

# REPORT

## IMPACT ASSESSMENT OF PROJECT ITEI

April 2, 2018

Submitted by

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Submitted to

**Tech**  
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FOUNDATION

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## EXECUTIVE SUMMARY

Tech Mahindra Foundation's flagship initiative, In-service Teacher Education Institute (ITEI) has been working in collaboration with East Delhi Municipal Corporation (EDMC) since 2013 to enhance the capacities of teachers, principals, school inspectors and other stakeholders in EDMC. Through the ITEI, experienced subject matter experts provide subject enrichment in-service trainings in Hindi, English, Mathematics and Environmental Studies (EVS) among other subjects and topics to the EDMC primary school teachers and principals.

The training programme offered by ITEI aims to provide quality education to promote holistic development among children through by strengthening capacities of teachers both by enhancing subject knowledge and pedagogical skills. The purpose of the training is to bring about an effective change in the teaching skills of Primary School Teachers and management skills of the Principals and other stakeholders. The idea behind the initiative is to enable teachers to not only impart subject knowledge but also to build their capacities to achieve the objective of holistic development of the child.

With this in view, five-day programs concentrating on basic concepts are being organized. In the programme, participatory techniques are applied wherein discussion, demonstration, individual / pair/ group activities are organized. During training sessions, Power Point Presentations, Videos and variety of Teaching Learning Materials (TLM) are used to clarify the concepts and demonstrate the appropriate methodology. Teachers are given 'Hands on Experience' of using TLM. Experts from other organizations are also invited on regular basis. The Team also uses modern learning tools such as Theatre effectively in the workshops to equip the teachers with 21 century teaching skills focusing on improvement in the learning ability of students through activity based teaching including the self-comprehension wherein the teachers play only a supporting role.

The goal of this research study is to assess the effectiveness of ITEI in supporting children to reach their grade proficiency level and improving the effectiveness of government school teachers' so as to enhance the overall educational outcomes of children in EDMC schools of Delhi. In the above light, the main objective of the study is impact evaluation the capacity building training provided by ITEI to the teachers and principals. We would like to break it down into the following:

1. Assess the impact of the capacity building programme in last four years
2. Understand the stated changes in the teaching and learning practices of the teachers
3. Identify and document case studies
4. To provide recommendations for future implementations

The report finds that:

- 87% of treatment (exposed to trainings at ITEI) teachers conclusively state that their skills have been positively impacted after taking the ITEI training. 58% teachers state that they have become better at pedagogy, 40% teachers state that they feel more confident and 35% say that they are able to manage the classrooms better.
- Every school has examples of good teachers or 'model teachers' who are emulated by other teachers. In all schools where observations and in-depth interviews were conducted, we found that these 'model teachers' were the ones trained at ITEI.





# 1. CONTEXT



## **1.1 BACKGROUND**

Tech Mahindra Foundation commissioned the assessment of its flagship initiative, In-service Teacher Education Institute (ITEI) which has been working in collaboration with East Delhi Municipal Corporation (EDMC) since 2013 to enhance the capacities of teachers, principals, school inspectors and other stakeholders in EDMC. Through the ITEI, experienced subject matter experts provide subject enrichment in-service trainings in Hindi, English, Mathematics and Environmental Studies (EVS) among other subjects and topics to the EDMC primary school teachers and principals.

The training programme offered by ITEI aims to provide quality education to promote holistic development among children through by strengthening capacities of teachers both by enhancing subject knowledge and pedagogical skills. The main objectives of ITEI are:

- Enhancing skills of in-service teachers and keep them abreast with modern concepts of pedagogy
- Improve motivation of teachers and encourage participatory learning
- Improvement in learning abilities of children
- Creating Happier Classrooms

The sampling universe consists of 4272 teachers of classes 1 to 5 from EDMC primary schools and 742 principals since 2013. The number of teachers trained has been increasing every year with 232 participants in year 2013-14, 1522 participants in year 2014-15, 1519 participants in year 2015-16, 1741 participants in 2016-17.

In most cases the Principals select teachers from their schools to receive the training. In some cases, the teachers also nominate themselves for the trainings before the principals. The selected teachers are supposed to receive a 5-day training for each subject. The Foundation would like the teachers to attend all subject trainings as each teacher in the primary school teaches all subjects. However, due to paucity of time and resources in the schools, it is not always possible for teachers to make the time to attend trainings in all subjects.

The goal of this research study is to assess the effectiveness of the Tech Mahindra Foundation-ITEI in supporting children to reach their grade proficiency level and improving the effectiveness of government school teachers' so as to enhance the overall educational outcomes of children in EDMC schools of Delhi.

