



Mulyavardhan  
Annual Evaluation Summary Report,  
Maharashtra (2018-19)



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SHANTILAL MUTTHA FOUNDATION

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**CONTENTS**

1.	Mulyavardhan- The Need and Present Day Coverage .....	3
2.	Annual Evaluation Design .....	3
<b>2.1</b>	<b>Mulyavardhan Evaluation Framework .....</b>	<b>3</b>
<b>2.2</b>	<b>Objectives Of The Study .....</b>	<b>5</b>
<b>2.3</b>	<b>Data Collection Methods.....</b>	<b>6</b>
<b>2.4</b>	<b>Sampling Strategy.....</b>	<b>6</b>
<b>2.5</b>	<b>Selection And Training Of Field Investigators.....</b>	<b>6</b>
<b>2.6</b>	<b>Data Collection And Data Entry .....</b>	<b>7</b>
3.	Data Analyses Techniques .....	7
4.	Findings and Interpretation .....	7
5.	Risks, Mitigation Measures and Limitations of the Study .....	19
6.	Conclusions/ feedback.....	20

## 1. MULYAVARDHAN- THE NEED AND PRESENT DAY COVERAGE

The need for nurturing democratic citizenship in schools through child friendly and child-centred practices has been emphasized by policy documents in India since independence. However, policies haven't translated into practice given the large number of schools in India (1.4 million) and the diverse socio-economic student profile. Although democratic values are inherent in the syllabi of social sciences and languages, there is no structured programme that helps teachers and students develop aspects (thought-feeling-behaviour), attitudes and competencies required to become democratic citizens. Additionally, teachers are not trained to transact values and learner-centred pedagogy in classrooms.

Hence Shantilal Muttha Foundation (SMF) conceptualized 'Mulyavardhan' (MV)- a path-breaking initiative especially for public schools, to provide child-friendly and values-based education to nurture caring, responsible, and democratic citizens through a constructivist, activity-based approach. MV adopts a whole-school approach, whereby all school processes are guided by the values enshrined in the constitution of India. It empowers school leaders and teachers with strategies and curricular opportunities to infuse these values. MV has evolved through trials and evaluations in 450 ZP primary schools from 2009-2014 in Maharashtra based on which the programme was revised and offered to the state governments of Maharashtra and Goa after review by the state officials. MV was expanded across both the states in phases from 2016-19 under the ownership of the respective state governments. It is running in all 67000 and 781 government primary schools of Maharashtra and Goa respectively.

## 2. ANNUAL EVALUATION DESIGN

Although the MV baseline studies in Maharashtra and Goa were conducted by third parties in 2016, the MV evaluation framework with its indicators were subsequently revised.

### 2.1 Mulyavardhan Evaluation Framework

The revised evaluation framework is presented below. It states three broader programme outcomes from 1 to 3. Corresponding to every outcome are the parameters from P1.1 to P3.3 and for every parameter are the indicators from 1 to 13 followed by eight student-learning outcomes from SLO 1 to SLO 8. As can be seen, the outcomes for a school implementing MV through a whole school approach are expected to be seen at three levels namely school, classroom, and student-level:

	Programme Outcome	Parameter	Indicators
1	Schools demonstrate value-based school leadership and provide a safe and non-threatening, inclusive, just and	P 1.1 Value-oriented school governance as seen through school developmental goals, decisions and plans	1. School planning/goal setting/decision-making by the school governance in matters of school development is seen and indicates well defined objectives with focus on value inculcation.
		P 1.2 Value-oriented plans of curricular experiences and opportunities	2. Planning of school-level curricular experiences is seen and indicates well defined objectives with focus on value inculcation

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	equitable environment.	P 1.3 School staff and SMC exhibit and encourage constitutional values through personal behaviour in key processes of planning, execution and review.	3. School staff plan and make decisions with SMC, parents and students by establishing a democratic climate. <i>(They make efforts to promote participation of all, mutual respect, delegation, accountability, care and concern, consensus and transparency )</i>
			4. School staff executes plans, events, routines, and procedures with SMC, parents and students by establishing a democratic climate and encouraging positive interpersonal relations. <i>(They make efforts to promote participation of all, delegation, role-specific autonomy, accountability and ownership, equal opportunity and to encourage positive interpersonal relations, respect, care and concern for all )</i>
			5. School staff along with SMC, parents and students demonstrates a culture of review and feedback. (Review process involves use of democratic principles of transparency, participation of the concerned stakeholders, respect, openness to feedback and accountability.)
			6. School staff along with SMC, parents and students consciously reflects and acknowledge quality of performance in relation to the intended value-based goals.
2	Classrooms provide a safe, caring and child-centric environment and demonstrate practices supportive of value-related competency development.	P 2.1 Teachers demonstrate sound understanding of MV course content and use child-centred pedagogy	7. Teachers demonstrate different co-operative learning methods, conduct lessons aligned to outcome, clarity in giving instructions, resolve queries in a child friendly manner
			P 2.2 Classroom environment stimulates self-awareness, self- management skills and responsible behaviour
		9. Students demonstrate self- awareness and self-management skills	
		10. Teacher provides opportunities for demonstrating responsible behaviour and decision-making and also models responsible behaviour	
		11. Students exhibit responsible behaviour and make responsible decisions	
		P 2.3 Classrooms demonstrate social awareness and exhibit constructive, non-discriminatory and inclusive environment	12. Teachers demonstrate practices to promote social awareness and positive inter-personal relations through empathy , non-discrimination, fairness and inclusion
13. Students demonstrate social awareness skills, non-discrimination, fairness, inclusion			
3	Students demonstrate social-emotional skills and attitudes required for becoming productive,	P 3.1 Students demonstrate self- awareness and self-management	SLO1. Demonstrate self-awareness and application of self-management skills for personal well-being and effectiveness SLO 2. Demonstrate independent thinking SLO 4a. Demonstrate skills to critically reflect on issues concerning self and develop innovative solutions to problems and challenges

responsible citizens.	P 3.2 Students demonstrate social awareness and Inter-personal relationship skills	SLO 4b. Demonstrate skills to critically reflect on issues concerning others and the world at large, and develop innovative solutions to problems and challenges SLO 5. Demonstrate recognition and appreciation of diversity SLO 6. Demonstrate interpersonal skills to build and maintain positive relationships based on mutual respect SLO 7. Demonstrate care for others SLO 8. Contribute to the well-being of others in the family, school and local community
	P 3.3 Students demonstrate responsible behaviour	SLO 3. Demonstrate responsible decision-making

**Table 1: MV Evaluation framework**

In order to overcome the limitation arising due to lack of comparability of results on account of the interim framework changes, the current evaluation adopted a quasi-experimental design to allow for establishing baseline scores for schools not implementing MV around the time when the study was conducted. Inclusion of a ‘control group’ was possible owing to the four phase expansion in Maharashtra wherein there were around 27000 schools that had not started MV at the time of data collection.

