IMPROVING LEARNING BY EMPOWERING TEACHERS

This is a project for improving primary education in schools based on a 4 year experiment in rural Govt Primary schools, which demonstrated significant learning gains over control sample of urban schools.

To work without Govt support as SSA (Sarva Shiksha Abhiyan) one would have to substitute the BRP/ CRP (Block Resource Person/ Cluster resource person available with SSA) with a coordinator who has good teaching skills, people skills and is motivated. One such person can Coordinate this with about 20 to 25 schools in close geographic proximity – spending about 1 day per 5 school cluster for lesson plan and a day in each school for lesson observation.

Note on Project to improve learning in 55 Govt Primary Schools in Tiswadi

On completion of the 4th year of MOU, "Rewarding Education" between CII and the Govt. Of Goa, in April 2012 the SCERT conducted an evaluation of learning achievements in the 5 rural Govt Primary Schools run by CII and a control sample of 3 aided schools and 2 Govt primary schools in urban areas of Goa namely Panaji/ Porvorim.

The results show that learning in the 5 CII schools was significantly better than the other schools. Synopsis of report attached – Annex 1.

The Goal: to ensure that 80% children pass 4th std with more than 60% marks – because they have the capability if taught well.

Benefit to the society: same 80% will pass 12th std as against 50% now and will match OECD levels.

Resources: BRP/CRP as available in the education system with SSA. **Addition of 2 computers in each 3rd/ 4th std classroom** for remedial. (use Azim Premji Foundation Software – available free – matched to NCERT curriculum)

What does the Dir of Education / GoG provide

1. Identify Lead school and its cluster primary schools.
2. Lead school to nominate the Coordinator – a good teacher with people skills.
3. Approximately one CRP per 10 schools – whose role is to ensure computer assisted remedial is done and assist in lesson observation -, maintain records and upload database.
4. One BRP/ resource person for lesson observation/ lesson plan meetings per 15 schools.
5. Provide 2 computers in each 3rd/ 4th std GPS
6. Pay for developing – activity / goal tracking and monitoring software for entering data as in 3 above.

What does CII provide

Motivate the stakeholders to participate in the project. Design Database software for generating reports of deficiencies; continue with new practices impact in the 5 Corlim schools and source new teaching/ learning tools for the schools.

Methodology : Proven by independent assessment of students in 5 rural GPS schools in Corlim – run by CII under MOU with Govt. Of Goa. (April 2012 – ref Annex 1)

1. Teach to attain MLL (Minimum level of learning) over 4 year period.
2. Teach the topic till 80% children understand.
3. Use computers for play and remedial lesson – preferably in groups of 5 –with teacher supervision and participation

PROJECT WORK PLAN

1. To create a cluster of 5 Primary schools under the lead school of the "School Complex" system. The lead school will nominate a Coordinator who is responsible for implementation of the project along with the ADEI.

2. To conduct once a month teacher training of cluster teachers and guide them to make interesting lesson plans and generate Model Questions. Lead school will provide resource persons to train the teachers as required. (external resource persons – like BRP/ CRP from SSA or other experts may be used)

3. The BRP/CRP to observe at least 2 lessons of each teacher in the cluster each month and record the findings in a quantitative manner. This lesson observation is to be done along with his/ her colleague.

4. Correct teacher deficiencies observed in lesson plan after observation and also during next lesson plan meetings.

5. Conduct periodic common tests based on model questions and mark improvements against their own performance and motivate them to 80:80 (80% students with more than 80% marks)

PROJECT CONTROL

The Coordinator will monitor the database that marks quantitatively following activities. The database will be uploaded by BRP/CRP.

1. Every teacher's participation in Lesson Plan – enthusiastic/ active/ passive, for e.g. enthusiastic
2. Lesson observation rating – for e.g. 8 of 10.
3. The students Continuous Comprehensive Evaluation (CCE) should be then automatically 8 of 10.
4. If there is no progress as above – the coordinator will intervene, identify the problem and correct it.