In the above light, the main objective of the study is impact evaluation the capacity building training provided by ITEI to the teachers and principals. We would like to break it down into the following:

## 1.2 OBJECTIVES OF THE PROGRAMME

The study had four main objectives:

5. Assess the impact of the capacity building programme in last four years
6. Understand the stated changes in the teaching and learning practices of the teachers
7. Identify and document case studies
8. To provide recommendations for future implementations

## 1.3 CONSIDERATIONS AFFECTING RESEARCH DESIGN:

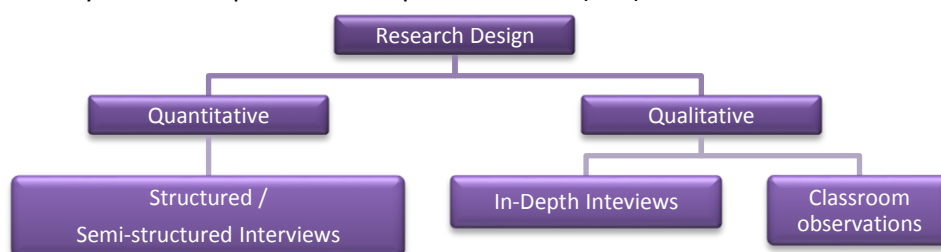
**Consent:** All the respondents were requested to participate in the survey and were asked to state their free will to participate in the study. To improve the chances of their participation, we requested ITEI to provide us an authority letter to conduct the survey along with a letter requesting the respondents to participate – showing which, our interviewers requested them to participate. The interviews were conducted in school compound/ building.

**Random selection of respondent:** It was important to ensure no bias in selection of the school / teachers. Hence the schools were randomly selected from the list of all the applicable schools (shared by Tech Mahindra Foundation) using PPS (Probability Proportionated to Size) method. The teachers, based on their availability (including principals), from the selected schools were requested to participate in the study.

**Location of interview:** Due to the extensive spread of the target groups across multiple schools in EDMC, we proposed to conduct interviews in the school premises, during class breaks, post school sessions. However, it is very important for the researchers to be unbiased and so the interviewee was taken to a secluded premise of the school at the time of the interview. We aimed to have a quiet place for the interview with no biases.

**Observations:** We also conducted unbiased and unobtrusive observations of the selected classes / sessions of teachers who have received the training to get a third-party view on the trainings. A researcher / moderator and team leaders of the interviewers from Kantar Public visited the classrooms with an observation recording sheet. These observations were also carried out with control group to ensure that there's some comparison as well. These observations happened in the same schools that were being covered for the teachers' interviews.

While, quantitative component helps in arriving at the empirical evidence of the impact made, qualitative study helps in understanding the nature and reason of such impact. Therefore, the study had a mix of quantitative and qualitative methods. Component A is the Quantitative study and Component B is the Qualitative study which comprises of In Depth interviews (IDIs) and Observations.





## **Component A: Quantitative**

The Quantitative data collection was done with the help of structured / semi-structured tools. Kantar Public in collaboration with the Tech Mahindra Foundation prepared a structured questionnaire for the field survey. The questionnaire was designed to capture close-end responses through multiple choice questions – to make the interpretation of questions similar across all the states, for a better control over fieldwork and for more meaningful data analysis of quantitative phase. The Quantitative data collection happened with

1. Trained School Teachers
2. Trained School Principals

The length of interview was no longer than 25-30 minutes.

## **Component B1: In-Depth Interviews**

Qualitative data collection methods facilitate understanding of certain aspects which are not captured through the quantitative study. Dimensions such as key barriers or triggers towards efficient flow of information and training of the trainers can be better captured through qualitative study. These also explore opinions and feelings of the respondents pertaining to various issues and concerns related to trainings. Qualitative aspect of the study comprised of the in-depth interviews with

1. Trained School Teachers (10)
2. Trained School Principals (3)
3. School Inspectors (2)
4. EDMC Middle management (5)
5. Tech Mahindra CEO (1)
6. Tech Mahindra Foundation and ITEI team (6)

## **Component B2: Observations**

Field observations are an integral part of the third-party evaluation. Kantar Public undertook class observation exercises. We proposed to do 8 observations each of Hindi, English, Mathematics and Environmental Studies (EVS) with classes of ITEI trained teachers and 2 observations each for control classes (teacher not trained at ITEI) for these subjects. In all, we proposed to conduct 40 observations across all selected school. Each observation will be equal to one period (30 mins). However, we could exceed the sample size to observe 45 ITEI trained teachers' classrooms and 9 ITEI untrained teachers' classroom.

## 1.4 INFORMATION AREAS

The quantitative component is to cover the end-beneficiaries of the programme (school teachers and principals) while the qualitative component covers both the programme stakeholders and the programme beneficiaries (Trainers, school principals, teachers, school trustees and teachers).

The areas of information for each component are as follows:

### Component A: Quantitative

The quantitative tools would be developed based on the component/ information shared by the trainers, along with the basic information listed below:

1. Profile of the teachers
2. Education/Vocation of the teachers
3. Feedback of the training received
4. Application of the training received (actual behaviour)
5. Expected results of the trainings attended

### Component B: Qualitative

The research involved conducting In-depth interviews with the teachers, trainers, principals, school inspectors, Assistant Directors of EDMC (hereafter EDMC officials) and Tech Mahindra Foundation Team. The interviews with them would be conducted to understand –

1. The end-objectives of these trainings
2. Rationale behind the methods of conducting the training
3. Expectations from training and were these met
4. Response post the trainings – shortcomings and challenges faced
5. Recommendations for future
6. White-spaces, if any

## 1.5 RESEARCH METHODOLOGY

### Rationale of sample size of quantitative sample

The sample size (n) required to assess change is computed based on the following formula and parameters:

$$n = Deff \times \frac{z^2 \times (p) \times (1 - p)}{m^2}$$

Where,

n = required sample size;

z = confidence level at 95% (standard value of 1.96)

p = estimated level of key indicators to be monitored (we have assumed a level of 50% for the indicator as any level below or above the same can be read with better accuracy)

Deff = design effect (considered at 1.0 for multistage sampling)

Based on the above assumptions (constant), the sample size can be read at multiple margin of errors.