**Hence two types of schools were evaluated in Maharashtra leading to two kinds of studies:**

- i. **Study 1-** for the schools where MV was being implemented for atleast one year (Pilot phase 2016-17 + Phase 1 schools 2017-18). Hence the schools coming under expansion Phase 2 (2018-19) were to be omitted as they were implementing MV for less than a year at the time of data collection. This study would deliver the results based on the class-level intervention in the respective schools.
- ii. **Study 2-** It would deal with the blocks where MV training had not yet been received and hence MV implementation had not commenced at the time of data collection i.e. the blocks under expansion Phase 3 (2019-20 blocks). Study 2 was to be treated as a pre-intervention study for MV as per the revised MV M&E framework. This study was to deliver the pre-intervention results for the entire MV whole school approach.

**For Goa, only Study 1 was to be conducted since all schools in Goa were already implementing the MV classroom interventions.**

## 2.2 Objectives Of The Study

**The two studies were planned with the following objectives:**

- To establish the baseline scores (for expansion Phase 3- 2019-20 blocks) on all the MV outcomes as per the revised evaluation framework in relation to the classroom environment, school environment and interpersonal relations and also the students’ MV learning outcomes.
- To establish the initial scores (at time t=t1, for the schools belonging to pilot + expansion Phase1- 2017-18 blocks) for the class-level components of the evaluation framework in relation to the classroom environment, interpersonal relations and the student learning outcomes.

- To find out if a longer duration of intervention in schools (Pilot schools) yields improved scores vis a vis a shorter duration of intervention (Phase 1 schools).
- To find out if there is a difference in student learning outcomes among children from rural, tribal, migrant, urban schools.
- To find out if MV classroom activities influence student-learning outcomes for MV (2017-18 vs 2019-20 blocks).

### **2.3 Data Collection Methods**

The data collection tools included a total of 12 instruments administered after a try-out. These mainly comprised school and class observation tools, stakeholder interview schedules, reporting checklists. Documentary analysis and qualitative summary sheets were the additional tools. The number of tools to be used in both studies was as per the scope of the studies 1 and 2. All the 11 tools were used in study 2 to assess the baseline levels on each of the three programme outcomes while study 1 used only the tools relevant to the outcomes of classroom intervention- class observation, teacher interview, student interview, teacher report, and parent report.

### **2.4 Sampling Strategy**

Due to constraint on time and the available manpower for data collection, the sample size could not be based on the accepted norms for the confidence levels. The following criteria were considered for determining the sampling size:

- For Maharashtra Study 1, all the 36 districts were to be taken up for further sampling while for Study 2, 23 districts were available with blocks that had not yet implemented MV.
- Stratified random sampling method was used for selection of clusters between two groups- tribal/rural vs urban. For Study 1, two clusters were to be selected from every district with additional criteria that one of the clusters would be from the Pilot phase while the second cluster would be from Phase 1. In order to meet the above criteria, some purposive aspects were considered. For Study 2, only one cluster per district was to be chosen.
- A 'simple random sampling with replacement' was used for including the schools within the sampled clusters. Two schools were to be sampled within every cluster. Student enrolment (high vs. low) was the additional criteria considered. The school sampling was done as per the UDISE enrolment data 2017-18. For cases where the enrolment numbers of 2017-18 were found to be mismatching with the actual enrolment figures from the field, the sampled school had to be replaced with another school from the same cluster which fit the enrolment criteria.

### **2.5 Selection And Training Of Field Investigators**

It was decided that the FIs would be a combination of SMF master trainers (MTs) and the Taluka Coordinators (TCs) who already had a good understanding of the programme and its expected outcomes. A team of two FIs (1 MT+ITC) was sent to every school. One or two days per school were required for Study 1 and 2 respectively, as the number of tools varied across both the studies. Two days of classroom training was followed by 1/2 days of field training. The classroom training was conducted

through lot of interactions, role-plays, picture observations and debriefs. For the field training, 11 schools from four clusters (Rihe, Theur, Bhugaon and Kesnand) which were in proximity to the Pune city were identified. Two teams of FIs were allocated to every school and these teams were accompanied by a team of two observers from the Head Office. This helped to establish the reliability of tools and the FIs. **Orientation of DIECPDs:** A day's orientation was also held for DIECPD representatives of various districts on 17th January. The purpose of the orientation was to involve them in the study and also enlist their support on the field at the time of data collection to address any issue arising in the school.

### 2.6 Data Collection And Data Entry

The scheduled data collection was from 21st Jan to 7th Feb 2019 in Maharashtra for both the studies and from 11th Feb-21st Feb 2019 in Goa. A separate schedule was also planned for observers from the Head Office to visit a few schools across both studies to monitor data collection. All the tools were uploaded on the Mulyavardhan App for data entry by the FIs.

**Helpline:** All the FI teams were assigned dedicated helpline numbers of the M&E team from the Head Office to address any issues or challenges arising on the field which could not be resolved at their end.

## 3. DATA ANALYSES TECHNIQUES

S No.	Technique Used	What does it provide?
1	Mean	Indicator Score, Study Score, LO Score, Parameter Score, Outcome Score
2	Mode	Contribution of every individual option to the overall question
3	Skewness	Nature of the data
4	Kurtosis	Nature of the data
5	ANOVA and t test	Consistency of tools within an indicator Consistency of stake holders and FIs within an indicator
6	t test	Comparison according to Grades, Gender, Period of intervention, Urban-Rural regions, Tribal-Non-tribal regions, studies 1 and 2, indicators, outcome levels
7	Percentiles	Difference in percentiles as a measure of progress

**Table 2: Data Analyses Techniques**

## 4. FINDINGS AND INTERPRETATION

As can be seen from the table below, Indicators I1 to I6 are related to outcomes expected at the whole school level and were assessed only in study 2. The means for these six indicators are less than 0.5 as a result of which the mean of entire study 2 is lesser than that of entire study 1.

