELA Baseline Study Data, 2016

Average number children under six was found to be around 1.8 in the study areas. There was around one child in each family belonging to the age group six to 12 years and around four members over 18 years of age in both control and treatment areas.

Table 7: Family size of different age groups

	Control	Treatment	Significant Difference
Average number of household members under 6 years of age	1.83	1.85	
Average number of household members of the age group 6-12 years	1.36	1.29	
Average number of household members above the age of 17 years	4.18	4.29	

Source: IDELA Baseline Study Data, 2016

Home Learning Environments
The home learning environment includes availability of resources/tools that contribute to home learning and activities.

Learning Resources
The availability of materials among children was quite low particularly for books, magazine, and materials that are directly related to learning. The children in treatment area had lower access to all kinds of books compared to the control sites. The pattern was similar in case of toys as well. Except for the homemade toys, store-bought toys, outside objects, puzzles, and household objects the children of treatment areas were found to have higher access to toys.

Table 8: Availability of materials at home

Households having the materials	Control	Treatment	Significant difference
Storybook (%)	33.2	24.5	p = 0.05~
Textbook (%)	37.4	23.9	p = 0.003**
Magazine (%)	19.5	15.8	
Newspaper (%)	13.5	17.9	
Religious book (%)	39.0	33.1	
Coloring book (%)	15.8	15.5	
Comic book (%)	21.0	9.2	p = 0.001**
Homemade toys (%)	47.0	54.9	
Store-bought (%)	61.3	58.1	
Household objects (%)	63.0	70.6	
Outside objects (%)	44.5	44.5	
Drawing (%)	36.9	28.8	p = 0.078~
Puzzle (%)	10.0	7.0	
Hand-eye coordination (%)	12.1	5.9	p = 0.031*
Shapes (%)	19.8	13.0	p = 0.065~
Numbers (%)	32.9	14.6	p = 0.000**
Other (%)	30.2	14.6	p = 0.000**

Source: IDELA Baseline Study Data, 2016

Activity

Many children have received support from their parents. Differences were observed in control and treatment areas especially in the activities like telling stories, singing, taking child out and playing with child. Treatment area is on higher side in the activities like reading to child, telling stories to child, singing to child and control site is better in taking child out and playing with child.

Table 9. Home learning activities during the past week, by study group

% of families who are engaged in these activities with their children	Control	Treatment	Significant difference
Reads to child (%)	56.7	63.6	
Tells stories (%)	65.6	78.3	p = 0.004*
Sings (%)	60.9	69.0	p = 0.085~
Takes child out (%)	68.1	51.1	p = 0.00**
Plays with child (%)	55.8	40.2	p = 0.030*
Draws with child (%)	26.9	30.4	
Teaches new things (%)	31.5	33.2	
Teaches letters (%)	32.8	29.9	
Teaches numbers (%)	34.0	37.0	
Hug (%)	46.2	40.2	

Source: IDELA Baseline Study Data, 2016

Table 10 breaks down the household interactions by family members. In terms of mothers' interactions with their children, significant differences between control and treatment were observed on the activities like mother telling stories to child, singing songs, taking child out, and drawing with child with treatment area being on the higher side except for taking child out. Also, hitting the child was found high in treatment area as compared to control sites. More fathers of treatment were found highly engaged in teaching numbers to their children. The differences were significant in most of the activities where other people apart from child's father or mother were involved. The involvement of others in the positive activities like taking child out, playing with child, drawing with child, and also in negative activities like hugging, hitting and yelling were higher in control areas as compared to the treatment areas.

