



## INTERNATIONAL DEVELOPMENT AND EARLY LEARNING ASSESSMENT (IDELA)

## **BASELINE STUDY REPORT, BINGA - ZIMBABWE**



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# List of Acronyms

DEO	Department of Education
ECCD	Early Childhood Education and Development
ELM	Early Literacy and Math
IDELA	International Development and Early Learning Assessment
MoPSE	Ministry of Primary and Secondary Education
SV	Save the Children

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### **Executive Summary**

The JF Kapnek Trust is implementing a project aimed at enhancing the quality of Early Childhood Care and Development in Binga District in partnership Save the Children Zimbabwe. This project involves the piloting of Early Literacy and Math (ELM) model in 20 impact schools in Binga district of Zimbabwe. A baseline survey was conducted using the International Development and Early Learning Assessment (IDELA) tool to assess the pre-project conditions for the children enrolled under the ELM domains. A quasi-experimental study design was adopted with all 20 intervention ECD centres being selected and corresponding 20 control schools matched for the baseline assessment. A random sampling methodology was used to select children at each centre form a predetermined estimated sample size of 394. The results of the study showed that Children in impact centres have stronger skills than children in control ECCD centres however there is no statistically significant difference between the two at baseline. In gross motor skills, children in impact schools had greater skills in coping a shape (62%) as compared to control centres (42%) whilst no statistically significant difference was observed under the Numeracy domain. Children in impact centres however demonstrated increased skills in shape identification (44%) than in control centres (31%). Children in intervention centres had higher scores in Literacy than in control groups demonstrating a statistically significant difference in print awareness (29% compared to 17%). There was no observed differences in socio-emotional development and executive function between the intervention and control groups. Significant differences were however observed under the approaches to learning, with the intervention centres demonstrating better approaches to learning (71%) compared to the control groups (62%). The results also showed that there are no significant differences between boys and girls in both control and intervention centres.

## **1.0 Introduction**

### 1.1 Background

Save the Children is implementing a project aimed at enhancing the quality of Early Childhood Care and Development in Binga District of Zimbabwe in partnership with The J F Kapnek Trust. The project involves the piloting of model which emphasis Early Literacy and Math (ELM) in 20 impact schools in Binga district. A baseline survey was conducted using the International Development and Early Learning Assessment (IDELA) tool to assess the pre-project conditions for the children enrolled at the 20 intervention and 20 control schools. The assessment will measure the children's early learning, school readiness and development and provide evidence of the effectiveness of the ELM strategy in improving results for ECD level children.

### **1.2 Context**

Early Childhood Development (ECD) Zimbabwe made enrolment in Early Childhood Development (ECD) centres government policy in 2004. Over the last few years, there has been a steady increase in the ECD enrolment. In 2005, the Zimbabwean government introduced a policy (Statutory Instrument No. 106 of 2005) mandating all government primary schools to introduce two years of ECD education before entry into primary school. In line with the Commission of Inquiry into Education and Training's (CIET, 1999) main recommendation to democratize pre-school education, the Ministry of Primary and Secondary Education (MoPSE) designed a two-phased, ten-year programme to establish ECD classes at every primary school in the country. During Phase One (2005/6 to 2010), every primary school was expected to attach at least one ECD class of 4-5 year olds, referred to as ECD 'B', to prepare them for Grade One the following year. In Phase Two (2011 to 2015), every primary school would attach another ECD class of 3-4 year olds to prepare them for ECD B.

Zimbabwe has made great strides to achieve Universal Primary Education. Over the years, more and more marginalised children are getting access to basic education. However, there is very limited knowledge about the existing status of children's learning and development within ECD centres in Zimbabwe. Save the Children (SC) in partnership with JF Kapnek Trust and is implementing the ECD program in Binga District of Zimbabwe. The project involves the piloting of model which emphasis Early Literacy and Math (ELM) in 20 impact schools in Binga district. A tool commonly known as International Development and Early Learning Assessment (IDELA) was developed by SV and this tool is used to measure ECCD children's developmental outcomes. This tool will be used to form 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 is a direct child assessment which is intended to improve programs, policy and practice and inspire investments. It comprises of six domains focused on gross and fine motors skills, emergent literacy, emergent numeracy, socio-emotional development, executive control and approaches to learning. Figure 1 below shows the core IDELA items which will be included in this study.