Indicator		State-level Indicator Mean		Decision	% of Study 1 schools with >=10% growth over study 2 schools
		Study 1	Study 2		
I1	School planning/goal setting/decision-making by the school governance in matters of school development is seen and indicates well-defined objectives with focus on value inculcation.	Not included in the study			
I2	Planning of school-level curricular experiences				

	is seen and indicates well defined objectives with focus on value inculcation				
I3	School staff plan and make decisions with SMC, parents and students by establishing a democratic climate.				
I4	School staff executes plans, events, routines, and procedures with SMC, parents and students by establishing a democratic climate and encouraging positive interpersonal relations.				
I5	School staff along with SMC, parents and students demonstrates a culture of review and feedback. (Review process involves use of democratic principles of transparency, participation of the concerned stakeholders, respect, openness to feedback and accountability.)				
I6	School staff along with SMC, parents and students consciously reflects and acknowledges quality of performance in relation to the intended value-based goals.				
I7	Teachers demonstrate different co-operative learning methods, conduct lessons aligned to outcome, clarity in giving instructions, resolve queries in a child friendly manner	*0.59	50	I7(Study 1)>I7(Study2)	50
I8	Teachers provide stimulus for self- expression and self-management	0.70	26	I8 (study 1)=I8 (study 2)	26
I9	Students demonstrate self- awareness and self-management skills	0.86	53	I9 (study 1)= I9 (study 2)	53
I10	Teacher provides opportunities for demonstrating responsible behaviour and decision-making and also models responsible behaviour	*0.45	38	I10Study 1)>I10(Study2)	38
I11	Students exhibit responsible behaviour and make responsible decisions	0.91	52	I11 (study 1)= I11 (study 2)	52
I12	Teachers demonstrate practices to promote social awareness and positive inter-personal relations through empathy , non-discrimination, fairness and inclusion	0.56	3	I12(Study 1)<I12(Study2)	3
I13	Students demonstrate social awareness skills, non-discrimination, fairness, inclusion	*0.92	54	I13Study 1)>I13(Study2)	54
<b>Entire Study</b>		<b>*0.61</b>	96	I7+...+I13(Study 1)>I7+...+I13(Study2)	96

\*Statistically significant difference at level of significance  $\alpha=0.01$

**Table 3: State-level Indicator mean scores-Study 1 & 2**

The comparative picture across the two studies (i.e. MV schools versus non-MV schools) in Maharashtra emerges from indicator 7 onwards. It can be seen that I7, I10 and I13 of study 1 are performing significantly better than those of study 2. Also, for I8 and I11, there is no significant difference between the mean performance of study 1 and that of study2. But for I12, study 2 is performing significantly



higher than that of study 1. When we compare the overall mean from I7 to I13 together, performance of study 1 is significantly higher than that of study 2.

Further, the percentage of schools in study 1 showing 10% or more growth for each indicator, as against study 2 was also calculated as shown above. If entire study is taken into account, 96% of schools under study 1 are showing 10% progress or more over the study 2 mean. This is a success indicator of the MV program.

In order to capture the 'magnitude' or the 'degree' of progress made by MV schools under study 1 over the non-MV schools under study 2, differences in percentiles for all the common indicators I7 to I13 were calculated. A greater positive differential indicated greater progress in Study 1 over 2 for a particular indicator. The differential is in favour of study 1 than study 2 for all indicators (I7 to I13) except for I12. Amongst them, the differential and hence the degree of progress is higher for I7 and I10, whereas it's lower for I11.

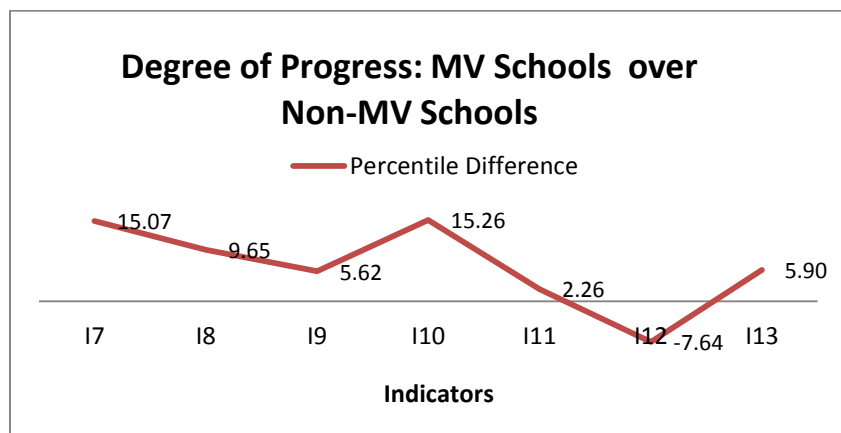


Fig: Degree of Progress: Study 1 over Study 2

#### Key Findings on aspects related to Indicators I1 to I6 in Study 2

- Various aspects were captured in terms of school infrastructure to understand the level of awareness, civic consciousness among the school staff in order to promote a healthy, welcoming, safe and clean environment for all in the school. It was found that over 60% of the schools lacked the necessary processes and practices for making the physical spaces welcoming for everyone. The schools were also found lacking in aspects of safety and security of children as indicated by absence or faulty boundary wall, drinking water quality, safety guidelines and conditions for ventilation, illumination, hygiene being less than desirable.
- Environmental consciousness also seemed on the lower side in majority of the schools.
- 82.61% schools had not made plans for achieving goals to meet the physical requirements along with psycho- social well-being of staff reflecting lack of concern and respect for the staff welfare.
- Interpersonal relations among different stakeholders were largely positive.
- Over 40% of the schools had more than 50% of the SMC members who actively participated in discussions and contributed towards decision-making, as reported by both, HMs and SMC members.

- However, SMC awareness towards contemporary educational discourses/government policies seemed lacking, an aspect that is otherwise assumed to help the school teams in their decision making for school development.

### **Key Findings on aspects related to Indicators I7-I13 across studies 1 & 2**

A few key aspects emerging on the use of learner-centred pedagogy, classroom management techniques and opportunities provided for responsible behaviour by the teachers along with the skills/attitudes demonstrated by the students in both the studies are:

- 46.15% of teachers in Study 1 reported providing group learning opportunities daily, signalling much scope for improvement. In study 2, on the other hand, only 31.34% teachers reported that such opportunities were provided daily.
- Certain teaching-learning strategies seemed deficient, in both studies such as clarity of instructions to students, teacher preparedness for a lesson, making changes in class organization/ seating as per the demand of the activity or the session, encouraging students to ask questions, give feedback, share opinions.
- With regard to teacher practices for promoting responsible behaviour among students, while themselves modelling such behaviour, it was seen that out of 194 classrooms observed in study 1, 22 % had no class rules. In study 2, almost 79.40% out of the 68 classes observed had no class rules.
- Likewise, in almost 44% classrooms, either all or most students under study 1 were seen to be following class rules, class routines and procedures while in the rest, either few or no student was seen following the rules and procedures. In study 2 in around 15% classrooms, all or most students were seen to be complying with the rules and procedures.
- Teachers in study 1 were also asked about the kind of disciplining strategies they used for classroom management wherein 85% teachers reported the use of only positive strategies while 15% referred to the use of positive as well as punitive practices for disciplining students. In study 2, 68.18% teachers reported using only positive strategies. In study 1, formation of class rules along with students secured the highest preference (59.4% responses) closely followed by encouraging self-reflection in case of misconduct (45.13% -see figure below). However positive reinforcement techniques like appreciating students for good behaviour, encouraging students to remind each other of the class rules, involving students to decide the consequences of breaking rules and practising consistency in applying the consequences seemed to be less popular among the teachers.