Table 10. Summary of parents'/others' involvement in activities

% of family members who are engaged in these activities with their children	Mom		Dad		Others	
	Control	Treatment	Control	Treatment	Control	Treatment
Reads to child (%)	37.4	33.7	9.2	14.1	11.0	16.9
Tells stories (%)	50.4	63.6	5.9	6.5	10.5	9.8
Sings (%)	44.5	47.1	7.6	7.1	9.7	6.0
Takes child out (%)	49.2	40.8	9.7	8.7	10.1	2.7
Plays with child (%)	32.6	30.9	7.1	4.9	11.8	4.6
Draws with child (%)	14.3	20.6	4.6	6.5	8.1	3.8
Teaches new things (%)	18.5	21.7	4.2	6.5	9.2	5.4

% of family members who are engaged in these activities with their children	Mom		Dad		Others	
	Control	**Treatment**	**Control**	**Treatment**	**Control**	**Treatment**
Teaches letters (%)	21.4	16.9	5.5	9.2	6.3	3.8
Teaches numbers (%)	21.0	19.7	6.7	12.5	8.0	4.89
Hug (%)	32.4	35.3	4.6	3.35	9.3	1.09

Source: IDELA Baseline Study Data, 2016

* The dark shaded areas indicate the figures with significant difference between treatment and control groups (p<0.10).

Protective factors

There was some difference between control and treatment groups particularly in terms of time spent with child by mother. The control groups were better than the treatment group. The average time spent by mother in control group was 4.1 hours compared to 3.2 hours for treatment. Similarly, the significant difference was found in the time spent by child to take care of child, and child kept alone. Child care of child in control was 2.5 hours compared to 1.9 hours for the treatment. Around 1.4 hours a child was kept alone in control group and same for the treatment group was 0.9 hours.

Table 11. Time spent with child by parents

	Control	Treatment	Significant difference
Mother time with child	4.1	3.2	P =.003*
Father time with child	1.6	1.7	
Child care of child	2.5	1.9	P =.000**
Child alone	1.4	0.9	P =.001**
Hug	46.2	40.2	

Source: IDELA Baseline Study Data, 2016

Negative child care practices

A number of adversities were affecting children in both the control and treatment areas. Hitting and yelling were rampant. Others (besides father and mother) hitting and yelling was significantly different in control and treatment areas. Slight significance was found in mother hitting the child with higher incidences in treatment group.

Table 12: Adversities

% of families who are engaged in these activities with their children	Control	Treatment	Significant difference
Yells	33.2	35.3	
Hits	53.4	56.0	
Mom Yells	24.0	30.4	
Mom Hits	37.4	48.4	*
Dad Yells	6.3	4.8	
Dad Hits	6.5	6.7	

% of families who are engaged in these activities with their children	Control	Treatment	Significant difference
Others Yell	4.2	0.5	**
Others Hit	6.7	1.1	***
Child Neglect score[2]	2.9	2.8	

Source: IDELA Baseline Study Data, 2016

Family support linked indexes

For simplicity of analysis, the study team created five different indexes to assess the status of learning resources, learning activities, socio-economic status, and protection as well as adversities. While there was significant difference in the learning resource index[3] between control and treatment groups the activity index[4] was almost equal for both groups. There was also no significant difference between the treatment and control group in terms of socio-economic status index[5], protective index[6], and adversity index[7].

Table 13: Difference by group in various indices

Index	Control	Treatment	
Learning Resource Index	5.6	4.8	p = 0.01**
Activity Index	1.0	1.0	
Social Economic Status	5.0	4.8	
Protective Index	3.5	3.6	
Adversity Index	9.3	9.1	

Source: IDELA Baseline Study Data, 2016

4.2 ECCD Participation

ECD experience

There were no children with ECD experience in Saptari in both control and treatment groups.

ECD attendance

There was significant difference in attendance between control (4.70) and treatment groups' children (4.85). It was higher for students in treatment groups. As reported by parents, there

---

[2] Child neglect score is calculated combining hours the child is alone, and hours the child spends with another child.

[3] The learning resource index was calculated based on the materials and resources to support learning available for the children's home.

[4] The activity index was calculated based on the activities conducted to children by father, mother, and others.

