THE CASE FOR PRE-PRIMARY EDUCATION: The Cost Effectiveness of Shishu Kaksha Centres in Nepal

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According to figures from MOE Statistics (2051)[1] and the NMIS Report (1996), current levels of wastage in Class One, due to repetition and drop-out, costs between $16 –$29 million (Rs. 95,59,94,000 –1,65,95,19,000) per year. This is based on a unit cost per Class One child of Rs. 2,070, which covers all costs (both parents and MOE) of enrolling a child in school. The Basic and Primary Education Project, MOE has introduced the pre-primary Shishu Kaksha for children aged 4-5, situated near over 1,000 primary schools. Depending on the number of shishu kaksha implemented in the country, we can project the estimated impact on reducing the wastage in Class One, in terms of savings of between $3,500,000 (Rs. 20,00,00,000) to $12,000,000 (Rs. 68,40,00,000) per year.

Introduction

This paper was written to study the projected impact of pre-primary child care interventions in terms of savings through reduced waste in primary schools. In this respect, the paper begins by examining the unit cost of a Class One student and the current levels of repetition and drop-out in Class One, and then projects the cost implications in terms of wastage for the country as a whole. The purpose of the paper is to influence policy and decision makers to realize the importance of early childhood interventions and to set aside funds through MOE and through the decentralized funds at the VDC level for child care centres and *shishu kaksha* pre-primary classes. These [His Majesty's Government, Nepal] HMG/N funds could be used for the salaries of facilitators, with communities providing space and local materials such as jute and bamboo. UNICEF and other donors/INGOs could support capacity building at national and district levels, and the costs of supervision and materials.

Throughout the 1980s in Nepal, concern was expressed by HMG/N over the imagined high costs related to Early Childhood Development (ECD) interventions. With the expanding number of schools, the rising costs of teacher salaries, and the increasing coverage of primary education, the thought of creating a system of pre-school education within the Ministry of Education was considered too expensive. Based on research and experience, however, educationists and policy makers in Nepal now agree that early childhood stimulation and care can result in reduced repetition

and drop-out rates in primary schools. More importantly, however, is the positive impact of early childhood activities on the mental, linguistic, emotional, physical, and social development of children and thereby, the efficiency of the formal system and the growth of the nation.

In Nepal, there are two types of organized groups of young children: care groups for children aged 2-3, and child care centres and *shishu kaksha* pre-primary classes for children aged 4-5. This study focuses entirely on child care centres and *shishu kaksha* for older children aged 4-5. These programmes do not use school books, but develop the child's social and cognitive skills through games, songs and educational play. Child care centres and *shishu kaksha* do not need uniforms, and meet in a community building, home or school. As a MOE programme, *shishu kaksha* facilitators can receive half the salary of primary teachers and will require special training. Facilitators' salaries and other resources for child care centres and *shishu kaksha* can also be matching funds between MOE, VDC decentralized funds and School Management Committee and community resources.

This study is a projected cost analysis, and does not propose that the country immediately implement *shishu kaksha* in every school nationally. This would be dangerous in terms of quality and sustainability. A national programme or campaign to provide all children with their right to full intellectual, physical and social development should be piloted as campaigns in specific districts before expanding to national coverage. The study does find, however, that the use of government and community resources for early childhood initiatives would have a tremendous impact in terms of savings by reducing the level of wastage in Class One of the primary system.

Analysis of Class One

We will first look at the total cost of Class One. These cost headings are paid by parents, MOE and HMG/N. The unit cost per child, listed below, is divided by 50, the official Class One size.

CLASS ONE—COST BREAKDOWN PER YEAR	PER CLASS	PER STUDENT (50 PER CLASS)
1. Teacher Salary	19,500	390
2. Materials		
Textbooks (Rs. 12 x 3)	1,800	36
Teacher Guides	150	3
3. Teacher Training	1,000	20
4. Stationary & Bag*	19,500	390
5. Uniform & Shoes*	36,000	720
6. School Fees*	22,500	450
7. Overhead	3,040	60
TOTAL	Rs. 103,490	Rs. 2,070 per student

* These are reported costs paid by families for Class One children (NMIS 1996). If we total the costs paid by MOE, we have Rs. 25,490, or Rs. 510 per child. In this regards, parents are investing Rs. 1,560 for each child that they enrol in Class One.