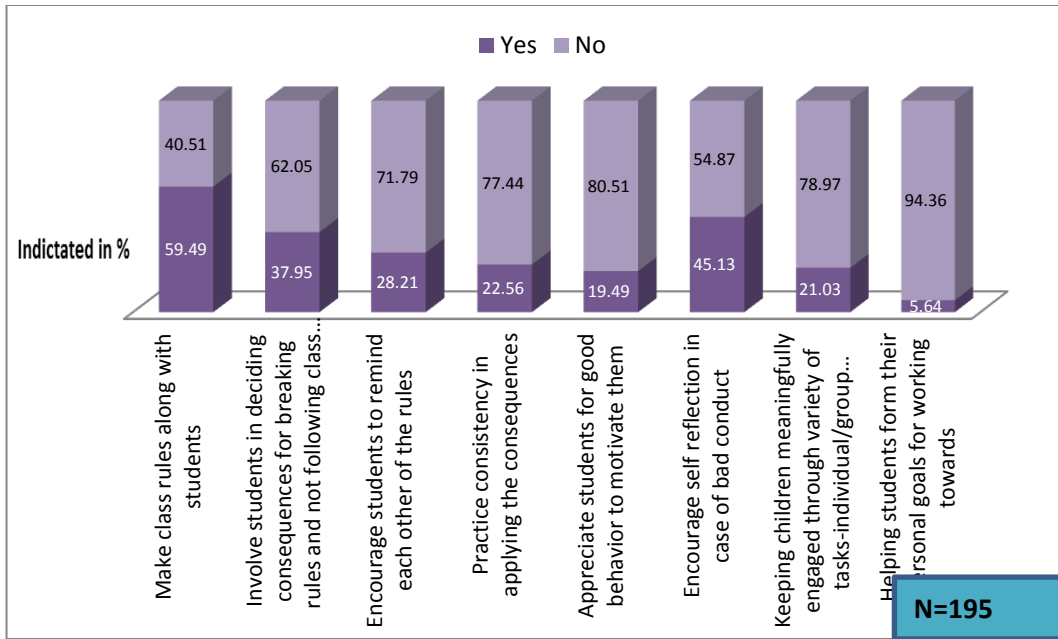


Fig: Study 1- Positive Discipline Practices Followed in Class

In study 2, making class rules with students was negligible (see figure below). Student appreciation for good behaviour was the most widely followed practice (77%), followed by keeping children meaningfully engaged to avoid distraction and indiscipline (32%).

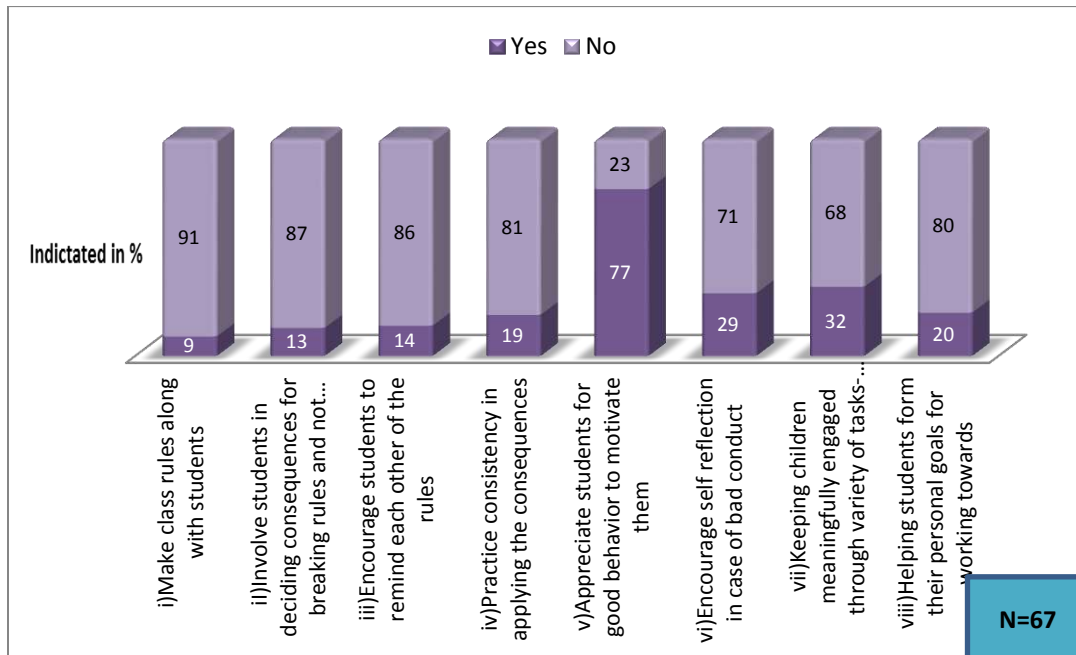


Fig: Study 2- Positive Discipline Practices Followed in Class

- During the student interviews for study 1, it was observed by the FIs that 80% of the children demonstrated an awareness to use common facilities properly and 77 % students also seemed

to be aware of certain civic duties when they were asked to respond to a scenario on the issue of littering inside a bus. In study 2, 64.78% of children demonstrated an awareness to use common facilities properly while 59.13 % of children seemed to be aware of certain civic duties.

- During class observations, in around 50% of the Study 1 classrooms and 42% study 2 classrooms, either most or all students were seen to be responsible and sensitive towards civic duties (Eg: switching off the fan, light before leaving, keeping their desks, belongings and surroundings clean and organized etc., keeping TLMs back in place).
- In terms of responsible behaviour towards own wellbeing by keeping oneself neat and tidy, most of the FIs observed that all students in studies 1 and 2 were dressed up tidily and kept themselves clean.
- In matters of the ability of a teacher to ensure that the distracted or non-participating students were being engaged in the activity, it was observed that only 39% teachers always or most of the times demonstrated the same. In majority of the classrooms, the teachers only sometimes displayed this ability. In study 2, the inclusion of non-distracted students was seen in greater no. of classrooms (63.27%) and 45% classrooms had teachers ensuring inclusion of such children only sometimes.
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#### Student Learning Outcomes (LOs): Performance at State-level

While the student learning indicators I9, I11 and I13 mentioned above speak about student practices observed in the classroom, the following student outcomes are a demonstration of their value-related competencies beyond classroom that may be observed during their day in school and by the parents at home.