[5] The socio-economic status index was calculated by adding key socio-economic details such as availability of television, motorbike, separate rooms,

[6] Protective index is calculated of availability of clinic nearby, participation in support groups, remittance during last 3 months, adult to children ratio, prevalence of practice of hugging and hitting children, and time spent by child with mother and father.

[7] The adversity index is calculated by using variables such as occurrence of earthquake, fire, landslide, flood, living outside home, loss of job, loss of livestock, family members in prison, food security, punishment to children, and depression.

were around 86 percent children who attended school regularly (81 percent for control, and 92 percent for treatment) .

Chart 5: Student attendance pattern
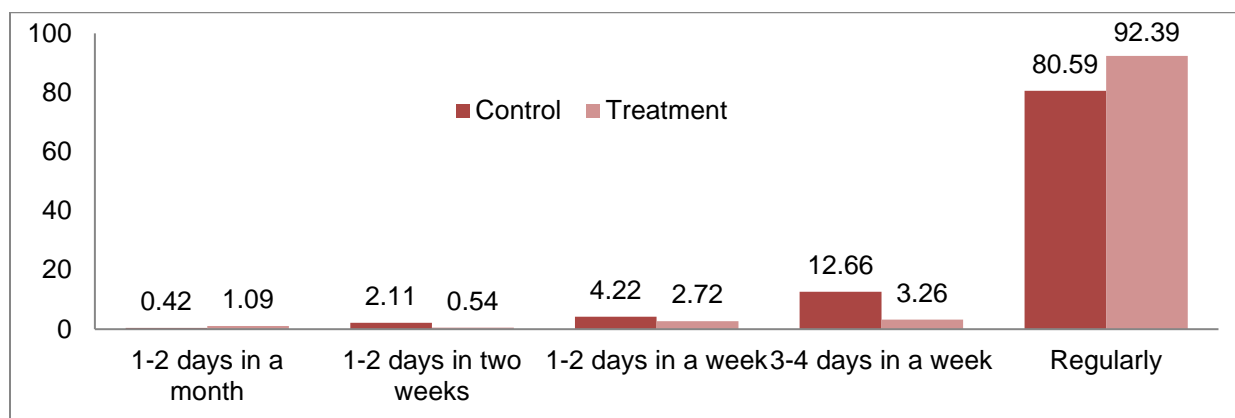
Source: IDELA Baseline Study Data, 2016

ECD facilitator (training)
All the facilitators in the ECD centers of the treatment areas were found to be trained. The difference was highly significant with around 89 percent of the trained ECD facilitators in the control VDCs.

ECD structure
More than 70 percent centers in both the groups were found to be running the classes as previous day.

Table 14. Difference between groups in ECD experience, attendance, training and structure

	Control	Treatment	Significant difference
ECCD Attendance Rate (rating)	4.70	4.85	0.02*
Proportion of children with facilitators having formal government ECCD Training (%)	89	100	0.000**
Proportion of children with ECCD classes organized in same structure as of yesterday	73.4	79.9	

Source: IDELA Baseline Study Data, 2016

4.3 Child Results

This section describes children's performance on the direct child assessment, with a focus on differences between the skills of children in the two study groups. Total domain scores are calculated by adding the weighted score of each item in the domain so that all items contribute equally to the domain score. The total IDELA score is calculated by adding the weighted score of each item and dividing by the total number of items so that all items contribute equally to the total score. Due to the new experimental nature of the items involved, neither the executive function nor the learning approaches items are included in the total IDELA score. Therefore the analyses

presented below display the proportion of IDELA questions answered correctly out of the all possible correct answers for each domain and item. Skill scores presented control for children's age, gender, home learning environment, family possessions, reading materials at home and father's literacy, and standard errors are clustered by community.