- For Intervention Teacher/Principals: at the city level the sample size is 340 can be read with MoE of  $\pm 5.3\%$
- For Control Teacher/Principals: at the city level the sample size is 110 can be read with MoE of  $\pm 9.3\%$

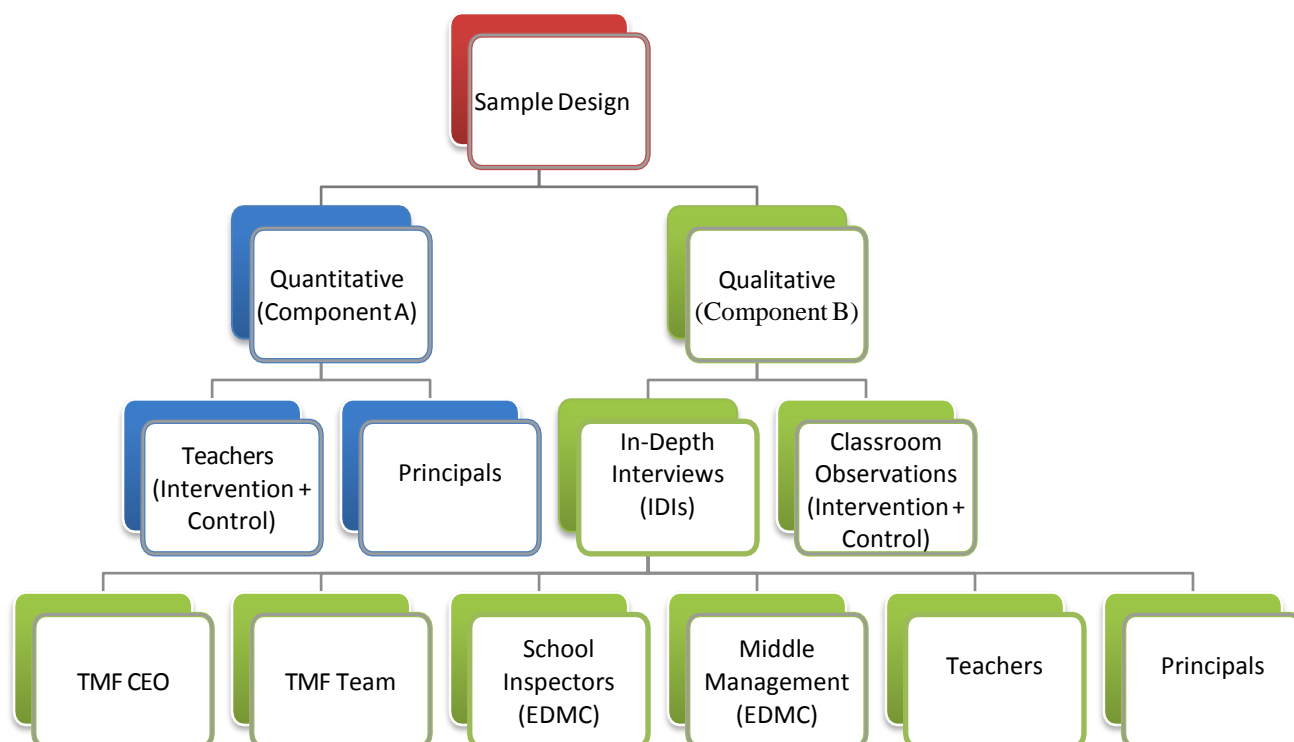


Figure 1 Sample Design

Based on the rational for the study the sample size distribution across zones is given below:

Respondent Category	Tool	Sample Size	Remarks
<b>Quantitative</b>			
Principals	Quant Survey	40	About 10% of schools
Teachers	Quant Survey	496	~75:25 ratio for Teachers Trained at ITEI : Control
<b>Qualitative (IDIs)</b>			
Principals	In-Depth Interview	3	For case study
Teachers	In-Depth Interview	10	For case study
TMF – CEO	In-Depth Interview	1	To understand the vision and context of the intervention
TMF – team	In-Depth Interview	6	One with each subject specialist
School inspectors – EDMC	In-Depth Interview	2	From EDMC
Middle management - EDMC	In-Depth Interview	5	From EDMC
<b>Observations</b>			
Observations of running classes	Classroom Observations	54	Compare control and treatment group

Figure 2 Sample Size and distribution

The achieved sample size was greater than desired.