TOTAL NUMBER OF CLASS ONE STUDENTS REPEATING AND DROPPING-OUT IN 2051

According to the MOE Statistics Department, there were 1,282,722 Class One students enrolled in 1994 (MOE Statistics, 2051). The MOE Computer & Statistics Section, however, found that 41.9% of these children repeated and 20.6% dropped out of Class One in 2051. The NMIS Study (1995), found, however, that the national drop-out rate in Class One is 3% and the repetition rate in Class One is 33%. The following calculation provides two figures for the total number of Class One students dropping out and repeating Class One: the MOE Statistics and the NMIS findings.

MOE STATISTICS

1,282,722 children x 41.9% repetition	=	537,460	
1,282,722 children x 20.6% drop out	=	264,240	
		801,700	Class One children repeat/drop-out

NMIS

1,282,722 children x 33% repetition	=	423,298	
1,282,722 children x 3% drop-out	=	38,482	
		461,780	Class One children repeat/drop-out

TOTAL WASTAGE OF RESOURCES IN CLASS ONE

To calculate the total financial waste in Class One each year, we must multiply the number of children repeating and dropping out by the unit cost per Class One student. In this regards, we find that the nation (parents and government) is wasting between US$ 16–29 million each year.

MOE STATISTICS

801,700 children x Rs.2,070	=	Rs.	1,65,95,19,000
		US$	29,114,250

NMIS

461,780 children x Rs. 2,070	=	Rs.	95,59,94,600
		US$	16,769,900

Total waste to government (MOE) is Rs. 510 per student, or Rs. 40,88,67,000 per year.

Cost of Shishu Kaksha

Shishu kaksha is a pre-primary class which has been implemented by BPEP since 1993. At present, there are 87 *shishu kaksha* operating in 36 districts of Nepal. These programmes do not use school books and rote memorization, but develop the child's social and cognitive skills through games, songs and play. *Shishu kaksha* children do not need uniforms, and may meet in the community or in the school. It is important to note that the costs associated with *shishu kaksha* are currently paid for in a cost sharing arrangement between MOE, UNICEF and communities.

	PER CLASS	PER STUDENT (25 PER CLASS)
1. Shishu facilitator salary* Rs. 800 per month	10,400	416
2. Materials		
Textbooks	0	0
Facilitator Guides	450	18
Kit box	4,000	160
Local materials*	1,000	40
3. Training		
Pre-service	1500	60
In-service	500	20
Coord. Training	500	20
4. Stationary	350	14
5. Uniform	0	0
6. Overhead*	3000	120
	21,700	868

* These costs may be partially paid by the community and VDC.

Plan A—Shishu Kaksha for all Underage Children in Class One

In this plan, HMG/N and communities would support *shishu kaksha* and child care centres for only those underage children currently enrolled in Class One.

TARGET POPULATION: NUMBER OF UNDERAGE CHILDREN IN CLASS ONE

The percentage of children who are underage (less than 6 years) in Class One, according to the NMIS report is 14% (NMIS, 1995). The total number of underage children is calculated below.

1,282,722 children x 14% underage (NMIS) = 179,580 children

COST OF IMPLEMENTING SHISHU KAKSHA FOR ALL UNDERAGE CHILDREN

If the target population is all children less than 6 years old who are enrolled in primary school, we can calculate the total cost below:

179,580 children x Rs. 868 per child = Rs. 15,58,75,440 (US$ 2,734,650)

IMPACT OF SHISHU KAKSHA ON CURRENT LEVELS OF REPETITION AND DROP-OUT

We can project that with a *shishu kaksha* programme, both the repetition and drop-out rates in Class One would be reduced. We could estimate that, at the very least, the 14 percent underage children would no longer repeat or drop out in Class One. This is an estimate as we have no substantive research on the effects of *shishu kaksha* on Class One retention. This 14% projection in terms of impact would have the following effect on MOE and NMIS figures: MOE repetition/drop out figures reduced from 62.5% to 47.5% and NMIS figures reduced from 36% to 22%.