LO Mean Score				%of Study 1 schools with >=10% growth over Study 2 mean
LO	Study 1	Study 2	Decision (at LoS 1%)	
<b>LO1-</b> Demonstrate self-awareness and application of self-management skills for personal well-being and effectiveness	*0.89	0.86	*LO1(Study 1)> LO1(Study2)	12
<b>LO2-</b> Demonstrate independent thinking	0.88	0.86	LO2 (study 1)= LO2 (study 2)	22
<b>LO3-</b> Demonstrate responsible decision-making	*0.91	0.88	*LO3(Study 1)> LO3(Study2)	6
<b>LO4-</b> Demonstrate skills to critically reflect on issues concerning self and the world at large, and develop innovative solutions to problems and challenges	*0.85	0.77	*LO4(Study 1)> LO4(Study2)	53
<b>LO5-</b> Demonstrate recognition and appreciation of diversity	*0.80	0.75	*LO5(Study 1)> LO5(Study2)	31
<b>LO6-</b> Demonstrate interpersonal skills to build and maintain positive relationships based on mutual respect	*0.92	0.89	*LO6(Study 1)> LO6(Study2)	3
<b>LO7-</b> Demonstrate care for others	*0.92	0.89	*LO7(Study 1)> LO7(Study2)	32
<b>LO8-</b> Contribute to the well-being of others in the family, school and local community	0.93	0.92	LO8(study 1)= LO8 (study 2)	14

<b>Entire Study</b>	*0.89	0.86	*LO1+...+LO8(Study 1)> LO1+...+LO8(Study2)	4
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\*Statistically significant difference at level of significance  $\alpha=0.01$

**Table 4: State-level Student LO mean scores-Study 1 & 2**

As can be seen from the table above, the mean student learning outcomes across both studies are higher than the indicator means seen in the previous table. In general, the program outcome 3 that corresponds to the student learning outcomes is far better than the class-level outcome 2 in both the studies. This implies that students perform well in spite of the teachers' or schools' desirable interventions. This could be because the children of this age group are more impressionable and even an incremental increase in the opportunity given to them may result in the students demonstrating the desired competencies to a greater extent. That apart, the fact that students may also have access to opportunities for acquiring a certain set of competencies back home through their interactions with parents and community cannot be overlooked. Having said that, this could be an area of research for the organization to understand the reasons behind the marked difference in student responses versus the teachers' abilities to promote/ elicit these competencies among students

Also, as can be seen from the table above, for LO2, LO5 and LO7, the percentage of schools showing 10% or more progress is comparatively high whereas for LO1, LO3, LO4 and LO8 the percentage of schools showing 10% or more progress is comparatively low. If we look at the scores, then the mean score of study 2 for LOs is basically high. So, there is less chance of progress.

### **Study 1 & 2: School Performance Distribution**

A categorization of school performance from Study 1 and 2, based on the school means in each of the indicators, parameters and outcomes has been done along four performance levels viz. Q1 (school mean between 0-0.25), Q2(school mean between 0.25-0.50), Q3 (school mean between 0.50-0.75) and Q4 (school mean between 0.75-1.00).

#### **A. Study 1 & 2: School Performance Distribution across Indicators**

The following charts show the number of schools in each performance category from Q1 to Q4 for all the indicators, each for Study 1 & 2. As can be seen, for Study 1, the indicators I7, I8, I12 have the highest proportion of schools falling in the performance level Q3 while I9, I11, and I13 have highest proportion of schools performing at Q4. If we follow the performance categories then there are hardly any schools performing at the lowest category for any of the indicators. Q2 peaks only for I10 while it remains fairly low for the rest of the indicators. Q 4 shows maximum variation wherein it is seen that it remains low for all teacher-related indicators (i.e. I7, I8, I10,I12) and peaks for student indicators (I9, I11 and I13).

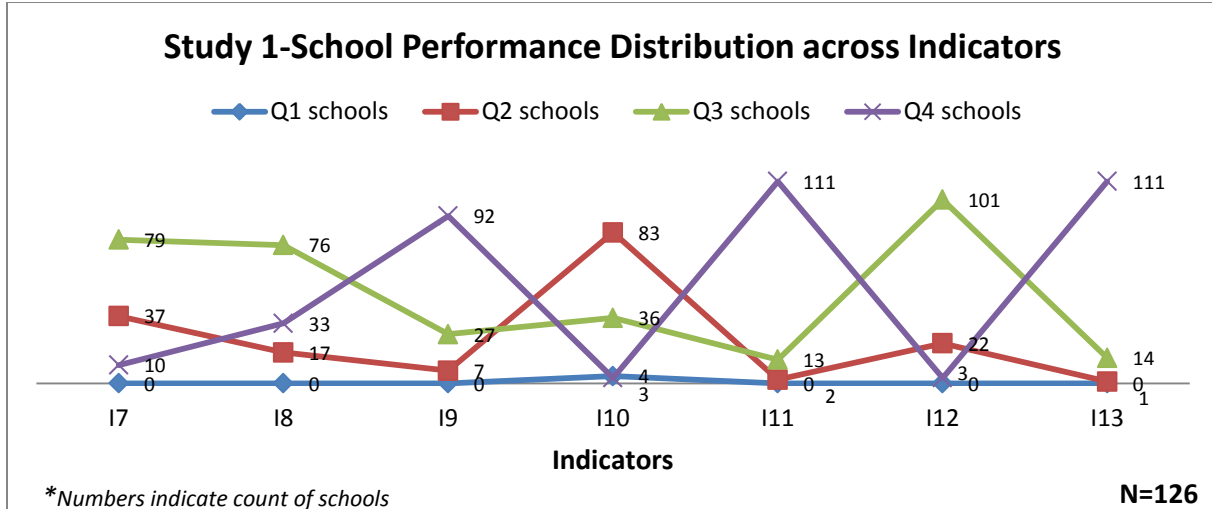


Fig: Study 1- School Performance Distribution across Indicators

For Study 2, the school related indicators I1 to I6 have greater proportion of schools in the performance category Q2. Except for I6, the rest of the indicators from I1 to I5 have fewer schools in the lowest category Q1. For I6, however, the schools in Q1 and Q2 are found almost in equal measure. There are negligible schools under the highest category Q4 for all indicators except the student indicators I9, I11 and I13. Similarly, there are negligible schools in the lowest category Q1 in all indicators except I6.

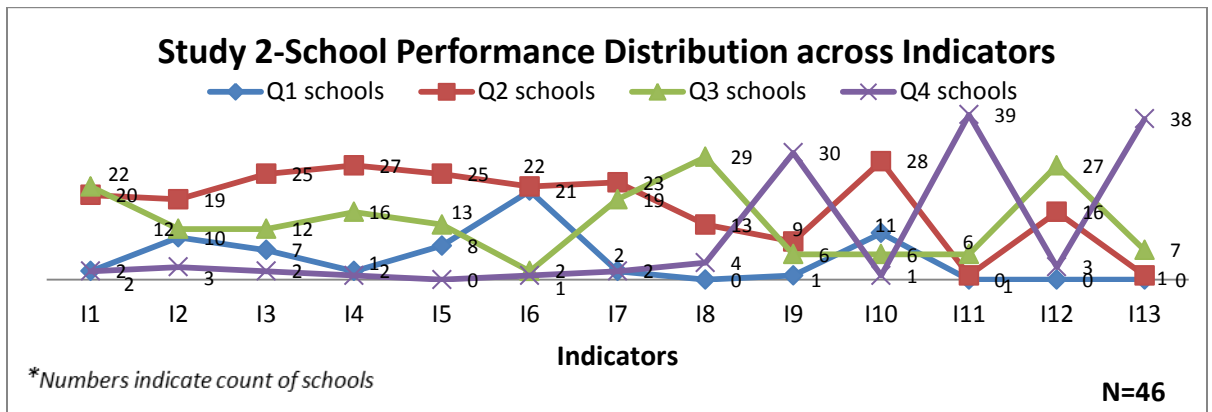


Fig: Study 2- School Performance Distribution across Indicators

**B. Study 1 & 2: School Performance Distribution across Student Learning Outcomes**

The following charts show the number of schools in each performance category from Q1 to Q4 for all the student learning outcomes, each for Study 1 & 2. As can be seen, for both the studies Q4 has the highest proportion of schools across all LOs with Q1 and Q2 having nil or negligible schools.