CII Corlim GPS project

The project started in 2008 with an MOU with Govt of Goa. The MOU prevented infusion of any additional resources. Except for introducing computers in 5 schools in November 2010 no external resources were supplied.

Project findings

1. Focus of the system was completing the portion – even though only 15% students could learn at that pace. Remedial was near absent – as there was no space/ nor spare teacher.

2. Teacher did not feel ownership – and felt that syllabus, the NCERT book was thrust on her.

3. Teacher convinced herself that students of poor, illiterate parents could not study well – especially when their mother tongue was other than MOI – Marathi.

" TEACHING FOR MEASURABLE LEARNING OUTCOMES"

4. Teachers led thru motivation and given new guidelines as approved by Dir of Education
    a. To teach so the child attains Minimum level of learning. (copies of MLL given to all teachers)
    b. Teachers encouraged to use books of their choice/ teaching aids as required.
    c. Teachers told to teach every concept till 80% students understand the topic.

5. A common test conducted in first year to demonstrate to teachers that their apprehensions as in 3 above are wrong. They were given detailed explanation about uniform distribution of intelligence which is not biased by neither parental learning nor wealth.

6. A system of common lesson plan once a month and common test set up which was done through 2008 till june 2009 (after which the ADEI – Mr Naik was transferred – and no one took the initiative) and again from June 2011 till Dec/ Jan 2012. The second common test showed improved learning in 80% of classes.

7. A Computer with Azim Premjee Foundation learning software – in English/ Hindi language was installed for each 3rd and 4th std classroom and we believe most of the schools used it well.

8. In addition from July/ August 2011 till Feb 2012 students of GIM visited the schools one day of the week and tried to enhance the computer learning experience – same APF software was used.

We now await the comparative learning assessment results.

Participants
Dir of Education, Dir. SCERT, Dir SSA, ADEIs of Tiswadi, CRP & BRP of Tiswadi block.
CII education panel members –Mr. Dilip Betkiker, Ms Ranjini Swami (Prof., GIM), Deepak Khaitan (Trustee, Sunshine school), Ms Mrinalini Kumar, Mr Narayan Desai, Ms Nirmala Rebello (ex principal -Sharada Mandir school), Mr Glenn Ribeiro (MIPL), Anil Kher (Chairman, CII Goa)

A COMPARATIVE STUDY OF ACADEMIC ACHIEVEMENT OF THE STUDENTS STUDYING IN CII PROJECT GPS AND OTHER SCHOOLS

Research Report prepared by:

SCERT,

Govt. of Goa,

Alto-Porvorim, Goa

April – 2012

I. INTROUCTION

1.1. Background of the study

CII signed an MoU with the Government of Goa in 2008 to undertake an intervention programme for improvement of academic performance of students of 5 selected Government Primary Schools. The said programme laid emphasis as following:

- Encouragement to teachers to use books and teaching aids of their choice.
- Teaching of every concept/aspect till 80 percent of students learned the topics.
- Introduction of a system of common lesson plan one in every month.
- Administration of common test for assessment of students progress.
- Provision of a computer with learning software in English and Hindi in the classroom of classes III & IV.
- Visits by the students of GIM to the schools once a week to enhance computer learning experience of students.

Since, CII took the initiative for the improvement of academic performance of the students, the need was felt to find out whether the students of the schools in which the said intervention programme was conducted perform better than the students of other schools where in there

was no such programme. Therefore, this study was planned and executed by SCERT, Govt. of Goa. with the request of CII.

1.2. Objective of the study:

The present investigation was carried out with the following objective.

- To find out whether there exist any significant difference in performance between the students of the Govt. Pry. Schools in which, CII carried out intervention programme and the schools where there was no such programme.

1.3. Hypothesis of the study:

- To realise the objective of the study the following hypothesis was formulated and tested.
- There is no significant difference in academic performance between the students of the schools in which the intervention programme was carried out and the schools in which no such programme was conducted.

