

Democratic Socialist Republic of Sri Lanka

**Preparatory survey on BOP business to
improve children's educational
achievement by e-Learning
in Sri Lanka**

Final Report (Summary)

September, 2016

Japan International Cooperation Agency (JICA)

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1 The Study's Background, Objectives, and Alignment with the Local Development Issues

1.1 Background

The project titled “Preparatory Survey on BOP Business on Strengthening of Children’s Mathematical Ability through After-School Tutoring” implemented from July 2012 to June 2013 in Surabaya, Indonesia proved that the OGO Method, a teaching method designed by Mr. Ogo which has shown clear evidence to improve children’s mathematics understanding and ability in Japan, can make significant improvement of children’s mathematics ability. However, it is not easy to train the Ogo Method to thousands of teachers. If e-learning for the Ogo Method is developed, the promotion of this method is scalable and it can reach many students. Therefore, the development of the e-learning contents of the Ogo Method can contribute to strengthening the mathematics skills of the children in Sri-Lanka, which has been the long-standing issue in Sri-Lanka in an effective way in relatively a short-term.

Surala Net is an e-learning provider with the new concept of student-centered interactive animation teaching materials, by which children can enjoy studying at their own learning speed while maintaining their concentration high. Many schools and Jukus (Private after-school tuition classes) in Japan implemented Surala’s e-learning method and achieved remarkable academic improvements.

The feature of Surala’s Juku business model is to provide not only e-learning related services but also comprehensive business consultation services including Juku location, student recruitment, Juku operation, and so on. The students learn subjects with e-learning animation characters. Therefore, teaching or JUKU management experiences are not required for the JUKU owners to start new Juku with Surala’s e-learning contents. 190 Juku owners have successfully made start-up of Jukus in Japan so far.

1.2 Objectives

The Surala type e-learning for Ogo Method is introduced and used by students in pilot Jukus. The academic achievement of pilot students is examined in comparison with control schools. In addition, the feasibility to operate Surala’s e-learning Jukus in Sri Lanka is examined. Based on these results, the business model is developed for the e-learning Jukus targeting children in the BOP society.

1.3 Alignment with the local development issues

According to the Household Income and Expenditure Survey in Sri Lanka 2012/2013¹, 30% of households are living below Rs 21,286/month (Or Yen 15,711/month) and 20% of households are living below Rs 16,531/month (Or Yen 12,202/month), which is quite low compared to the average household income Rs 45.878/month (or Yen 33,862/month). It is also clear that the correlation between poverty and education levels exists. According to Sri Lanka Poverty Review 2009/2010², the ratios to apply the O-Level examination were 9.1% for families at the poverty-level and 33.3% for those at non-poverty level.

2 Study Area

The study area is the inhabited area for the BOP people in Colombo City and its suburbs.

3 Method, Target and Period of the Study

3.1 Study Method

The study method is described as below:

1) Market survey

The interview survey was conducted to parents living in the inhabited areas for the BOP people. The questions include household income, children going to after-school tuition classes (or Juku in Japanese) and monthly tuition fee, by which the market size was estimated. In addition, the interview survey to Jukus was conducted to analyze Juku business conditions and the market size.

2) Pilot activities

As for Batch 1, both Women's Bank and FHP (The Foundation for Health Promotion) opened a Juku. As for Batch 2, Women's Bank opened two Jukus. Women's bank is a micro financing organization for BOP people and has 171 branches and 730,000 members in the island. FHP is an organization with the mission to upgrade children's education level through health promotion for parents, having financial assistance from Ministry of Health, UNICEF and bilateral governmental development agencies.

The roles and responsibilities of Women's Bank and FHP were to decide Juku locations,

¹ Table 2.4 Household Income and Expenditure Survey 2012/13

² Table 05 Sri Lanka Poverty Review: A Study on Household Income and Expenditure Survey – 2009/2010

find classrooms and interior works, purchase and install facilities and equipment, pay facilitator's salary, dispatch facilitators for training, hold awareness campaigns, arrange parents meetings, recruit students, and manage Juku operations.

3) Development of Business Model and Plan

Based on the results, know-how and lessons learnt obtained through the pilot activities, the business model and plan including business strategies, business schemes, target areas, target BOP people, target grades, tuition fees, human resource developments, financial sources and financial estimation were developed.

3.2 Study Target

The pilot activities targeted children from pre-school to Grade 4, who attended 45 minutes e-learning classes twice a week.

3.3 Study Period

The study period is shown as below:

Overall project period: September 2014 to September 2016

Batch 1 pilot period: May 2015 to August 2016

Batch 2 pilot period: September 2015 to August 2016

As of September 2016, those pilot activities have been conducting as a business basis.