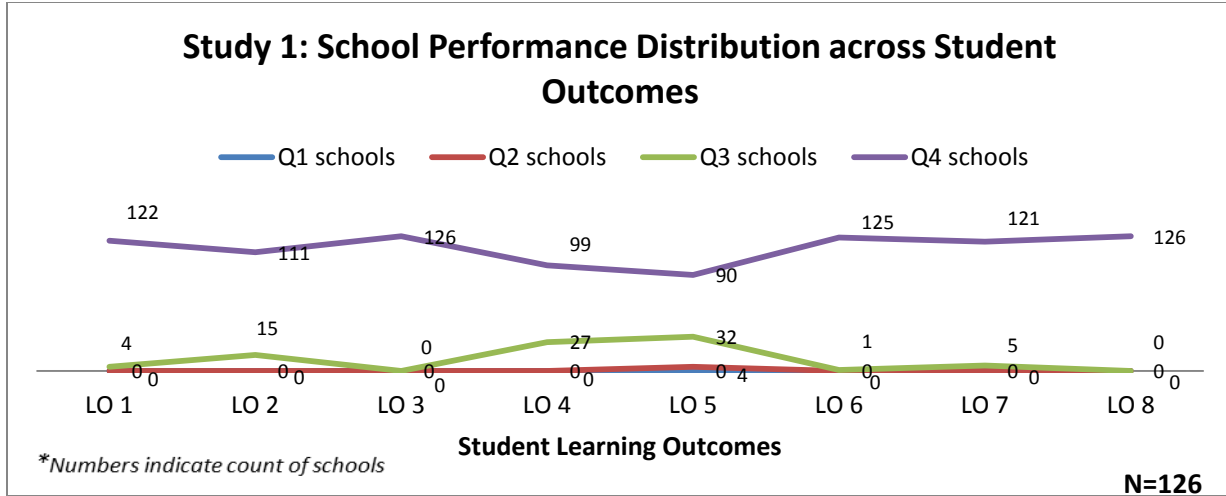


Fig: Study 1- School Performance Distribution across Student Outcomes

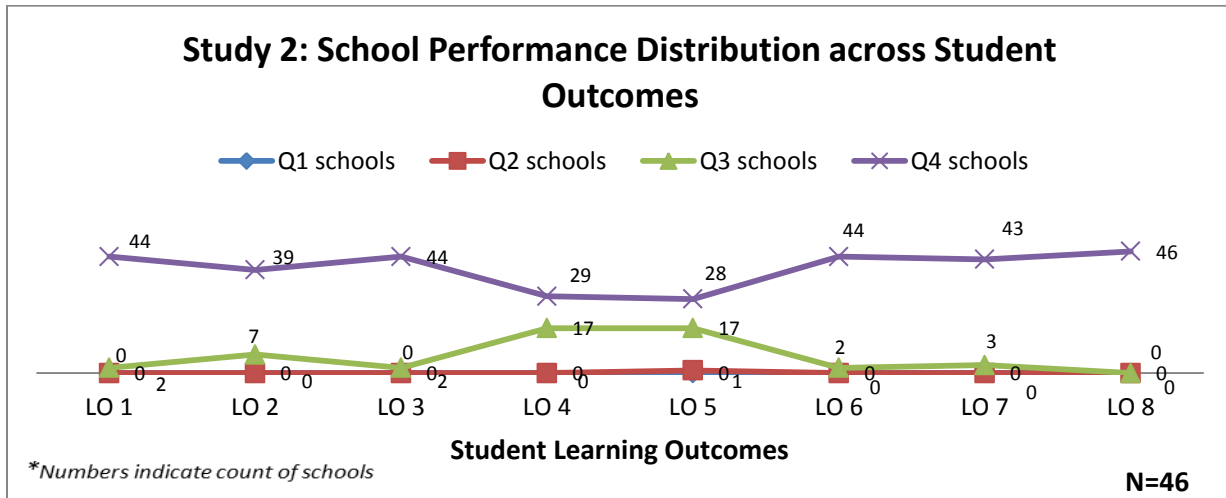
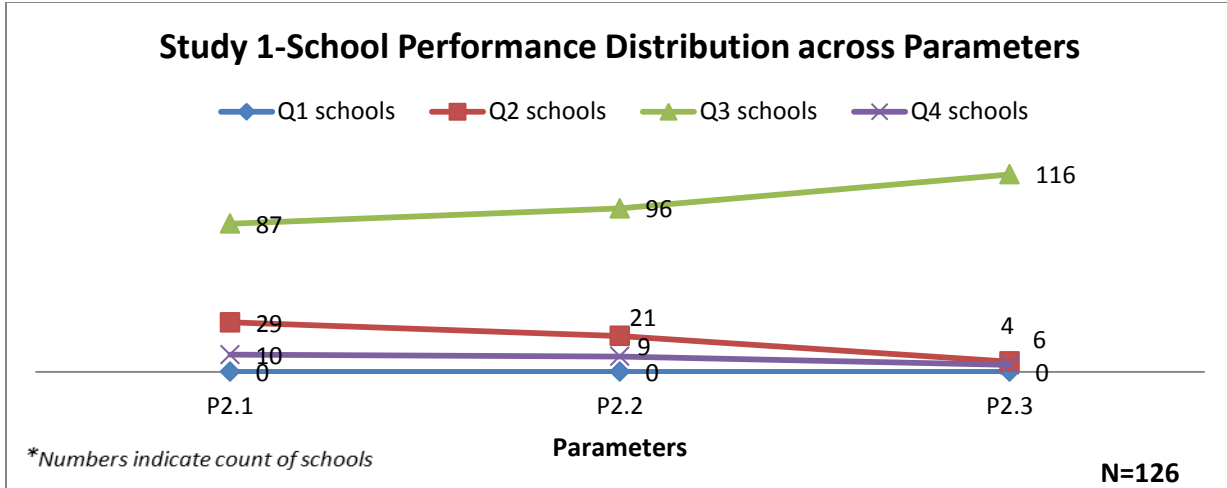