Figure 1: Core IDELA Items

### 1.3 Study Objectives

The baseline was done to facilitate the systematic monitoring and evaluation of the project by establishing the pre-ELM intervention conditions against which future changes amongst the target group can be evaluated.

## **1.4 Key Research Questions**

The key questions of the study were as follows;

- What can the baseline tell us about children's emergent learning and development skills? What does this mean for programming?
- 2. How comparable are children in impact (intervention) ECCD centres versus control centres in terms of learning and development skills based on ELM criteria?
- 3. What is the background home learning environment? What does this mean for effectively targeting our learning and development program?

## 2.0 Study Design & Methodology

### 2.1 Baseline Design

This is a quasi-experimental study which was used for the baseline study forming a 'control' group for assessment of 'counterfactual'. Even though 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 is currently undergoing were selected purposively (without any form of random assignment) based on their proximity to the intervention centres. Thus half of the centres surveyed were assigned to intervention (impact schools) and half to the comparison group.

The design used is double differences whereby new enrolled children in ECD 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 'control' as well as 'counterfactual' 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. The figure below depicts the design





### 2.2 Methodology

This section outlines sampling methods, size, data collection and analysis methods to be used in the study. The baseline was based on the IDELA test including children with disability.

### 2.2.1 Sampling methods

All the (20) intervention centres were included in the study and a corresponding 20 comparisons schools were purposefully selected based on their proximity to the intervention centres. This was essential to ensure that the study and the control groups depict almost the same characteristics except the interventions. At each of the centres were data was collected, 10 children were randomly selected

from the ECD A class. At 3 of the centres, the children were not adding up to 10 and all of them were selected. The method also involved convenience sampling to select caregivers.

### 2.2.2 Sample size

Based on a population estimate of 3484, a confidence level of 95% and 5% confidence interval, a sample size of 340 was required. The final sample for this study was 364 children attending ECCD centres below the age of 6, divided between 20 ECCD centres set to receive the ELM Intervention and 20 in the comparison group. Control ECD centres were identified through consultation with the MoPSE district schools inspector (DSI), School Development Committees (SDCs) and caregivers. A total of 138 caregivers were interviewed from the intervention and comparison communities and these were equally shared.

### 2.2.3 Data collection methods and Instruments



The data collection started with assessor training and pilot at a school not in the intervention and control. During the pilot, assessors worked through all the data collection tools, including the parent/principal consent and child assent. A session on ethics was included in the training of assessors and team leaders were chosen from the trained assessors. An interview method was used for both the children and the caregivers by trained enumerators. In the case of children, assessors worked in pairs and individually with caregivers. IDELA child assessment tool was used

with the children whilst the caregiver questionnaire was administered to the caregivers.

### 2.3.4 Data entry and analysis

Data was collected manually and entered into IDELA Kobo collect mobile application files. Files were then exported to Excel and SPSS for analysis. Analysis was done using MS Excel IDELA templates and SPSSv23 to compute summary of variables. Data analysis includes the comparability of children in the Intervention and comparison samples through the comparison of means through t-tests with clustered standard errors to account for the grouping of student-level data within schools.

### 2.3 Study Procedure

The IDELA issues were explained and contextualized by JF Kapnek M&E department. Intensive 3 day training was conducted by JF Kapnek during the last week of June and it aimed at capacitating 12 enumerators on IDELA data collection methodology resulting in and delivering a comprehensive question by question analysis of the child and caregiver data collection tools. The training also provided an opportunity to conduct a pre-data collection exercise as part of on-job training. The data collection in Binga lasted for 10 working days. The trained local enumerators were then grouped into 4 teams to cover the IDELA data collection in and each team had a team leader for 4 each group. Figure 3 below shows the study procedure followed throughout the study.