Motor skills

Scores on motor skills were low for both the groups. There is no significant difference between boys and girls and by control and treatment

Table 15. IDELA motor skills

Items & Scores	Control		Treatment	
	Boys	**Girls**	**Boys**	**Girls**
Draw a person (%)	20.9	16.5	14.7	17.3
Fold paper (%)	16.7	15.4	21.6	15.7
Total Motor Score (% Correct)	18.9	15.9	18.2	16.5

Source: IDELA Baseline Study Data, 2016 (N=422)

Emergent Numeracy

The emergent numeracy tests included seven different sub-tests to assess the basic numeracy skills among children. Overall, the children of treatment VDCs are have significantly strong numeracy skills as compared to those of control areas. Also, the difference is observed between boys and girls being boys on the higher side.

Table 16. IDELA numeracy skills

Items & Scores	Control		Treatment	
	Boys	**Girls**	**Boys**	**Girls**
Measurement (%)	79.8	70.6	75.8	83.8
Sorting (%)	28.9	20.0	36.5	38.2
Shape Identification (%)	49.2	42.4	59.9	54.7
Number Identification (%)	10.0	7.5	7.8	11.7
One-to-one correspondence (%)	35.5	31.2	48.7	48.5
Simple operations (%)	47.5	42.1	39.9	42.2
Puzzle completion (%)	16.9	15.7	33.3	34.0
Total Emergent Numeracy (% Correct)	38.4	32.9	45.9	46.2

Source: IDELA Baseline Study Data, 2016 (N=422)

Emergent Literacy

There were six sub-tests included within the emergent literacy. Within emergent literacy, analyses find that on average children in treatment area have significantly stronger emergent literacy skills than children of control ECD centers. Overall, children had the strongest skills in oral

comprehension and the weakest in letter identification. Also, the figures differ significantly between boys and girls.

Table 17. IDELA literacy skills

Items & Scores	Control		Treatment	
	Boys	Girls	Boys	Girls
Expressive vocabulary (%)	22.7	21.0	26.9	10.5
Print awareness (%)	45.3	37.4	61.9	52.4
Letter ID (%)	14.5	8.8	15.4	10.7
Phonemic awareness (%)	23.2	17.9	34.0	25.9
Writing (%)	35.2	28.0	26.8	23.9
Oral comprehension (%)	51.3	40.6	53.1	55.3
Total Emergent Literacy (% Correct)	**30.9**	**23.8**	**35.1**	**31.2**

Source: IDELA Baseline Study Data, 2016 (N=422)

Socio-emotional Skills

The social-emotional development involved five test items. Looking at socio-emotional development skills for children in this study, analyses find that on average children in the treatment areas have significantly stronger socio-emotional skills than children of the control centers. Overall, children had the strongest skills in self-awareness and the weakest in emotional awareness. There are no significant differences between boys' and girls' skills in this area.

Table 18. IDELA socio-emotional skills

Items & Scores	Control		Treatment	
	Boys	Girls	Boys	Girls
Self-awareness (%)	61.9	62.4	69.0	67.5
Social connections (%)	20.8	18.4	28.2	33.8
Emotional awareness (%)	20.6	13.7	20.7	18.7
Empathy (%)	24.3	19.9	26.5	22.5
Conflict resolution (%)	29.9	34.7	42.3	46.5
Total Socio-emotional (% Correct)	**31.6**	**30.0**	**37.5**	**38.0**

Source: IDELA Baseline Study Data, 2016 (N=422)

Executive functioning

In addition to the core domains, the child assessment also included items related to executive functioning. These items focus on how children process information as opposed to learned skills like letter or number identification, and underlie children's ability to learn new information. The executive functioning items were excluded in the calculation of aggregate IDELA score. Similar

to the other domains, children in treatment area significantly outperformed the children of control VDC. Children were better in the skills related to short term memory as compared to inhibitory control. No differences between boys and girls were found.