Fig: Study 2- School Performance Distribution across Student Outcomes

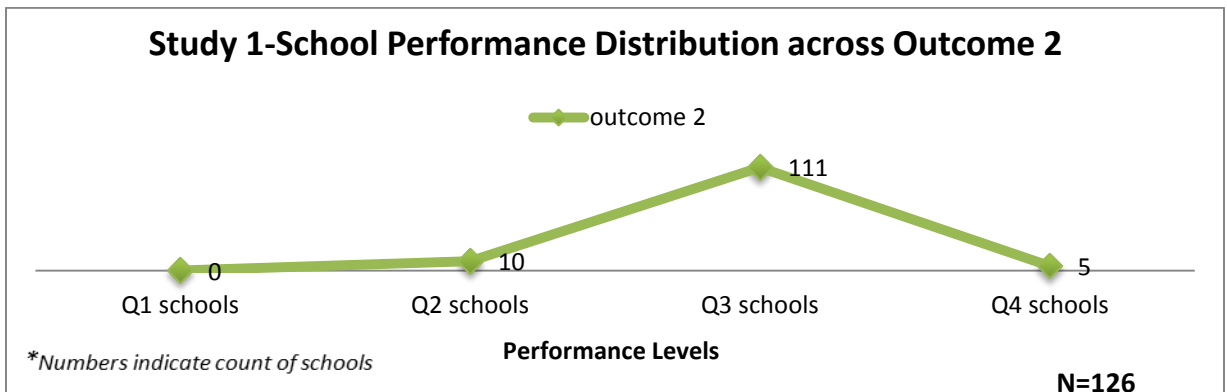
**C. Study 1 & 2: School Performance distribution across Parameters and Outcomes**

The charts below represent the number of schools falling under each performance category from Q1 to Q4 for all the parameters and outcomes, each for Study 1 & 2. At the classroom parameter level (see figure below), maximum schools perform at Q3 for all the three class-level parameters in study 1 with no schools in the lowest performance category. Also, there are very few schools performing at the highest level.



**Fig: Study 1- School Performance Distribution across Parameters**

The figure below shows that the class-level outcome ( Outcome 2) for study 1 has maximum schools performing at Q3 with negligible schools at Q2 or Q4. This outcome has no school in the lowest category for study 1.



**Fig: Study 1- School Performance Distribution across Outcome 2**

The figure below shows that for school-level parameters 1.1 to 1.3 for study 2, the schools are mostly at Q2. There are negligible schools at Q4 for any of the parameters. Similarly, except for P1.2, other parameters have very few schools in the lowest category.



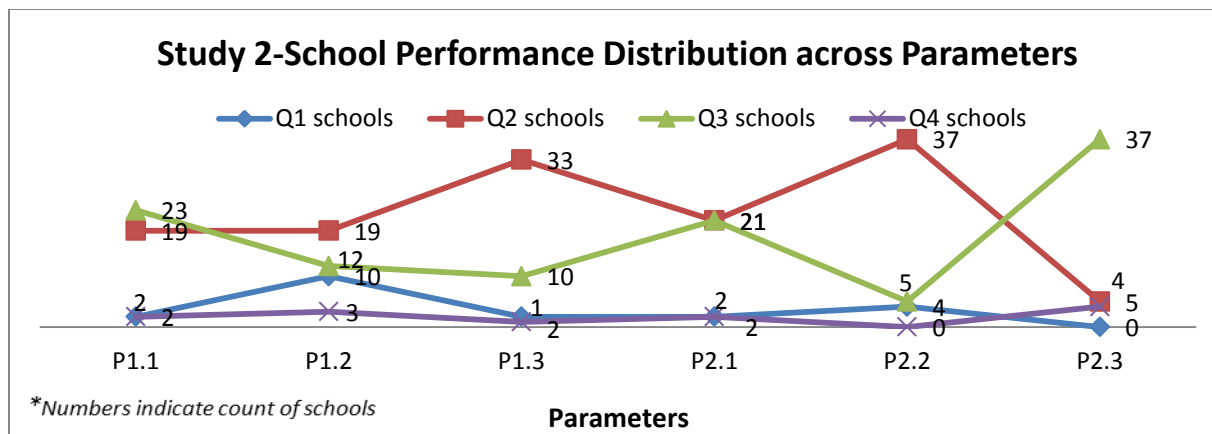


Fig: Study 2-School Performance Distribution across Parameters

The figure below shows that for the school-related outcome 1 in study 2, majority of the schools are performing at Q2 while for the class-level outcome 2, schools are mostly distributed between performance levels Q2 and Q3.

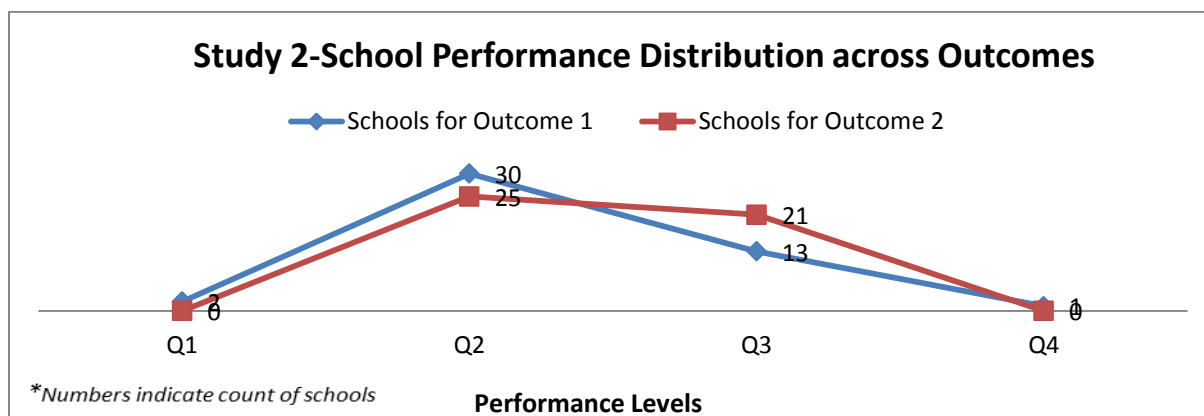


Fig: Study 2- School Performance Distribution across Outcomes

### Study 1 vs. Study 2: Comparative Analysis based on Student Evaluation

In both the studies, out of ten students who were sampled for evaluation from every school, four students from Grades 3 and 4 were such that they were commonly evaluated in three different ways - teacher's report on them, their parents reporting on them and the interviews conducted with them by the FI team them. Several hypotheses were formulated and the following findings have emerged. Comparative analysis by using t test was done for study 1 and study 2.