## 1.6 INTRODUCTION TO THE EDUCATION LANDSCAPE

Many studies have shown that education is vital both for economic growth of a nation, as well as for allowing individual citizens to benefit from this growth through improved employment outcomes (Muralidharan, 2013). A study by New Leaders shows that the effectiveness of the school principal – just one person – accounts for 25% of the impact that schools have on student learning (Marzano, 2005). Additionally, much research has shown that it is almost impossible to have a high-performing school, particularly in underserved communities, without strong leadership, making it the key lever to transforming the education system in India.

Research suggests that there are three main drivers of change of education quality: (1) supply-side capability interventions that operate through the provision of physical and human resources, and learning materials; (2) policies that through incentives seek to influence behavior and intertemporal preferences of teachers, households, and students; (3) bottom-up and top-down participatory and community management interventions, which operate through decentralization reforms, knowledge diffusion, and increased community participation in the management of education systems. (Masino, S. and Niño-Zarazúa, M., 2016. What works to improve the quality of student learning in developing countries? *International Journal of Educational Development*, 48, pp.53-65.) Overall, their findings suggest that student learning outcomes are better served if two or more drivers of change are combined such as resources coupled with community participation or incentives that shift preferences and behaviors of those imparting education and those receiving it.

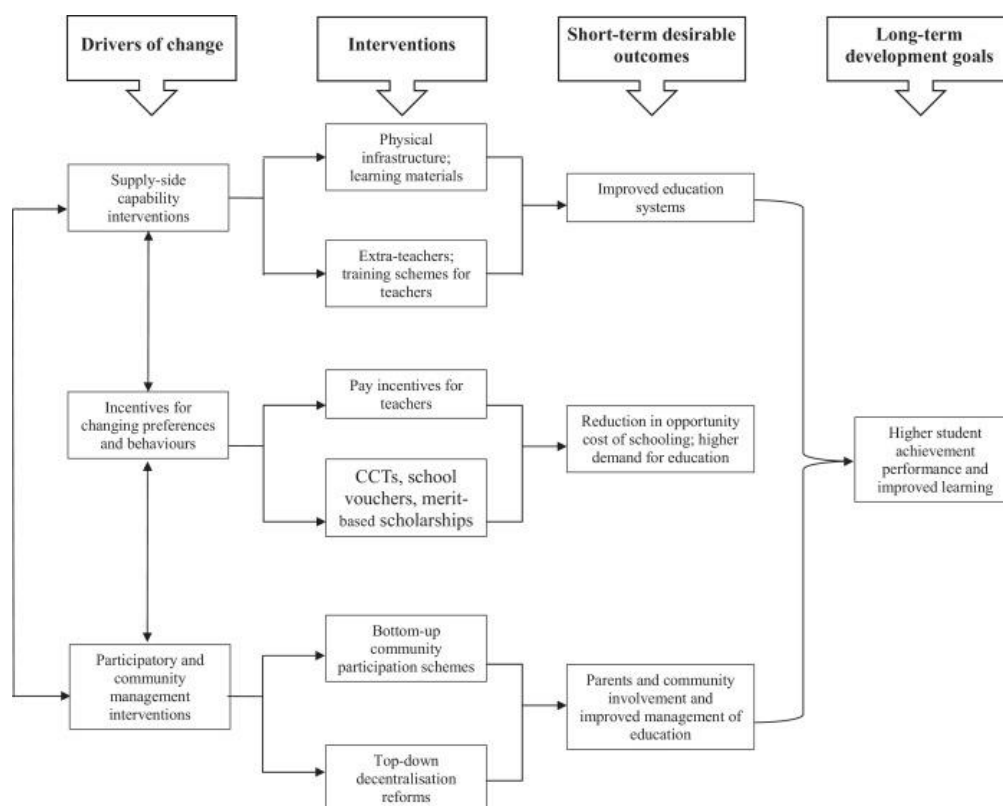


Figure 3 Drivers of Change

## 1.7 THE ROLE AND NEED OF TRAININGS

The education sector is experiencing a fast-changing landscape today and what Delhi is experiencing is phenomenal. Empirical evidence of the last two-three years shows that schools in Delhi have bettered their performance by leaps. However, it is impossible to understate the widening gap between the students coming out different schools within the same city. This gap is largely problematic because children from all kinds of schools aspire to join a common career pool however their skill sets are starkly different and fraught with seepages.

It is, therefore, imperative for teachers, principals and other education functionaries to provide the best kind of education across schools, regardless of the functionary/management they are under. Burgeoning student numbers in small classes, skewed teacher-student ratios, resource crunch or even non-literate parents should not come in the way of bringing students from all regions and walks of life at par with each other. In this regard, it is important that teachers value and understand their role. It is not wrong to say that ultimately it is a teacher's competence that impacts students learning outcomes the most. To prepare teachers grasp on the emerging trends in education and help them upgrade their knowledge and skills, Tech Mahindra Foundation has undertaken the responsibility of designing and developing an ongoing and a comprehensive In-service Teacher Training Program keeping in view the learners in EDMC schools.

The purpose of the training is to bring about an effective change in the teaching skills of Primary School Teachers and management skills of the Principals and other stakeholders. The idea behind the initiative is to enable teachers to not only impart subject knowledge but also to build their capacities to achieve the objective of holistic development of the child.