Table 19. IDELA executive functioning skills

Items & Scores	Control		Treatment	
	Boys	**Girls**	**Boys**	**Girls**
Short-term memory (%)	40.3	41.5	58.7	53.3
Inhibitory Control (%)	27.5	24.9	35.3	34.0
Total Executive Function (% Correct)	**33.6**	**33.3**	**45.1**	**40.9**

Source: IDELA Baseline Study Data, 2016 (N=422)

Approaches to Learning

In order to measure children's learning approaches (i.e., the way they approach complicated problems) assessors were asked to rate children on a number of dimensions immediately after the assessment was completed. Children were rated on a scale from 1=Almost never; 4=Almost always. There was no significant difference between treatment and control, and girls and boys in terms of score on approaches to learning.

Table 20. IDELA Approaches to learning skills

Items & Scores (Rating)	Control		Treatment	
	Boys	**Girls**	**Boys**	**Girls**
a) Did the child pay attention to the instructions and demonstrations throughout the assessment?	2.89	2.83	2.80	2.71
b) Did child show confidence when completing activities; did not show hesitation.	2.75	2.76	2.82	2.65
c) Did the child stay concentrated and on task during the activities and was not easily distracted?	2.68	2.61	2.77	2.68
d) Was child careful and diligent on tasks? Was child interested in accuracy?	2.76	2.69	2.83	2.82
e) Did child show pleasure in accomplishing specific tasks?	2.62	2.61	2.77	2.76
f) Was child motivated to complete tasks? Did not give up quickly and did not want to stop the task?	2.64	2.59	2.73	2.71
g) Was the child interested and curious about the tasks throughout the assessment?	2.69	2.61	2.78	2.73
Total Approaches to Learning (% Total)	66.7	63.3	67.6	66.1

Source: IDELA Baseline Study Data, 2016 (N=422)

Total IDELA

The total IDELA score was calculated by combining scores on motor skills, early literacy, early numeracy, socio-emotional development. Total baseline IDELA scores depict that children belonging to the centers of treatment areas have significantly stronger skills as compared to the children of control areas. The differences are also found in the scores between girls and boys. Boys were in the better position than the girls. This sex difference was driven primarily by emergent literacy and emergent numeracy.

Table 21. Average total IDELA scores by group and sex

Items & Scores	Control		Treatment		Significant Difference
	Boys	**Girls**	**Boys**	**Girls**	
Motor skill (%)	18.9	15.9	18.2	16.5	
Early literacy (%)	30.9	23.8	35.1	31.2	Type (0.000***) Sex (0.001***)
Early numeracy (%)	38.4	32.9	45.9	46.2	Type (0.000***) Sex (0.09~)
Socio-emotional development (%)	31.6	30.0	37.5	38.0	Type (0.001 ***)
Total Executive Function (%)	33.6	33.3	45.1	40.9	Type (0.000***)
IDELA Total (%)	**30.5**	**26.2**	**34.8**	**33.6**	**Type (0.000***) Sex (0.03**)**

Source: IDELA Baseline Study Data, 2016 (N=422)