S.NO	Study 1	Study 2	Source of findings	Findings for Mean effect of MV on students
1	Grade 3	Grade 3	parent's report	Significantly high in Study 1 than study 2
2	Grade 3	Grade 3	student's interview	Significantly high in Study 1 than study 2
3	Grade 3	Grade 3	teacher's report	Significantly high in Study 1 than study 2
4	Grade 3	Grade 3	parent's report, student's interview	Significantly high in Study 1 than study 2

			and teacher's report	
5	Grade 4	Grade 4	parent's report	Significantly high in Study 1 than study 2
6	Grade 4	Grade 4	student's interview	Significantly high in Study 1 than study 2
7	Grade 4	Grade 4	teacher's report	No difference between two studies
8	Grade 4	Grade 4	parent's report, student's interview and teacher's report	Significantly high in Study 1 than study 2
9	Grades 3 &4	Grades 3 &4	parent's report	Significantly high in Study 1 than study 2
10	Grades 3 &4	Grades 3 &4	student's interview	Significantly high in Study 1 than study 2
11	Grades 3 &4	Grades 3 &4	teacher's report	No difference between two studies
12	Grades 3 &4	Grades 3 &4	parent's report, student's interview and teacher's report	Significantly high in Study 1 than study 2

TABLE 5: MEAN EFFECT OF MV-STUDY 1 VS. STUDY 2

### Study 1: Grade 3 vs. Grade 4- Comparative Analysis based on Student Evaluation

The comparative analyses within study 1 were carried out by using t tests. The hypotheses were tested for non-equality and then for direction of the difference. The results are stated below:

S.NO	Study 1		Source of findings	Findings for Mean effect of MV on students
1	Grade 3	Grade 4	parent's report	Significantly high for Grade 3 than Grade 4
2	Grade 3	Grade 4	student's interview	Significantly high for Grade 3 than Grade 4
3	Grade 3	Grade 4	teacher's report	Significantly high for Grade 4 than Grade 3
4	Grade 3	Grade 4	parent's report, student's interview and teacher's report	Significantly high for Grade 3 than Grade 4

TABLE 6: MEAN EFFECT OF MV WITHIN STUDY 1-GRADE 3 VS. GRADE 4

### Study 1: Comparative Analysis based on Period of Intervention

As stated in the section on sampling, the study 1 schools belonged to two categories- one with a longer duration of MV (period of intervention between 1.5 to 2 years) and a shorter duration of intervention (period of intervention between 1 to 1.25 years). The results for these two groups are stated below:

S.NO	Study 1 Period of Intervention		Source of findings	Findings for Mean effect of MV on students
1	Longer (1.5 to 2 years)	Shorter (1 to 1.25 years)	parent's report	No difference based on duration
2	Longer (1.5 to 2 years)	Shorter (1 to 1.25 years)	student's interview	Significantly high for longer duration than shorter duration of intervention
3	Longer (1.5 to 2 years)	Shorter (1 to 1.25 years)	teacher's report	Significantly high for longer duration

	years)	1.25 years)		than shorter duration of intervention
4	Longer (1.5 to 2 years)	Shorter (1 to 1.25 years)	parent's report, student's interview and teacher's report	Significantly high for longer duration than shorter duration of intervention

**TABLE 7: MEAN EFFECT OF MV WITHIN STUDY 1 BASED ON PERIOD OF INTERVENTION**

### **Study1: Comparative Analysis- Other Demographics**

Comparative analyses were carried out by t test for Rural Vs Urban, Boys Vs Girls and Tribal Vs Non-tribal categories.

1. The mean effect of MV is significantly high for rural students than urban students.
2. The mean effect of MV is significantly high for girls than boys.
3. The mean effect of MV is significantly high for non-tribal students than the tribal students.

## **5. RISKS, MITIGATION MEASURES AND LIMITATIONS OF THE STUDY**

The nature of the programme, the stakeholders involved therein and a few other factors posed certain limitations on the study. The evaluation study has tried to overcome/minimize certain risks that were anticipated, by way of processes and statistical techniques. Given below are the risks and limitations that have been acknowledged while inferring the results.

- i. Non-availability of baseline data because of change in the M&E framework- Though ,a quasi-experimental design was adopted in Maharashtra by identifying schools that served as a control group, the same could not be replicated in Goa since all Goa government primary schools were already covered under MV.
- ii. MV programme involves large number of stakeholders in which different varieties are seen- Gender, geographical area, types, and categories of members and so on. Also, a single type of tool in the evaluation of this program would have given biased results. The study has tried to reach every stratum, stakeholder type through the sampling methodology and a variety of tools for data collection.
- iii. Sampling size is not as large as required. Increasing the number of FIs or increasing the days of data collection could have been one of the options but this could have brought in another type of risk like losing inter- observer reliability or selecting the FIS who do not have enough understanding of the programme.
- iv. Values come under the affective domain and measurement of affective domain has always been a challenging field for psychometry. This can be minimized to some extent by better designing of tools and training to the FIs. Tool reliability, was established, although at a later stage. Tool face and construct validity was taken care of, by involvement of experts. Inter-observer reliability was maintained and improved by field training and support from seniors. It was also ascertained during the data analysis by statistical techniques.
- v. Answering in the desired direction (social desirability) was recognized as one of the threats. Some statistical measures were used to study the extent of socially desirable answers in the collected data. It has been observed that study is fair and consistent.

- vi. The study being evaluative in nature faces the risk of prototype answers. It has also been checked by statistical techniques, whether all the sample units are giving similar answers and it is found that because of the fair nature of tools and FI skills this risk was reduced to a large extent.

## 6. CONCLUSIONS/ FEEDBACK

- i. In educational evaluation, studies carried out in the domain of social sciences have a general tendency to choose desirable option. The calculation of mode for both the studies shows that this challenging tendency has been overcome. This affirms that the internal programmatic evaluation is fair, non-manipulative, and consistent in sampling, construction, and administration of tools, field investigators who were a part of the program, data processing, and decisions regarding statistical techniques.
- ii. Program interventions with respect to program outcome 1 need to be strengthened.
- iii. Teachers' performance level as expected in program outcome 2, have ample room to improve upon.
- iv. Since the inception of this evaluation study, M&E improvement was also targeted and achieved to a good extent. Yet, further improvement in the following aspects is recommended:
  - 1) Training schedule of FIs should be conducted in advance rather than conducting at the 11<sup>th</sup> hour.
  - 2) Analysis done on FI's skills and limitations should be considered in future for training and selection of FIs.
  - 3) Analytical results on administration of tools should be used to strengthen training of FIs.
  - 4) App design should go parallel with the analytical needs. App should be based on and should strictly follow the analytical framework. M&E head, statistician shall be closely involved in app design process.
  - 5) A deep understanding of data is essential before data conversion and data handing. The team involved should be oriented and monitored for the same.
  - 6) Qualitative analysis is a weak aspect of the analytical process in this study. Deep understanding of theory of qualitative analysis and skills are essential. This helps in triangulation of quantitative and qualitative analysis and interpretation.