4 Results of the Endline Survey

In order to understand the current situation of mathematics abilities at elementary schools, the Baseline Surveys were conducted in May, August and September 2015. The May Survey was conducted at two pilot tuition classes or Jukus located in Colombo area and two control schools, which are located 100 km north from Colombo and therefore there should be no influence from the pilot activities. The August Survey was conducted at the same pilot Jukus as the May Survey, but only for new students who attended Jukus after the May Survey. The September Survey was conducted at the newly opened two pilot Jukus in Colombo.

At the end of the Project, the Endline Survey was conducted at the same Jukus and control

schools in June 2016. The impacts by the Project activities were examined in comparison of the improvements of mathematics achievements between the pilot Jukus and control schools.

The result summaries are shown in Table 1, 2, and 3 for Grade 2, 3 and 4, respectively. The findings are listed below:

- The average increment marks of the pilot students from Baseline to Endline Survey are higher than the control schools in most cases except AAT and multiplication of Grade 4. (Only a few pilot students have started studying multiplication.)
- The addition's average mark by pilot students of Grade 3 was 71.7, which indicated a significant increase, as shown in Table 4.
- The addition's average mark by pilot students of Grade 4 was 87.7, which indicated a significant increase, as shown in Table 5.

Table 1 Result Summary of Grade 2

	Sample No	Average marks		
		AAT (%)		
		Baseline	Endline	End-Base
Pilot	17	39%	76%	37%
Control	125	37%	67%	30%
Difference		2%	9%	7%

Table 2 Result Summary of Grade 3

	Sample No	Average marks								
		AAT (%)			Addition			Subtraction		
		Baseline	Endline	End-Base	Baseline	Endline	End-Base	Baseline	Endline	End-Base
Pilot	19	18.9%	48.4%	29.5%	34.6	71.7	37.2	9.2	28.7	19.5
Control	152	10.8%	25.7%	14.9%	14.8	42.2	27.4	5.6	14.5	8.9
Difference		8.1%	22.7%	14.6%	19.8	29.5	9.8	3.5	14.1	10.6

Table 3 Result Summary of Grade 4

	Sample No	Average marks											
		AAT (%)			Addition			Subtraction			Multiplication		
		Baseline	Endline	End-Base	Baseline	Endline	End-Base	Baseline	Endline	End-Base	Baseline	Endline	End-Base
Pilot	17	14.0%	34.0%	20.0%	52.5	87.7	35.2	30.9	54.7	23.8	26.7	52.6	25.9
Control	116	9.4%	26.2%	26.2%	42.1	63.6	21.5	15.6	36.8	21.2	14.0	41.9	27.9
Difference		4.6%	7.8%	-6.2%	10.4	24.1	13.7	15.2	17.9	2.7	12.7	10.7	-2.0

The improvements of academic achievements in individual pilot students of Grade 4 are shown in Figure 1. Some students marked nearly 100 and all students showed remarkable improvements of their calculation skills of addition.