II METHODOLOGY

The methodology followed in the present study is described under different heads in the following paged.

a) **Research Method :** Experimental method was followed in conduction the present study.

b) **Subjects of the Study:** The intervention programme by CII was conducted in five Government Primary Schools. In this study the students of classes III and IV of these schools formed the experimental group. Altogether 98 students of Class III and 101 students of Class IV formed the data producing sample of the study. Another five schools (two government and three aided schools) were selected to serve as comparison group. Altogether

126 and 125 students of classes III and IV respectively took part in the study. Hence, there are two categories of schools – Experimental (E) and content/Comparison (C) .

C) Data Collection Tools : Data for the study were collected by administering Achievement tests on the subject (students), developed specifically for this purpose. The detail description about the tests is presented below.

Three subjects viz: English, EVS and Mathematic were considered in the present study. In each of these subjects, an achievement test was prepared by experts following the relevant guidelines for preparation of achievement test. All the test items were of multiple choice type. The task for the students was to select the appropriate/correct answer and encircle the serial number of the option so selected. Altogether, there were 40 test items (questions) in each achievement test for class III and 45 items for class – IV. Time duration to answer each test was 60 minutes for class- III and 70 minutes for class-IV.

The Learning outcomes measured by each of the tests and the weight- age (in terms of percentage) allotted to each of the outcomes is given in table 2.1 and Table 2.2

Table 2.1 : Learning outcomes (LO) and weightage in English

LO	**Weightage (%)**	
	Class – III	**Class - IV**

Textual Knowledge	25	25
Expression	50	40
Reading Comprehension	25	35
Total	100%	100%

Table 2.2 : Learning outcomes and weightage (in %) in EVS and Mathematics

LO	**EVS**		**Mathematics**	
	Class - III	**Class - IV**	**Class - III**	**Class - IV**
Knowledge	50	40	40	30
Understanding	40	45	40	45
Application	10	15	20	25
Total	100 %	100 %	100 %	100 %

d) Data Collection Procedures: At the end of the academic Year ie. in the last week of march – 2012, the tests were administered to the students. The school teachers and the CRPs/BRPs were involved in administration of the tests. On the first day tests in English and EVS were administered with a time gap of one hour between the two tests. The next day achievement test in Mathematics was administered in both the classes. The guidelines for test administration were followed in administering the tests. Answers of the students were scored using the scoring key developed for the purpose. One mark was awarded for each correct answer. Sum total of marks obtained by a student in a subject was considered on his/her academic performance in the subject.

e) Data tabulation and Data Analysis Methods: The scores obtained by the students in each of the subject were tabulated school – wise for the purpose of analysis. Calculation of percentage and average (mean score) was carried out. T – test was employed to test the significance of difference between the mean scores of the students of the experimental group schools and the control group schools in each of the subjects of both the classes. Further, performance of the students was analysed in terms of percentage of students scoring certain percentage of marks. Fine levels of performance was considered for this purpose as given below.

% of Marks	**Level**
75 % and More	A
60 % - 74 %	B
45 % - 59 %	C
30 % - 44 %	D
< 30%	E

III FINDINGS AND CONCLUSIONS

3.1 : School–wise and subject-wise Performance:

Data in Table 3.1 and Table 3.2 represents the mean scores of the students of class – III belonging to both categories of schools. The data show that the average performance the students of the schools in which intervention programmes was conducted by CII was better than the schools

in which there was no such programme. The overall mean values of the two catergories of schools are represented in Fig. 3.1.

Likewise, data in Table 3.3 and Table 3.4 represents the mean scores of the students of class –IV belonging to experimental and control group. Also the overall mean scores of the two types of schools are presented in Fig 3.2.