#### Figure 3: Study procedure followed

### **2.4 Limitations**

There were a number of limitations during the study. There were sensitisation/logistical challenges due to poor network – one of the schools stalled the data collection process requesting authorisation letter from the DSI despite the presence of MoPSE, another school was chosen instead for the day's deliberations to occur. The targeted children were not all reached due to bad weather (cold) which resulted in non-attendance of the ECD children at some of the schools. For example only 5 children were present at the day of the visit in a class of 19 children. Also the 2 targeted schools had cluster sporting activities so ECD could not attend on that particular day which also affected the sample size. The other limitation factor is at 3 of the centres, the children were not adding up to 10 thus all of them were selected to participate.

## 3.0 Study Results

This section presents key findings from the study thereby showing IDELA results and factors associated with the IDELA results.

### 3.1 Characteristics of Children sampled

In total assessments were completed for 363 children and it composed of 188 (52%) girls and 175 (48%) boys shown in figure 4.



Figure 4: Gender characteristic of sampled children

The target for each school was to assess 20 children, however some centres did not have children adding up to 20 in the target class and in some centres attendance was low at the day of assessment. The study revealed that are more girls attending the ECCD centres. The average age of the child in the project schools is 4 years 7 months and further analysis shows that there no significant age difference between children in control group and children in treatment group as they have an average of 4 years 5 months and 4 years 7 months respectively.

### 3.2 Sample by gender and ECCD type

The design was to have equal sample sizes for the control and intervention groups. However, more children from the intervention group were assessed than the control group. It was observed that intervention centres had higher enrolments and attendance was also higher. Table 1 show that ELM centres had 54% whilst standard ECCD had 46%.

	Standard ECCD	ELM Centres
Average Age	4.5	4.6
Male	77	98
Female	85	103
Total	162 (46%)	201 (54%)

Source: IDELA Baseline Study data, 2018

### **3.3 IDELA Domains**

This section will describe 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. The total 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. The table below shows the domains that were analysed.

Gross and Fine Motor Development	Emergent Numeracy	Emergent Literacy and Language	Social emotional Development	Executive Functioning
Hopping on one foot	Measurement	Print Awareness	Self-awareness	Short-term Memory
Drawing a Person	Sorting	Letter ID	Social connections	Inhibitory controls
Folding	Shape ID	Expressive Vocabulary	Emotional awareness	
Copying a shape	Number ID	Oral Comprehension	Empathy	
	One-to-one correspondence	Phonemic Awareness	Conflict resolution	
	Simple operations	Writing		
	Puzzle			

#### Table 2: IDELA Domains analysed

#### **3.3.1 Gross and Fine Motor Development**

Generally, motor scores were on the higher side except in task of drawing a person and folding a paper. For ELM ECCD centres, the motor score was higher with 61% as compared to 53% of Standard ECCD. Children had better score in hoping on one foot and copying a shape. There was a significant difference in score related to motor skills for ELM ECCD centres and Standard ECCD centres.

#### Table 3: IDELA motor skills

	Standard ECCD	ELM ECCD Centre	Significant Difference	Average Total
Hopping on one foot	81%	83%		82%
Drawing a person	46%	50%		48%
Folding	44%	51%	*	48%
Copying a shape	42%	62%	***	53%
Total Motor Development	53%	61%	***	58%

Source: IDELA Baseline Study Data, 2018 (363 observations)

\*p<0.05 \*\*p<0.01 \*\*\*p<0.001

#### **3.3.2 Emergent Numeracy**

There were seven sub-tests contained within the emergent numeracy skills. Generally the scores on emergent numeracy were also remained on lower side except measurement sub-test. Figure 5 shows that children scored highest on measurement (84%) and lowest on puzzle (8%). There was no significant difference between Standard ECCD and ELM ECCD centre.



Figure 5: IDELA Literacy and language skills

### 3.3.3 Emergent Literacy and Language

There were six sub-tests included within the emergent literacy with the scores generally on the lower side. There was significant difference between Standard ECCD and ELM ECCD in emergent literacy score that is 23% and 27% respectively. The children scored highest marks in oral comprehension and lowest marks in letter ID.