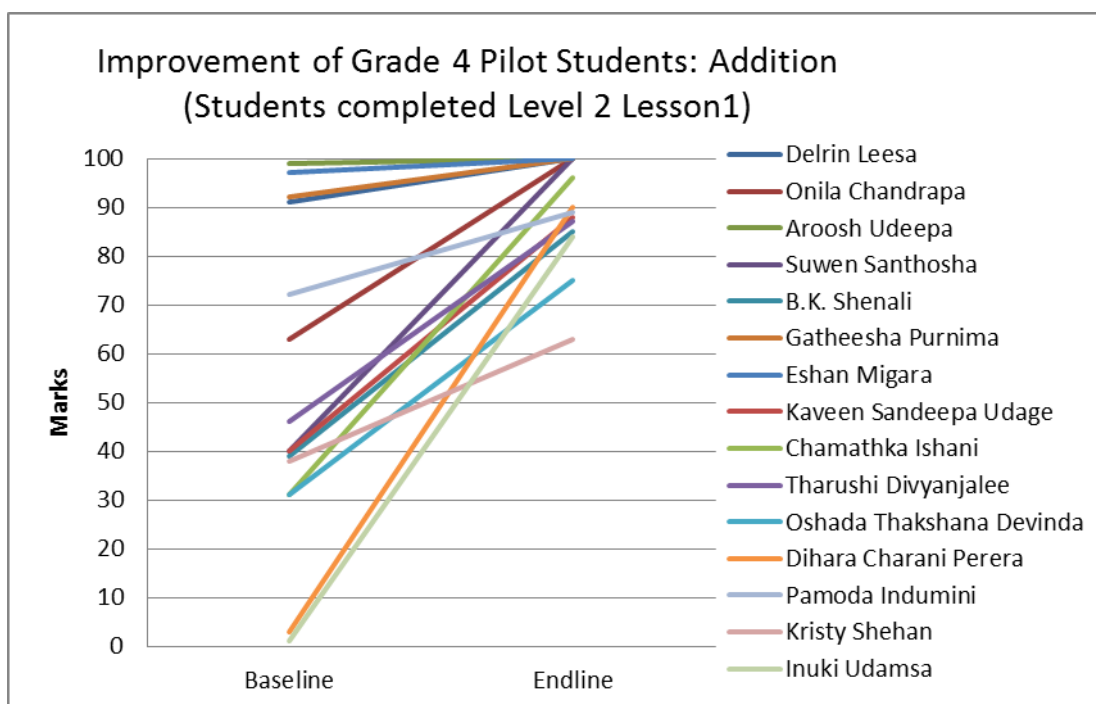


Figure 1 Improvements of Students' Marks: Grade 4 - Addition

The t-Test was applied to examine whether the statistically-significant differences were observed between the increment marks of the pilot and the control students from the baseline to the endline survey. The results are shown in Table 4 with the following findings:

- The statistically-significant differences are observed for addition of Grade 3 and 4. This is because the pilot students studied mostly the addition part for the pilot periods.
- The strong statistically-significant differences are observed for AAT and subtraction of Grade 3. The practice of addition by e-learning may affect these results.
- No statistically-significant differences are observed for AAT of Grade 2 and for AAT, subtraction and multiplication of Grade 4. The students need more time to study subtraction and multiplication to have statistically-significant difference.

Table 4 t-Test Analysis

	G2									
	AAT									
	Pilot	Control								
Sample No	16	124								
Average increment marks	36.8%	30.1%								
P(T<=t) Both sides	0.19486									
Statistical significant difference	ns									

	G3					
	AAT		Addition		Subtraction	
	Pilot	Control	Pilot	Control	Pilot	Control
Sample No	19	152	19	152	19	152
Average increment marks	29.5%	14.9%	37.2	27.4	19.5	8.9
P(T<=t) Both sides	0.00145		0.03909		0.00003	
Statistical significant difference	**		*		**	

	G4							
	AAT		Addition		Subtraction		Multiplication	
	Pilot	Control	Pilot	Control	Pilot	Control	Pilot	Control
Sample No	16	115	16	115	16	115	16	115
Average increment marks	19.7%	16.5%	36.8	21.3	23.4	20.8	25.8	27.6
P(T<=t) Both sides	0.31760		0.01472		0.62404		0.75521	
Statistical significant difference	ns		*		ns		ns	

Note) P(T<=t) Both sides:	ns	More than 0.1	Statistically no significant difference observed
	+	Less than 0.1 and more than 0.05	Statistically some significant difference observed
	*	Less than 0.05 and more than 0.01	Statistically significant difference observed
	**	Less than 0.01	Statistically strong significant difference observed

The findings can be summarized as follows:

- 1 The pilot students increased their marks of addition, which implies that Surala's e-learning is effective. However, they did not increase their marks of subtraction so much. This is because most of the pilot students are still studying the addition part.
- 2 As for the average marks of addition at the endline survey, Grade 3 students marked over 70 and Grade 4 students marked nearly 90, which can be considered as a remarkable progress by e-learning.
- 3 It is observed that the pilot students who have completed 300 units show the good achievements in addition, as they have acquired a full of calculation skills by the composition and decomposition method.
- 4 The t-Test proved that the statistically-significant differences were observed between the increment marks in addition of the pilot and the control students on Grade 3 and 4 from the baseline to the endline survey. This evidences the effectiveness of Surala's e-learning.

5 Decision for Business Start-up

Surala Net Co., Ltd made a decision to start-up the e-learning business in Sri Lanka. In this regard, a new company called Next Learners (PVT) LTD was registered on 31 August, 2016, which was established by D&O International (PVT) LTD, the company owned by the partner of one of this project team members. Next Learners will start collection of ID fee from Jukus of Women's Bank and FHP from September, 2016 onward.

6 Decision Factors for Business Start-up

All 4 pilot Jukus had excess applicants compared to capacities of 60 students each at the first parent briefing sessions. After 4-day facilitator's training, all pilot Jukus could start Juku without major problems. Although there were some students left Jukus for various reasons, the total of 11 Jukus are currently operating and the total number of students has been increasing. The contracts with Women's Bank and FHP have already been signed. Taking these favorable business circumstances, Surala Net made a decision to start-up their e-learning business in Sri Lanka.