In India the RTE Act among other norms in Section 29 states the following:

1. Learning through activities, discovery and exploration in a child friendly and child-centered manner.
2. Medium of instructions shall, as far as practicable be in child's mother tongue.
3. Making the child free of fear, trauma and anxiety and helping the child to express freely.
4. Comprehensive and continuous evaluation of child's undertaking of knowledge and his or her ability to apply the same.

The guiding principles of NCF, 2005 - adopted as Curriculum Framework at National Level under RTE Act states the following norms:

1. Connecting knowledge to outside the school.
2. Ensuring that learning shift away from rote methods.
3. Enriching the curricular so that it goes beyond textbooks.
4. Making examination more flexible and integrating them with classroom life.
5. Nurturing and overriding identity informed by caring concerns within the democratic quality of the country.

Keeping in with the fact that the teachers are responsible to teach all classes from I to V in rotation, the programme has designed its content and methodology along with activities to suit the requirements of the teachers. With this in view, five-day programs concentrating on basic concepts are being organized. In the programme, participatory techniques are applied wherein discussion, demonstration, individual / pair/ group activities are organized. During training sessions, Power Point Presentations, Videos and variety of Teaching Learning Materials (TLM) are used to clarify the concepts and demonstrate the appropriate methodology. Teachers are given 'Hands on Experience' of using TLM. Experts from other

organizations are also invited on regular basis. The Team also uses modern learning tools such as Theatre effectively in the workshops to equip the teachers with 21 century teaching skills focusing on improvement in the learning ability of students through activity based teaching including the self-comprehension wherein the teachers play only a supporting role.

*“Even if children have a nice environment, good teaching environment, toys, a playground and all the rest of that, the learning happens within the classroom and it’s the quality of teaching that ensures that the child learns, so there is nothing that will undervalue the teacher, or nothing that can even replace the teacher” ~Shikhshaantar, CEO.*

The impact areas of the trainings can essentially be categories in the following:

- i. Creating acceptability towards trainings in the minds of the teachers.
- ii. Improving the conceptual clarity and self-confidence of the teachers.
- iii. Improving the classroom delivery of the teachers.
- iv. Improve the students’ learning outcomes.

## **1.8 ON GROUND CHALLENGES DURING RESEARCH**

1. Though the surveyed, interviewed and observed groups are called treatment and control, none of teachers are purely control as they have some degree of exposure to the treatment from being in the same school vicinity. And hence both groups of teachers should be looked at as exposed and unexposed.
2. Also, as understood from some of the qualitative interview the exposed group is more aware of the judgement parameters and hence may rate themselves more conservatively.
3. Answers on attitude and practice are self- reported by teachers. The self-claim of the teachers cannot be commented upon.
4. The RTE and NCF state certain norms for classroom delivery. These norms become buzz words that are used at/on several trainings such as DIET, SMC, SSA, etc. attended by the teachers. Therefore, teacher may be able to claim practicing certain teaching methods without putting them to use.
5. According to the principals, teachers enjoy the ITEI trainings; come back and say they have learned something from the trainers. This creates curiosity among other teachers and the desire to learn from the teachers trained at ITEI.
6. Teacher and Principals both agree that creative teaching methods impress the students making the teachers want to proactively use creative methods even without receiving trainings.
7. The principals state that some teachers become an example of how teaching can be done differently. That increases the propensity of emulation by the control teachers.
8. Therefore, training have a trickledown effect even without the treatment being received by all participants.

## 2. FINDINGS - QUALITATIVE



## **2.1 EDUCATION IN THE SCHOOLS OF EDMC – SCHOOL INSPECTORS**

1. The IDIs with the school inspectors of the EDMC underline that the schooling system isn't meant to be mechanical, a teacher is supposed to gauge the needs of their class and facilitate accordingly. The two inspectors we interviewed felt that teachers and schools should be kept away from all non-academic work. This they suppose will allow the teachers the much-needed time to plan and prepare for classes.
2. However, the freedom to explore styles and methods of teaching, alone may not return better output if the teachers in the MCD themselves don't prefer change or allow it to occur.
3. The EDMC is concentrated with more families belonging to the lower economic strata. All the family members have to earn, so education is not a priority. Children also migrate when their parents get seasonal work - its difficulty to track their progress.
4. Also, Shahadra is a densely populated area and there is no land space to build new schools. Existing schools don't have the capacity to hold more children. There are even cases where there are about 7000 children in one school – Therefore, either the capacity of the existing schools must be extended or new schools have to be built.
5. Presently, the economic crunch faced by the schools is even making provision of basic services difficult viz. medical aid, printing, teacher's salaries, school security, infrastructure, technological advancements.
6. It is also the case, that the government is providing benefits which are reaching the schools, for instance infrastructure, however nothing is being utilised to its full extent.
7. Teachers are responsible even for getting the Aadhar Card and bank account linked for every child so that the child can receive the money given to them from the govt. This is also teacher's responsibility.
8. The teacher is the clerk, computer operator, and the admin. This leaves them with no motivation.