Table 3.1 : Subject–wise mean value of the Experimental Group (Schools) (Class – III)

Subject / School	English	EVS	Mathematics
School - 1	32.8	32.4	31.3
School - 2	32.0	16.0	23.6
School – 3	20.4	30.8	34.6
School – 4	33.0	29.6	32.9
School – 5	27.7	29.0	26.8
All Schools	29.7	27.1	29.8

Table 3.2 : Subject–wise mean value of the Control Group (Schools) (Class – III)

Subject / School	English	EVS	Mathematics
School - 1	16.0	20.1	18.8
School - 2	32.1	28.9	33.0
School – 3	15.0	18.3	19.1
School – 4	25.3	26.5	21.0

School – 5	11.2	11.6	19.2
All School	21.7	22.7	22.9

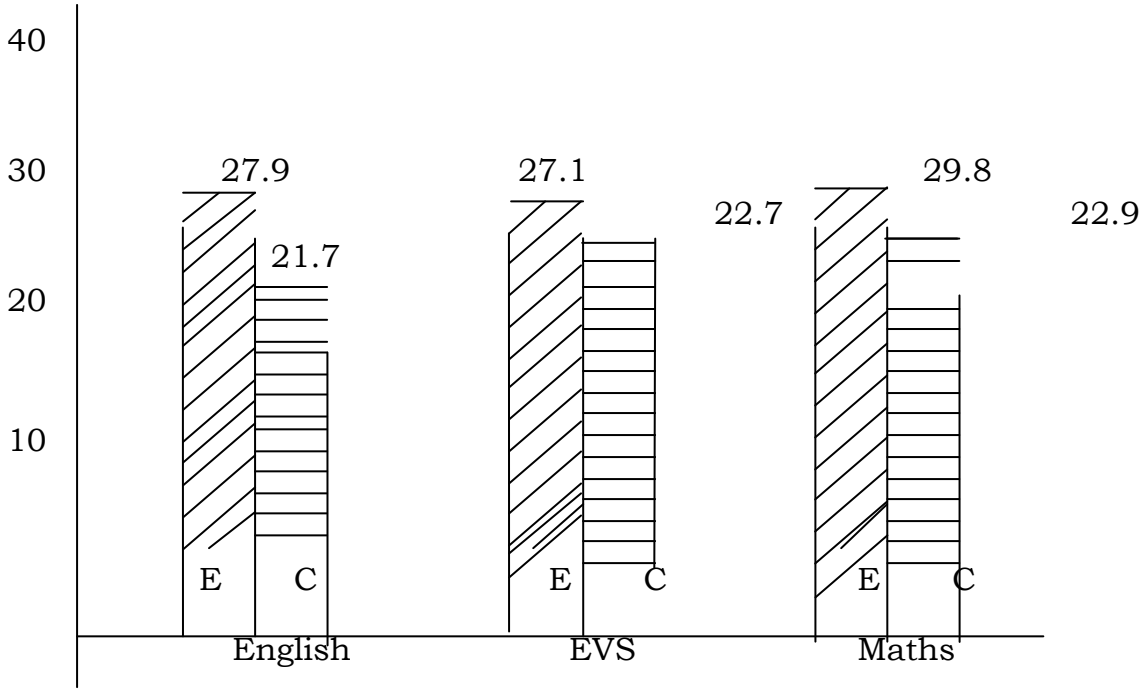

Fig. 3.1 : Comparative overall mean scores of Experimental (E) and Control (c) Group (Class – III)

Table 3.3 : Subject – wise mean value of the Experimental (E) Group (Schools) (Class – IV)

Subject / School	English	EVS	Mathematics
School - 1	39.2	42.3	35.9
School - 2	20.5	23.5	19.9
School – 3	33.4	27.8	21.6
School – 4	37.5	38.9	34.7
School – 5	19.7	32.6	23.6
All School	31.9	33.5	27.7

Table 3.4 : Subject – wise mean value of the Control (C) Group (Schools) (Class – IV)

Subject	English	EVS	Mathematics

School			
School - 1	23.7	32.6	22.0
School - 2	26.1	33.0	29.5
School – 3	24.5	34.7	27.4
School – 4	31.4	34.4	22.7
School – 5	13.7	11.0	13.3
All School	25.9	33.1	25.2