The chart below presents difference in scores by control and treatment.
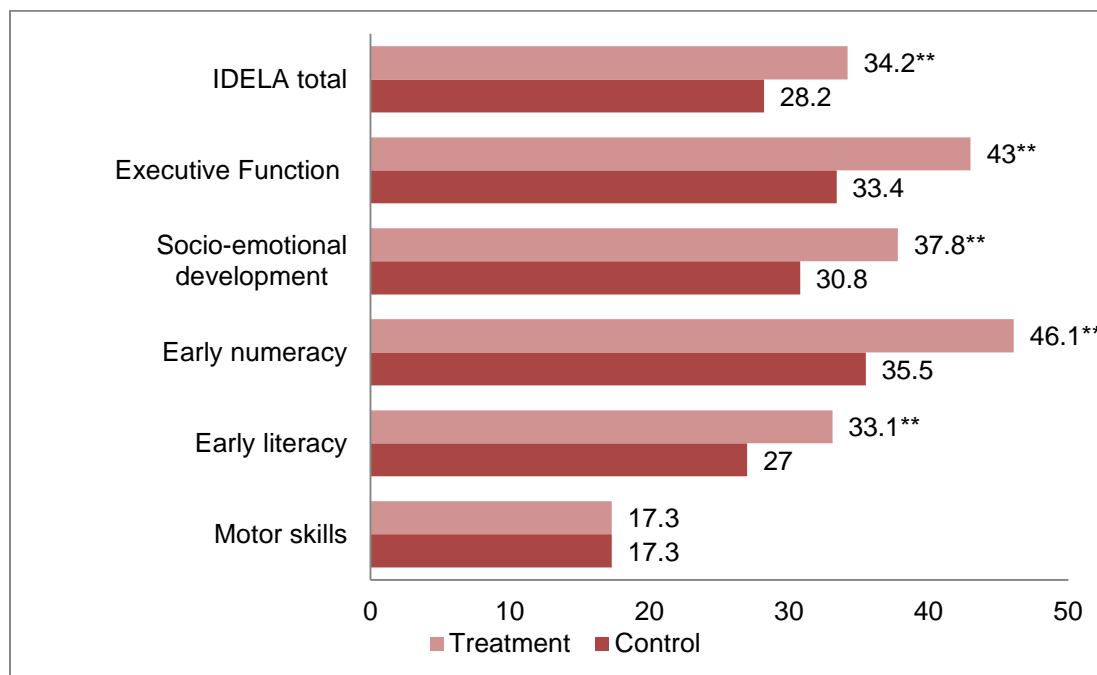
Source: IDELA Baseline Study Data, 2016 (N=422)

x4.4 Connection between home environments and children's development

This section tries to analyze possible connection between various factors (including child's characteristics, home environment, and learning environment) and children's learning and development scores. The IDELA score is compared with other factors using multivariate regression controlling for previous ECD experience, child sex, child's age, and family size.

Table 22. Connection between home environments and children's development

Factors	Is there any connection?	Influence of controlled factors	Statistical values
Home language	Children's home language doesn't predict IDELA score.	• Older children score significantly higher than younger ones • Boys score significantly (marginally) higher than girls • Children from large sized family score significantly higher	Age (b = 0.04, p = .000) Sex (b = -0.02, p = 0.096) HH size (b = 0.002, p = 0.092)
Caste/Ethnicity	Madhesi children score significantly lower than non-madhesi children,	Older children score significantly higher than younger ones	Ethnicity (b = -0.03, p = 0.08) Age (b = 0 .04, p = 0.000)
Socio Economic Status	Socio-economic status significantly predicts IDELA score	Older children score significantly higher than younger ones	SES b = 0.006, p =.03. Age b = .04, p = .000.
Resource Index	Resource Index doesn't predict IDELA score	• Older children score significantly higher than younger ones • Boys score significantly (marginally) higher than girls	Resource Index (b = 0.00, p = 0.76) Age (b = .04, p = .000) Sex (b = -0.02, p=0.09)
Activity Index	Activity Index significantly predicts IDELA score	• Older children score significantly higher than younger ones • Children from large sized family score high	Activity index (b = 0.03, p = 0.049) Age (b = 0.04, p = 0.000) Family size (b = 0.004, p = 0.08)