## **2.2 EDUCATION IN THE SCHOOLS OF EDMC – EDMC OFFICIALS**

1. The Assistant Director at EDMC states that it is not true that EDMC has only migrant population. All MCD schools across Delhi have migrant population.
2. Standard of exposure in MCD is as good as public schools- there are sports, science fair etc. But the level of academics may be a little low- although the teachers are qualified and trained, children are not upto the level they should be at.

## **2.3 ROLE OF A PRIMARY SCHOOL TEACHER – SCHOOL INSPECTORS**

1. The school inspectors feel that other than being well qualified, a primary school teacher must have the ability to adapt to new skills and concepts and have the ability to problem solve. There should be a need based teaching pattern.
2. Teacher is the best person to assess the need of the class and prepare TLM accordingly and the use of technology is important in this. At EDMC the teachers are attending regular seminars that keep them abreast with latest research in education but short-term courses are not useful. The trainings should be a long term- 6-month programme.



## 2.4 ROLE OF A PRIMARY SCHOOL TEACHER – EDMC OFFICIALS

1. The EDMC officials feel that the teacher should be able to consider their students as their own children. This would help them to empathise with the children and understand their mindset in a better way and hence, handle them in a better way.
2. Patience, good speaking skills, should have the ability to develop children's skills.
3. The officials feel that teachers at the primary level should be technically sound and have knowledge of child psychology.
4. They suggest that schools should create an environment that will make children want to come to school. *"Teachers must teach them, make them laugh, get them involved in different activities, feed them and create an atmosphere conducive to learning. Then there will be development in the child."*

## 2.5 CONTRIBUTION OF ITEI IN CREATING AN IDEAL SCHOOL ENVIRONMENT – SCHOOL INSPECTORS

1. The school inspectors believe ITEI has good trainers and new concepts and new ways of engaging the class are taught.
2. *"The teachers have learnt new ways in which a concept can be taught. This has taken away the staleness of classroom teaching. This is having a bigger impact on children"*.
3. Teachers who are active and lively have adopted the newly taught strategies. *"The skills that they are teaching, if that is actually implemented on ground, then problems will start solving automatically. This is a long process; it is not a one-day process"*.
4. When children become interested and excited about a lesson their attitude towards the teacher and the subject changes.
5. In schools under the Delhi government the teachers are trained through DIET. In the case of MCD, the teachers join with an initial training, but they have to be given training from time to time for up gradation and making them aware of the new teaching techniques and modules that evolve from time to time. ITEI is helpful in this regard. *"One aspect that came up because of Shikshaantar is that teachers can develop their own teaching techniques and modules. This program launched by Tech Mahindra (Foundation) has been very helpful in improvising the way of teaching and has helped the teachers in improving their skill set"*.
6. *"Previously we had nothing. We didn't even have a training institute. Once (Tech Mahindra Foundation) Mahindra joined up with us they helped us a lot, put in a lot of effort and established a very good training institute here."*
7. *"Training cannot teach something new in the subject but it can definitely teach a new way of thinking, Tech Mahindra (ITEI) keeps updating their modules, there is no stagnancy in their work- if there's any institute that is really progressive and believes in flexibility, then definitely it is the one run by Tech Mahindra (Foundation)."*

## 2.6 CONTRIBUTION OF ITEI IN CREATING AN IDEAL SCHOOL ENVIRONMENT – EDMC OFFICIALS

1. The EDMC officials consider ITEI's trainings to be different from the regular training programs like DIET. They feel it involves practical methods of teaching, rather than the bookish and theoretical ways of teaching.
2. They point out that there have been instances where the teachers have actually incorporated their learnings from this program in the classrooms and have enabled children to have a different perspective on things and to make them things easy to understand for the children.

3. The EDMC officials state that they have noticed a change in how teachers teach now. There have been instances where the teachers have actually incorporated their leanings from this program in the classrooms and have enabled children to have a different perspective and learn easily.
4. According to the officials, at present, the classrooms have a healthy atmosphere. Children are encouraged for open discussions and keeping their point in front of the teachers. Even feedback is taken from the children, on the topic taught in the class.