The monthly numbers of students in each Juku were shown in Table 5. These numbers have

been fluctuating, as students left mainly due to 1) preparation of the scholarship examination at another Juku and 2) long distance from their home.

Table 5 Number of Students in each Juku

Juku		No. of Total Students														
		2015							2016							
		5	6	7	8	9	10	11	12	1	2	3	4	5	6	7
Pilot Juku	Women's Bank No. 1 (Dabare Mawatha)	53	49	49	73	82	80	66	69	68	76	64	52	52	51	49
	FHP - Attidiya	54	52	51	45	44	40	38	32	45	94	93	59	62	51	46
	Women's Bank No. 2 (Obeysekarapura)	/	/	/	/	74	75	67	61	60	59	49	43	39	42	42
	Women's Bank No. 3 (Thalahena)	/	/	/	/	63	73	98	94	78	79	79	71	63	78	75
Business Based Juku	Women's Bank No. 4 (Borella Center)	/	/	/	/	/	/	/	/	/	/	/	/	/	/	14
	Women's Bank No. 5 (Seevali Pura)	/	/	/	/	/	/	/	/	/	/	46	48	50	48	46
	Women's Bank No. 6 (Kirulapone)	/	/	/	/	/	/	/	/	/	/	/	/	50	60	64
	Women's Bank No. 7 (Nugegoda)	/	/	/	/	/	/	/	/	/	/	/	/	20	33	27
	Women's Bank No. 8 (Rathmalana)	/	/	/	/	/	/	/	/	/	/	/	/	/	/	32
	Women's Bank No. 9 (Malambe)	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	FHP - Borupana	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Total		107	101	100	118	263	268	269	256	251	308	331	273	336	363	395

7 Business Model

The business model is illustrated in Figure 2 with the following features:

- Surala Net will expand the e-learning business through Next Learners as a window to Sri Lankan market.
- The major roles of Next Learners are training, monitoring, management of national staff, and collection of e-learning ID fee.
- The major roles of Surala Net are development and upgrading of e-learning contents, dispatch of experts for training and monitoring and technology transfer, issue and management of IDs, analysis of students' academic achievements and the feedbacks

to Next Learners.

- The partner entities can be Women's bank, FHP and others.
- The basic strategy is to help Women's Bank and FHP for their establishment of Jukus with around 10 PCs for BOP children.

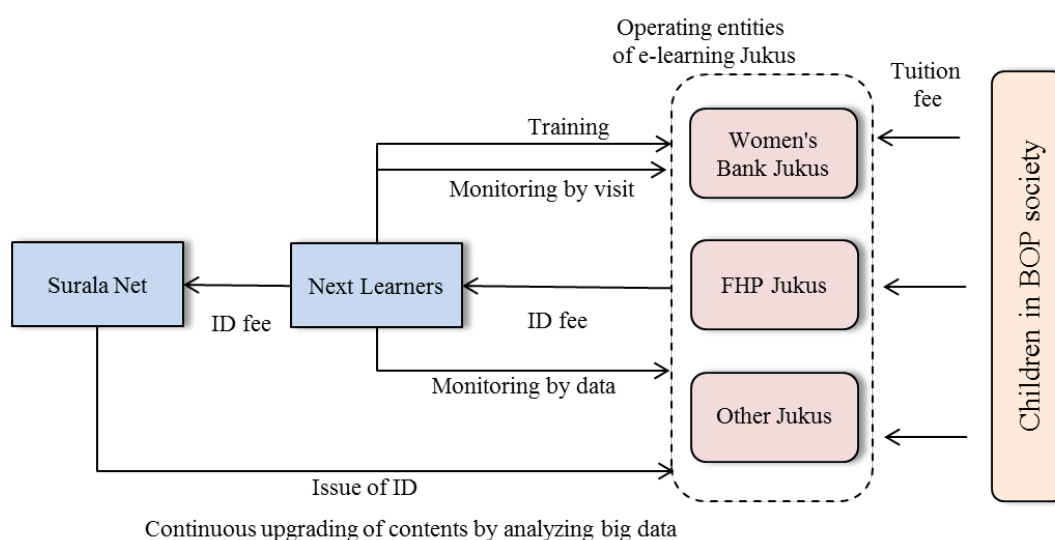


Figure 2 Business Model

8 Remaining Issues and Countermeasures for Business Start-up

Table 6 shows remaining issues, countermeasures and strategies for successful business start-up.