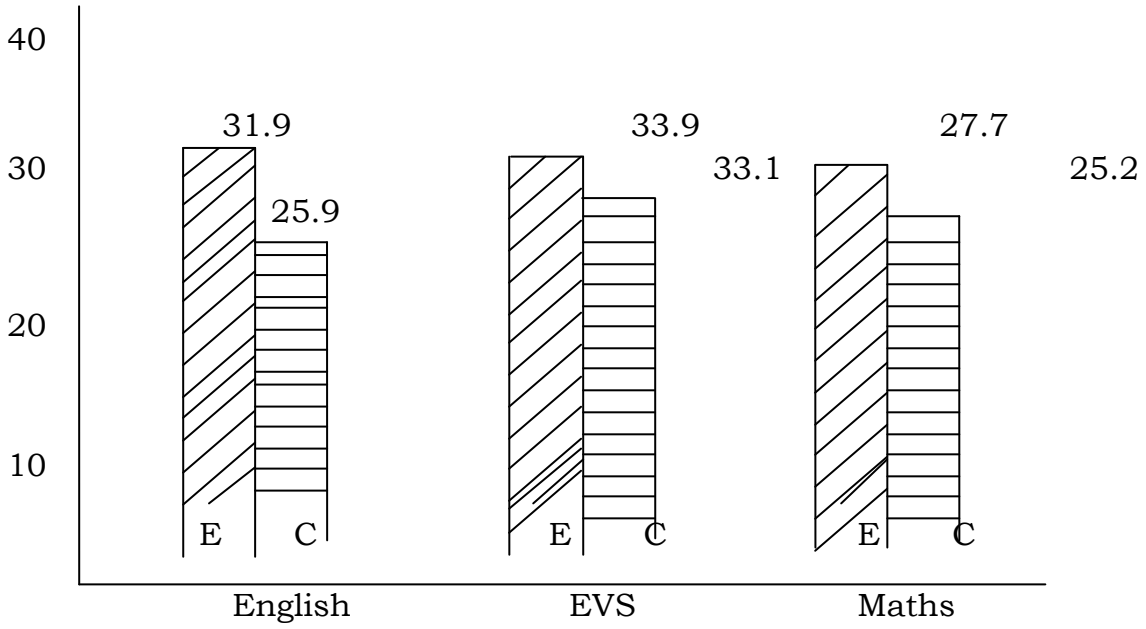

Fig. 3.2 : Comparative overall mean scores of Experimental (E) and Control (c) Group (Class – IV)

3.2 Significance of Difference between the performance of E and C Group

(a) Class – III

The t – test results in Table 3.5 show that all the t – values were significant at 0.01 level of significance. It means there exist significant difference between the mean scores of the E and C

groups in each of the three subjects. Therefore the null hypothesis of no significant difference between the academic achievement of the students of the two types of schools was rejected. From the data in Table 3.5 it is clear that the mean scores in English, EVS and Mathematics of the students in E group are significantly higher than their C – group Counter–parts. In other words, the findings show that the students of the E – group exhibited significantly higher academic performance compared to the students of C – group in all the three subjects under investigation.

3.5 : Significance of Difference between the mean scores of the students of Experimental (E) and Control (C) groups (Class – III) is each subject

Subject	Group	Mean	N	SP	SED	T - value
English	E	29.7	98	6.47	1.06	7.54**
	C	21.7	126	9.34		
EVS	E	27.1	98	8.01	1.16	3.80**
	C	22.7	126	9.34		
Maths	E	29.8	98	7.0	1.06	6.50**
	C	22.9	126	8.94		

** Significant at 0.01 level

(b) Class – IV

The data in Table 3.6 show that the t-values in the case of English and Mathematics are statistically significant. Therefore, the null hypothesis which states that there is no significant difference in between the students of the schools in which the intervention programme was carried out and the schools in which there was no such programme is rejected. The findings show that the students of the schools in which there was intervention programme by CII scored higher in English and Mathematics than the students of other schools. But in the case of EVS though the mean score of the

experimental group was higher than the control group, the difference was statistically not found significant.