MOE PROJECTED WASTAGE WITH ONLY 47.5% REPETITION/DROP OUT

1,282,722 children x 47.5% repetition/drop out = 609,290 children
609,290 children x Rs. 2,070 = Rs. 1,26,12,30,300 (US$ 22,126,800)

NMIS PROJECTED WASTAGE WITH SHISHU FOR 14% CHILDREN

1,282,722 children x 22% repetition/drop out = 282,200
282,200 x Rs. 2,070 = Rs. 58,41,54,000 (US$ 10,248,300)

PROJECTED SAVINGS AFTER INTRODUCING SHIHSU KAKSHA DUE TO REDUCED WASTAGE UNDER PLAN A

To calculate the projected savings, we need to subtract the projected wastage from the existing wastage. For example, if we waste $100,000 today, and reduce wastage to only $40,000, tomorrow, then our savings through reduced wastage would be $60,000. We would then need to subtract the cost of implementing the *shishu kaksha* programme (Rs. 155,875,440) to calculate the total savings through reduced wastage.

MOE PROJECTED SAVINGS IN TERMS OF REDUCED WASTAGE WITH SHISHU FOR 14% CHILDREN

Rs. 1,659,519,000 current waste—Rs. 1,261,230,300 projected waste = Rs. 39,82,88,700
Rs. 398,288,700 savings—Rs. 155,875,440 cost of shishu kaksha = Rs. 24,24,13,260 (US$ 4,252,850)

NMIS PROJECTED SAVINGS WITH SHISHU FOR 14% CHILDREN

Rs. 955,994,600 current waste—Rs. 584,154,000 projected waste = Rs. 37,17,90,600
Rs. 371,790,600 savings—Rs. 155,875,440 cost of shishu kaksha = Rs. 21,59,15,160 (US$ 3,787,900)

Plan B—Shishu Kaksha for each Primary School

This plan calculates the projected impact of *shishu kaksha* and child care centres were established near each of the 22,000 primary schools in the formal system for groups of 25 children aged 4-5.

TARGET POPULATION: ONE SHISHU KAKSHA NEAR EACH PRIMARY SCHOOL FOR 25 CHILDREN AGED 4-5

22,000 centres x 25 children ages 4-5 = 550,000

COST OF IMPLEMENTING SHISHU KAKSHA FOR ALL UNDERAGE CHILDREN

If the target population is 25 children for each school, we can calculate the total cost below:

550,000 children x Rs. 868 per child = Rs. 47,74,00,000 (US$ 8,375,400)

IMPACT OF SHIHSU KAKSHA ON CURRENT LEVELS OF REPETITION AND DROP-OUT

We can project that with a *shishu kaksha* programme, savings would be felt through reduced repetition and drop out rates in Class One. With more children in *shishu kaksha*, they would be better prepared to enter Class One and perform well. In addition, Class One teachers would have fewer distractions from younger children, and would be able to teach more effectively. We have projected that wastage would be reduced in the MOE and NMIS figures by the following amounts: MOE repetition/drop out figures reduced from 62.5% to 30% and NMIS figures reduced from 36% to 11%.

MOE PROJECTED WASTAGE WITH ONLY 30% REPETITION/DROP OUT

1,282,722 children x 30% repetition/drop out = 384,800 children
384,800 children x Rs. 2,070 = Rs. 79,65,36,000 (US$ 13,974,300)

NMIS PROJECTED WASTAGE WITH ONLY 11% REPETITION/DROP OUT

1,282,722 children x 11% repetition/drop out = 141,100 children
141,100 x Rs. 2,070 = Rs. 29,20,77,000 (US$ 5,124,150)

PROJECTED SAVINGS AFTER INTRODUCING SHISHU KAKSHA DUE TO REDUCED WASTAGE UNDER PLAN B

To calculate the projected savings, we need to subtract the projected wastage from the existing wastage. For example, if we waste $100,000 today, and reduce wastage to only $40,000, tomorrow, then our savings through reduced wastage would be $60,000. We would then need to subtract the cost of implementing the *shishu kaksha* programme (Rs. 15,58,75,440) to calculate the total savings through reduced wastage.