	Standard ECCD	ELM ECCD Centre	Significant Difference	Average Total
Print Awareness	17%	29%	***	23%
Letter ID	1%	1%		1%
Expressive Vocabulary	34%	38%		36%
Oral Comprehension	41%	44%		43%
Phonemic Awareness	8%	9%		8%
Writing	38%	44%		41%
Total early Literacy	23%	27%	***	25%

Table 4: IDELA literacy skills

Source: IDELA Baseline Study Data, 2018 (363 observations)

\*p<0.05 \*\*p<0.01 \*\*\*p<0.001

#### 3.3.4 Socio- Emotional Development

The social emotional development domain comprised of five sub- tests. Data in figure 6 shows that on average children scored highest on self-awareness (54%) and lowest on empathy (15%). There was no significant difference in scores on socio-emotional development by ECCD type that is between Comparison ECCD and ELM ECCD centre.



Figure 6: IDELA Socio- Emotional skills

#### **3.3.5 Executive Function**

The child assessment also included the items related to the executive function. These items draw emphases 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 test included sub-tests on short-term memory, and inhibitory control. Table 5 shows that students scored higher on short term memory (53%) and lower on inhibitory control (28%). There was no significant difference in executive functioning score by ECCD type (Standard ECCD and ELM ECCD) and gender (girls and boys).

	Standard ECCD	ELM ECCD Centre	Significant Difference	Total
Short-term memory	50%	55%		53%
Inhibitory controls	25%	30%		28%
Total Executive Function	38%	43%		40%

#### Table 5: IDELA executive functioning skills by group

#### 3.3.6 Approaches to learning

As a method to measure children's learning approaches, assessors were asked to rate children on a number of dimensions immediately after the assessment was completed. The approaches to learning were excluded calculation of aggregate IDELA score. The children had generally a score slightly a higher than half that is 67%. There was significant difference between Standard ECCD and ELM ECCD in terms of approaches to learning.

	Standard ECCD	ELM ECCD Centre	Significant Difference	Total
Persistence during assessment	64%	71%		68%
Observation post assessment	60%	70%		65%
Total Approaches to Learning	62%	71%	***	67%

#### Table 6 IDELA Approaches to learning skills

\*p<0.05 \*\*p<0.01 \*\*\*p<0.001

#### **3.3.7 IDELA Scores by ECCD type**

The total IDELA score was calculated by combining scores on motor skills, early literacy, early numeracy, socio-emotional development, and executive function. The learning approaches score were not included in the total IDELA score since it was based on the assessor observation. The total IDELA score was on a lower side (36%). The aggregate IDELA score for control ECCD centre was 34% whilst for intervention it was 38%. There was no significant difference by ECCD type (control and treatment). Generally, intervention centres had better IDELA score than control group.





### 3.3.7 IDELA Scores by Gender

The girls in ECCD centres had generally better IDELA score compared to boys that is 47% and 45% respectively. Further analysis in the sub-skills shows that boys only had better score (31%) than girls (28%) on socio-emotional. There was no significant difference between on IDELA score by gender (boys and girls).



Figure 8: IDELA scores by gender

## 4.0 Conclusion & Recommendations

### **4.1 Conclusion**

The baseline study using the IDELA tool indicated that the existing level of child learning and development is poor especially on the literacy skill. The IDELA score for the children is 36%. Overall, children's skills are weakest in the area of literacy (26%), followed by social-emotional development (30%) and numeracy (32%). Children in ELM (Impact) centres have stronger skills than children in control ECCD centres however there is no statistically significant difference between the two and also there is no significant difference with regards to gender.

### 4.2 Recommendations

The study recommends the following based on the conclusion;

- Repeat analysis at endline to test whether there is differential learning between boys and girls over the two years.
- Concentrate on the skills with low scores that is literacy, socio-emotional development and numeracy.

Focus on learning gains in these areas at endline to see where both ELM and standard ECCD programs have strengths and weaknesses in supporting children's learning.