Factors	Is there any connection?	Influence of controlled factors	Statistical values
Parental expectations (whether they want their children to complete secondary school)	Parental expectations do not predict the IDELA score	• Older children score significantly higher than younger ones • Boys score significantly (marginally) higher than girls	Age (b = 0.05, p = .000) Sex (b = -0.026, p =0.08)
Parental education	Children of educated parents obtain high IDELA scores.	• Older children score significantly higher than younger ones	Father's education (b = 0.02, *p* = 0.004) Age (b = 0.05, *p* = 0.000. Mother's education (b = 0.02, *p* = 0.017) Age (b = 0.05, *p* = 0.000)
Protective factors (Index)	Protective factors significantly positively predict IDELA score	• Older children score significantly higher than younger ones • Boys score significantly (marginally) higher than girls	Protective factors (b = 0.02, *p* = 0.000) Age (b = 0.04, *p* = 0.001) Sex (b = 0.02, *p*=0.04)
Adversity factors (Adversity index)	Adversity factors do not predict IDELA score	• Older children score significantly higher than younger ones • Boys score significantly (marginally) higher than girls	Age (b = .049, *p* = 0.000) Sex (b = -0.26, *p*=0.76) Family size (b = 0.004, p = 0.08)

Source: IDELA Baseline Study Data, 2016

Based on the analysis table presented above, the factors that are associated with higher IDELA score are as follows:

Table 22. Factors associated with IDELA score

Factors that are positively associated (factors with p<0.05)	What that explains?
Children's age	A one year age increase in the child's age is associated with 4.0 percentage points increase in the IDELA score.

Factors that are positively associated (factors with p<0.05)	What that explains?
Activity Index	An unit increase in activity index (learning activities) for a family of a child is associated with 3 percentage points increase in IDELA score.
Protective index	An unit increase in protective index is associated with 2 percentage points increase in IDELA score.
Fathers' education	An unit (pre-primary to primary or primary to secondary or secondary to higher) increase is father's education is associated with 2 percentage points increase in the IDELA score for the child.
Mother's education	An unit (pre-primary to primary or primary to secondary or secondary to higher) increase is father's education is associated with 2 percentage points increase in the IDELA score for the child.

Source: IDELA Baseline Study Data, 2016

5. Conclusion & Recommendations

This section concludes the study by summing up the findings, and also provides some inferences for the project to utilize as a reference.

5.1 Conclusion

This is the first time that the IDELA tools have been used systematically to a sizable proportion of ECD children in Nepal. The baseline study using IDELA tools conducted in Saptari district clearly indicates that the existing level of child learning and development is low. The girls have lower level of learning and development compared to boys as indicated by significant difference in their IDELA score, especially in emergent literacy and emergent numeracy. The IDELA score for project ECD centers is significantly higher than control ECD centers. It is possibly due to the fact that the project was already under implementation for the past year.

The availability of learning resources was low for children while their participation in activity was quiet high. However, the activities were mostly led by mothers with very limited participation of father and other family members. There are some factors with significant associations to IDELA score. The availability of learning activities and protective factors together with parental education contributed to the score. Save the Children Nepal has an opportunity to synthesize and utilize the findings from this study to inform the project design and project implementation strategies.

5.2 Recommendations

RIDA recommends Save the Children and its partners to review the study findings, and have detailed discussions and brainstorming to generate possible inferences for the project. Nevertheless, the study team has identified some inferences as follows:

- **Focus on the test with low score**
  While IDELA scores are mostly low on almost all tests, the scores are particularly low for motor skills, and for some particular tests such as identification of letters, identification of numbers, and phonic awareness. The project is advised to focus on the skills with low scores.

- **Focus on learning activities**
  Support family members especially father and other family members to increase number of learning activities for children. The learning activities needs to be better organized and better targeted.

- **Promote activity with father, and other family members**
  Since activities conducted by father and other family members had more effect on children's learning, there is a need to encourage them to spend more time with children with learning activities.

- **Focus on girls**

Since the IDELA scores are low for girls, in ECD centers and also at home, there is a need to focus on having adequate learning activities for girls.

- **Increase protective factors**
  As the IDELA scores show increasing trend with the protective index priority should be given on increase of protective factors like family members' time to the child, care and affection.

References

CBS (Central Bureau of Statistics). (2007*). Nepal Living Standards Survey 2006/07, Statistical Report.* Kathmandu: Central Bureau of Statistics

DOE (Department of Education). (2014). *School Education Statistics Flash - I Report.* Kathmandu: DOE.