MOE PROJECTED SAVINGS IN TERMS OF REDUCED WASTAGE WITH 22,000 SHISHU KAKSHA

Rs. 1,659,519,000 current waste - Rs.796,536,000 projected waste = Rs. 86,29,83,000
Rs. 862,983,000 savings - Rs. 155,875,440 cost of shishu kaksha = Rs. 70,71,07,560 (US$ 12,405,400)

NMIS PROJECTED SAVINGS IN TERMS OF REDUCED WASTAGE WITH 22,000 SHISHU KAKSHA

Rs. 955,994,600 current waste - Rs. 292,077,000 projected waste = Rs. 663, 917,600
Rs. 663,917,600 savings - Rs. 155,875,440 cost of shishu kaksha = Rs. 50,80,42,160 (US$ 8,913,000)

Conclusion

In summary, we have found that parents and government combined are wasting between US $16-29 million each year due to Class One repetition and drop-out. The total cost to government alone, through waste in textbooks, teacher salaries, teacher training, classroom space and overhead is between Rs. 40,88,50,000 (US $7.5 million) and Rs. 23,89,00,000 (US$ 4 million) per year. The costs to parents are three times this amount, or between Rs. 1,25,10,00,000 and Rs. 72,00,00,000 per year. By investing in quality pre-primary education, through both community-based child care centres and through *shishu kaksha* pre-primary classes, savings of between Rs. 20,00,00,000 and Rs. 68,40,00,000 can be realized each year through reduced wastage in Class One. In terms of savings, however, quality early childhood would have impacts beyond only Class One and would be felt throughout the primary cycle, with even further benefits and savings to the nation as a whole.

In estimating the impact of *shishu kaksha* and child care centres on Class One, we are assuming that the programmes will be of high quality. This requires that district level capacity is strengthened in terms of training and supervision, with strong coordination between the DEO, NGOs and DDC/VDC members. For all district level counterparts, orientations on the concepts and importance of early childhood development is required. Parenting education and orientation for communities on early childhood development and healthy play is also important. In this regards, it is essential that we start slowly by strengthening the programmes in selected districts to cover each VDC and school in the whole district with quality early childhood centres. Once this has been accomplished in a few districts, and the impact on Class One repetition and drop-out assessed, we can consider expanding nationally.

It is suggested that for the implementation of child care centres and *shishu kaksha* for children aged 4-5, the Ministry of Education (MOE) should take the lead. Through the Early Childhood Education Section of MOE, policies can be formulated and capacity building at the district level planned in coordination with donors and INGOs. Through the MOE, policies are required which recognize *shishu kaksha* and child care centres both in schools and in communities. Headmasters and SMCs will be required to submit the *shishu kaksha* enrollment figures to the DEO in order to get partial funding for the child care facilitator, which can be half the salary of a full time teacher. If policies are made which link *shishu kaksha* to the decentralized funds of the VDC, then MOE can provide Rs. 500 and the VDC Rs. 500 as matching funds for the salary of the *shishu kaksha* facilitator. For the care of young child aged 2-3 years in community based play groups, MLD should take the lead. The child play groups of MLD could focus more on early childhood development, whereas MOE *shishu kaksha* and child care centre programmes would focus more on early childhood education.

In terms of donor inputs, support could be provided for materials and guides for care givers, for capacity building at central and district levels, for monitoring and supervision, for parenting education and for national communication on child development. At the national level, strengthening of the Early Childhood Section in MOE and institutions such as Faculty of Education and CERID is required. There is a lack of research on the impact of early childhood on Class One.

Incidental evidence from MOE Statistics shows that *Jhapa*, with the highest number of *shishu kaksha* in the country, has the lowest level of wastage in Class One. In 2054, MOE statistics found that 61% of Class One children in *Jhapa* enrolled in Class Two, more than double the national average. In India, research through ICDC found similar results, but donor support for further research is required.

Considering the findings of this short and simple study, the potential savings to the country through the implementation of early childhood programmes is too great to ignore. In the past, MOE staff and planners in HMG/N felt that the government could not afford to expand primary education to include early childhood education. Based on these preliminary findings, however, it is evident that MOE cannot afford to not implement early childhood programmes.

ENDNOTE

1. The year 2051 was used in the original article.

Early Childhood Counts: Programming Resources for Early Childhood Care and Development. CD-ROM. The Consultative Group on ECCD. Washington D.C.: World Bank, 1999.