3.6 : Significance of Difference between the mean scores of the students of Experimental (E) and Control (C) groups (Class – IV) is each subject

Subject	Group	Mean	N	SP	SED	T - value
English	E	32.5	99	9.28	1.11	5.40**
	C	25.9	125	6.92		
EVS	E	34.1	99	8.47	1.07	0.93 (N.S.)
	C	33.1	125	7.38		
Maths	E	28.3	99	8.42	1.06	2.92*
	C	25.2	125	7.18		

* Significant at 0.05 level
** Significant at 0.01 level
N.S. – Not Significant at 0.05 level

3.3 Comparative level of performance between the students of the two categories (E & C) of Schools

Data in Table 3.7 show that 60 percent, 55 percent and 67 percent of the students of Class –III of the experimental schools have scored 75 percent and above marks in English, EVS and Mathematics respectively. Whereas only 29 percent, 28 percent and 31 percent of students of the other category schools have scored 75 percent and above marks in these three subjects. Also higher percentage of students of the experimental schools than the students of other schools, scored 60-70percent. On the other hand, higher percentage of students of the control group scored lower percentage of marks compared to the students of the experimental group.

Table 3.7 Levels of Academic performance between E and C Group (Class – III)

Range of marks (%)	Level	English				EVS				Maths			
		E		C		E		C		E		C	
75% & More	A	59		37		54		35		66		39	
			(60)		(29)		(55)		(28)		(67)		(31)
60 – 74 %	B	21		18		19		32		18		21	
			(21)		(14)		(19)		(25)		(18)		(17)
45 – 59 %	C	12		25		11		25		8		28	
			(12)		(20)		(11)		(20)		(08)		(22)
30 – 44 %	D	5		26		9		20		2		24	
			(05)		(21)		(09)		(16)		(02)		(19)
< 30 %	E	1		20		5		14		4		14	
			(01)		(16)		(05)		(11)		(04)		(11)
Total		98	(100)	126	(160)	98	(100)	126	(100)	98	(100)	126	(100)

Note: Figures in the parentheses indicate percentage

Table 3.8 shows that in English and Mathematics, higher percentage of students of the experimental group scored 75 percent and above marks than the control group. On the other hand in the subjects relatively higher percentage of students studying in schools where there was no intervention programme by CII scored lower percentage of marks (45 – 59 Percent) than the schools where there was intervention programme. But in the case of EVS, not much difference was found between the students studying in the two categories of school. It may be noted that t-test results did not indicate

significant difference in mean scores between the students of these two categories of schools in Mathematics.

Table 3.8 Levels of Academic performance between E and C Group (Class – IV)

Range of marks (%)	Level	English				EVS				Maths			
		E		C		E		C		E		C	
75% & More	A	58		17		58		72		39		10	
			(59)		(14)		(59)		(58)		(46)		(08)
60 – 74 %	B	13		43		14		39		17		53	
			(13)		(34)		(14)		(31)		(17)		(42)
45 – 59 %	C	17		45		23		9		19		37	
			(17)		(36)		(23)		(07)		(19)		(38)
30 – 44 %	D	8		15		4		1		20		15	
			(08)		(12)		(04)		(01)		(20)		(12)
< 30 %	E	3		5		0		4		4		10	
			(03)		(04)		(00)		(03)		(04)		(08)
		99	(100)	125	(160)	99	(100)	125	(100)	99	(100)	125	(100)

Note: Figures in the parentheses indicate percentage

3.4 : Conclusions

1. The students of class-III studying in schools in which CII conducted intervention programs performed significantly in English, EVS and Mathematics higher than the students of the schools where there was no such programme.
2. The students of class – IV of the schools where in CII conducted intervention programmes scored significantly higher marks in English and Mathematics compared to the students of other schools. But in EVS no significant difference is observed between the academic performances of the students of class-IV of the two types of schools.