MOE (Ministry of Education).(2009). *School Sector Reform Plan 2009- 2015.* Kathmandu: Ministry of Education.

MOE (Ministry of Education). (2013). *ICT in Education Master Plan 2013-2017.* Kathmandu: Ministry of Education, Government of Nepal

MOF (Ministry of Finance). (2015). *Budget Speech FY 2015/16.* Kathmandu: Ministry of Finance

Save the Children. (2016*). International Development and Early Learning: Adaptation and Administration Guide.* Save the Children.

Save the Children. (2015). *Afghanistan ECCD Study.* Kabul: Save the Children Afghanistan.

Annex 1: List of schools covered

ECD Center	VDC	School Type
1. Laxmi Bal Bikash Centre ECD	Bishnupur	Control
2. Hanuman ECD	Sarswoti	Control
3. Shree Janata LSS ECD	Deurivaruwa	Control
4. Rastriya PS	Sukarpura	Control
5. Shreepur Janata LSS	Kusha Shreepur	Control
6. Janta PS	Boriya	Control
7. Dalit SS	Lakharon	Control
8. Rudra Narayan SS	Gorgama	Control
9. Rastriya PS Sukarpura	Sukarpura	Control
10. Parbati ECD	Sakharpura	Control
11. Shree Rastriya PS	Bhushi Maholiya	Control
12. Shree Sarda LSS	Jamuni	Control
13. Shree L.S Deuri Bharuwa EDCC	Bharuwa	Control
14. Shree Mahakabi Devkota ECCD	Rajbiraj	Control
15. Kopila Balbikash Center	Bishnupur	Control
16. Rastriya PS Haripur	Kusha	Control
17. Hariharnath Balbikash Kendra	Haripur	Control
18. Shree Rastriya PS Haripur	Haripur	Control
19. Shree Chhinamasta ECD Center	Chinamasta	Control
20. Shree Mahabir H S	Hanuman Nagar	Control
21. Rastriya PS Banaula Ranjitpur	Banaula	Treatment
22. Shree Dalit Balbikash Center	Manaraja	Treatment
23. Shree Pacha Mahendra Chuni ECCD	Manraja	Treatment
24. Ram Dayal H.S.S	Kachanda	Treatment
25. Kalyankari Bal Bikash Kendra	Brahampur	Treatment
26. Shree Janata LSS ECD Center	Tarahi	Treatment
27. Shree Janta H.S.S	Malekpur	Treatment
28. Shree Bhuwandas ECD Center	Theliya	Treatment
29. Shree SS	Kabilasa	Treatment
30. Rastriya PS Hanuman Nagar	Hanuman Nagar	Treatment

ECD Center	VDC	School Type
31. Gyan Jyoti ECD Center	Kanchanpur	Treatment
32. Shree Rastriya LSS	Jagatpur	Treatment
33. Shree Dinavadri ECCD	Manraja	Treatment
34. Namuna Janodaya ECCD	Janadol	Treatment
35. Shree Rastriya PS Kabilasa	Kabilasa	Treatment
36. Shree Samudayak Rastiya PS	Manraja	Treatment
37. Shree Rastriya PS Jagatpur	Jagatpur	Treatment
38. Shree Ra Pra Bi Jagatpur	Jagatpur	Treatment

Annex 2: List of field team

S.N	Name	Sex
1.	Navin Badal (Supervisor)	Male
2.	Binisha Shiwakoti (Supervisor)	Female
3.	Dev Naryan Sah	Male
4.	Rebendra Sah	Male
5.	Hareram Kumar Yadav	Male
6.	Ranju Kumari Sah	Female
7.	Ram Babu Das	Male
8.	Nisu Kumari Chaudhari	Female
9.	Sushma Yadav	Female
10.	Sunita Yadav	Female
11.	Sanjiv Kumar Yadav	Male