Table 6 Remaining Issues, Countermeasures and Strategies

	Remaining issues	Countermeasures	Strategies
1	Increase of students' attendance rates	Visualization of monthly attendance rates by showing figures Marketing for students living nearby Juku Establishment of small but many Jukus	Training for facilitators Introduction of area marketing Development of marketing strategies with Women's Bank and others
2	Decrease of students' drop-out from Juku	Awareness campaign for parents that mathematics calculation	A series of meeting and discussions with parents

		skills are crucial for O-Level and A-Level examinations as well as business Reporting students' academic improvements to parents at the early stage	Regular individual meeting among facilitators, parents and students
3	Confirmation of academic improvements	Frequent monitoring to check academic improvements through student's database Honor students with significant study efforts	Keep implementation of the endline survey Regular survey of school tests Frequent prize-giving system
4	Increase of students	Expansion of target grades Awareness campaign for academic improvement Use of month-to-month marketing PR activities at schools	Expand from pre-school to over grade 5 Joint events with Women's Bank
5	Increase of profitability	Installation of over 10 PCs at one Juku Occupancy rate to be over 90%	Secure budget to install more PCs Strengthen PR and marketing activities
6	Increase of a number of Jukus	Expand business area inside and outside of Colombo and local cities	Joint efforts with Women's Bank Identification other Juku operating entities
7	Increase of tuition fees	Make parents understand to increase tuition fees at the same level of ordinary Jukus	Differentiate market segments for lower, middle and higher income groups and provide different levels of services

9 Business Start-up Schedules

The business start-up schedules are shown in Figure 3. The major milestones are listed as below:

- August 2016: Registration of Next Learners and opening bank account
- September 2016: Start of ID fee collection
- December 2016: Completion of e-learning contents development

- August 2017: 30 Jukus in operation
- December 2016 and July 2017: Academic achievement test to be used for marketing

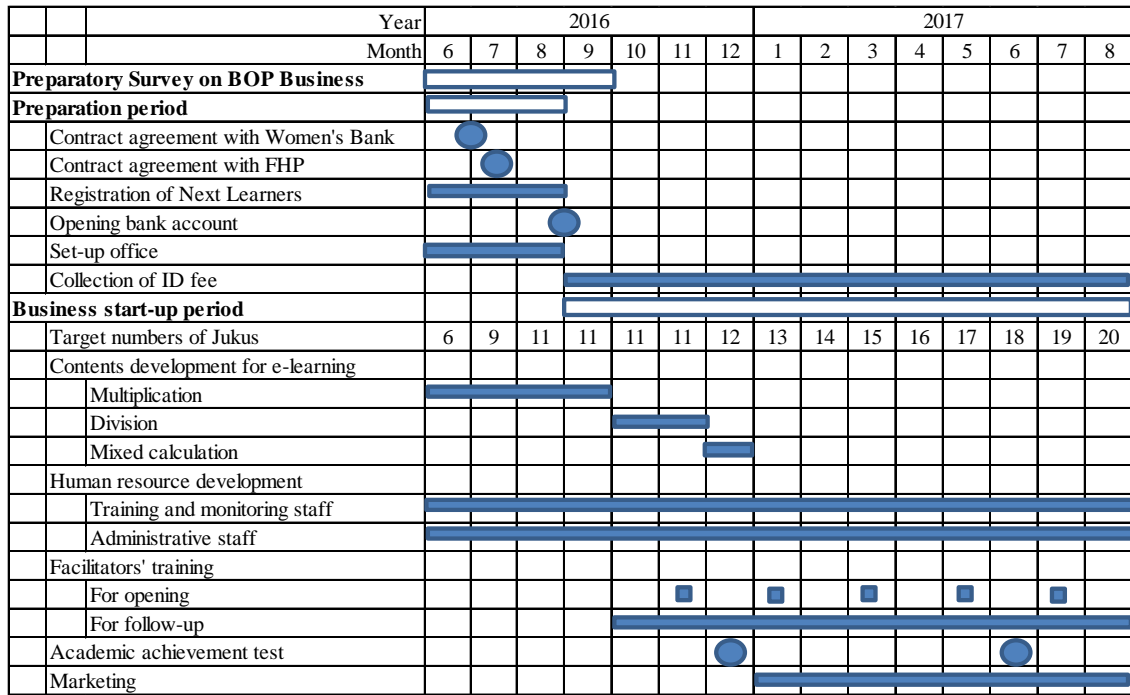


Figure 3 Business Start-up Schedule