## 2.7 CRITICAL GAPS IN THE SKILL SET OF TEACHERS AND HOW THE TRAININGS AT ITEI HAVE HELPED – TEACHERS AND PRINCIPALS

1. In her own words, a teacher says that *"In 1<sup>st</sup> and 2<sup>nd</sup> class, I feel that if the kid starts speaking (interacting), then he or she is not fearful and half the battle is won. Because if the kid is interacting with anybody, (in) whatever language he is comfortable with; he is interacting, able to tell you, explain (to) you the skills he learnt. Because teaching and writing and all we can do in (the) 3<sup>rd</sup>, 4<sup>th</sup>, (and the) 5<sup>th</sup> (class). We have 5 years to make them do it, but (the) first 2 years are more important to remove the fear in the child, then it is all done"*.
2. She vouches that a teacher should be friendly, should mix up, play with her young students and make her way in by giving them special attention if the need be. A teacher, according to her, should be able to make the child learn without the use of force. She believes that creativity is very important and that a teacher automatically becomes creative upon interacting with her students – and teaching-learning-material (TLM) comes in handy.
3. Like her the other teachers also echoed a similar sentiment about interacting with students in creative ways that are impressive to children.
4. Teachers also said that patience and compassion were qualities of critical importance.
5. Given the background of these children of EDMC schools, where most parents are non-literate and financially unsound, teachers must act as counsellors not only to the children but also to their parents. To handle children of such tender age and help them learn and understand, a teacher must have tact, techniques and teaching aids by her side.
6. Teachers are themselves motivated from learning new methods such as play-way from the trainings taken but think that there needs to be more sync between the teaching methods and the prescribed textbooks.
7. Teachers also feel the need to be tech savvy in-order to provide technology based learning in class. However, they are keen to learn more and new teaching aids and attend knowledge based trainings to help them improve the understanding of the students – some of the teachers point to TLM as a potential source of help.
8. Considering their opinion on the skills and qualities of a primary school teacher, they were asked what if and how TEI has impacted their own skills and qualities. Quoting a teacher on what she learned at the training, *"I am not from a Hindi background. I mean I can speak in the Hindi language but not as a teacher. I am from Science background. The grammar that is there (in Hindi), we can speak Hindi which is okay... but the pronunciation that is there has to be perfect while teaching. So then when I went to the Hindi seminar (training), we learned many things from there that this should be pronounced like this. I mean to say that from the seminar (ITEI- Hindi Training) I learned a lot. So far, I have not implemented anything but when I would again go for the 1<sup>st</sup> class then I would implement. But I have learned a lot in Hindi"*.
9. A few of the teachers said that the training acted as a refresher course and provided them with new teaching methods that are grounded in research.
10. A teacher who took training in Hindi said that aside of learning new ways to teach the subject, she also returned as a proud speaker of the language. T

11. These trainings break the monotony of the daily teaching schedules and provide them with the opportunity to do what they have been doing, a little differently.
  12. Since the teachers have to teach the same syllabi repeatedly, the trainings are not only a welcome change but also learnings alongside.
  13. A teacher claims that she has understood the importance of her job after taking the training at ITEI and now feels very good about what she's doing.
  14. Of the many other things at the training, a teacher says that she likes that they call resources from NCERT, never talk out of context, stick to the content and focus on how to teach young children.
  15. Upon comparing ITEI to other trainings the teachers feel that they have been able to receive more trainings since the duration of the training provided by ITEI is shorter.
  16. To quote a teacher *"Earlier training used to be for a long time, they used to be for 21 days or 15 days. But since Tech Mahindra has started the trainings, (it) is for five days only. It happens rather easily. To attend classes for 21 days is a problem, but not 5 days"*.
  17. They say that their way of teaching has become different. They say that they have been taught to do away with the old-fashioned way of teaching and instead teach with the use of games and activities.
  18. To indicate the quality of transactions taken place between the trainer and the teachers at ITEI, a teacher who has taken repeated trainings said that she is able to recall answers from her memory and improve her understanding of other subjects too.
  19. The teachers point out that a lacuna in the training that resonates with some teachers is the implementation of the methods learned at the training. Even as they were receptive to the idea of micro-teaching, they found it hard to practice.
  20. One of the teachers believed the children neither want to take the effort nor have the backing at home to go beyond the textbook.
  21. The teachers have been able to apply some techniques, which they have found to work in their classrooms. However, they also thought that some of the teaching techniques fell flat eg: Using an English word when teaching Hindi. The children forget the word or the spelling in a day or two. Teaching them Hindi in itself is hard, introducing English at the same time makes the learning harder.
  22. Principals' view of the matter is that the trainings received at ITEI have broken the monotony of classroom engagements. Teachers too are enjoying the trainings, they come back and say we have learned something from them. So other teachers get curious to attend the training.
  23. Principals state that *"earlier chapters were taught, question and answers were done and then that is it, the chapter is finished. Now the teachers are making questions out of it, they make it more interactive, instead of reading the chapter, the children learn through question and answers"*.
  24. Teachers have to teach all subjects when they may not be good at all subjects or have less motivation to teach some subject. So, having subject wise training at ITEI comes in handy, if someone did not study a particular subject during graduation.
  25. Most teachers and principals, who were interviewed agreed that the training is ideal in duration and thick on content- bridging the gaps, in their knowledge and its transparency before their students.
-

The Qualitative findings suggest, all the stakeholders who were interviewed collectively think that there is a common pool of skills that primary school teacher must have and the trainings provided by ITEI are honing. Below is a summary of these skills:

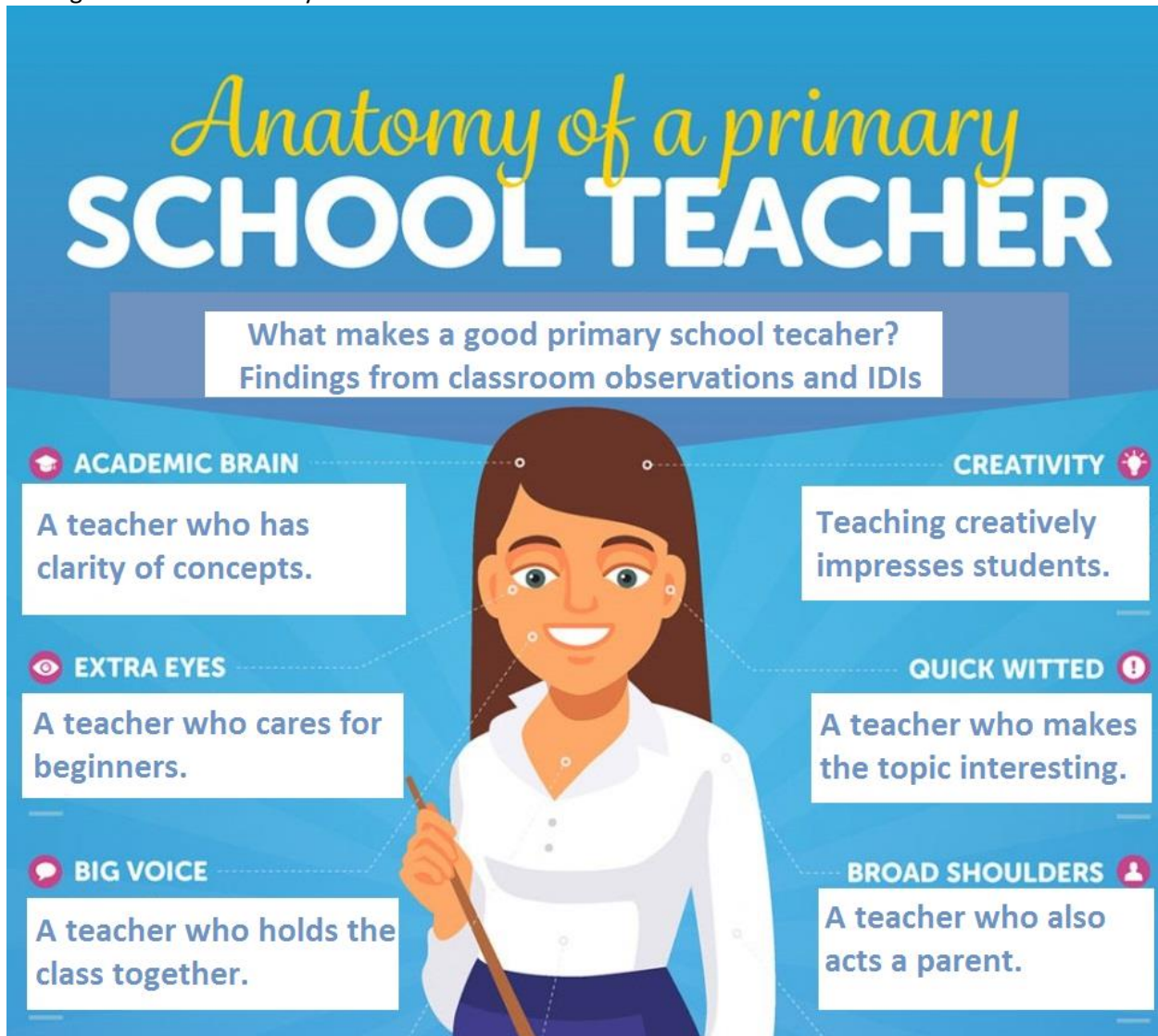


Figure 4 Qualities of a primary school teacher – Summary of Qualitative Findings

### 3. FINDINGS - QUANTITATIVE



To understand the difference created by the trainings we surveyed exposed group teachers and unexposed group teachers, trying to maintain similarity in their attributes such as classes taught, educational qualification and years of experience. Further the survey was segmented into 5 categories, viz:

- i. Perceived role and constraints of primary school teacher – To understand the gaps in critical skills
- ii. Importance attached to trainings – To understand the acceptability towards trainings
- iii. Classroom interactions of teachers - To understand applicability of trainings
- iv. Teaching styles and methods followed by teachers -To understand applicability of trainings
- v. Teachers experience at ITEI – To get a feedback on the trainings provided at ITEI.

*Table 1 Primary Roles of a Teacher (Unaided responses)*

Primary Roles of a teacher	Exposed Group	Unexposed Group	Total
Information dissemination	9.7%	9.5%	9.7%
Covering the syllabus	2.4%	1.6%	2.2%
Ensuring all students in the class score good marks	7.0%	6.3%	6.9%
Making students inquisitive/ imaginative	15.9%	19.8%	16.9%
Answering all the questions asked by students	6.5%	1.6%	5.2%
Making students disciplined/ well behaved	22.7%	27.0%	23.8%
Making good citizens out of students	9.2%	12.7%	10.1%
Helping students realise their potential/ talent	14.9%	11.1%	13.9%
Helping them become successful adults	3.5%	3.2%	3.4%
Providing social and emotional support to students	2.4%	1.6%	2.2%
Create a self-learning environment for the students	2.7%	2.4%	2.6%
Ensure students attain education until class 5	1.9%	2.4%	2.0%
Other (Specify)	1.1%	.8%	1.0%
No answer	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%

In terms of their own roles, we find that teachers belonging to both groups think alike. Most teachers think their primary responsibility is to make children well behaved and disciplined.

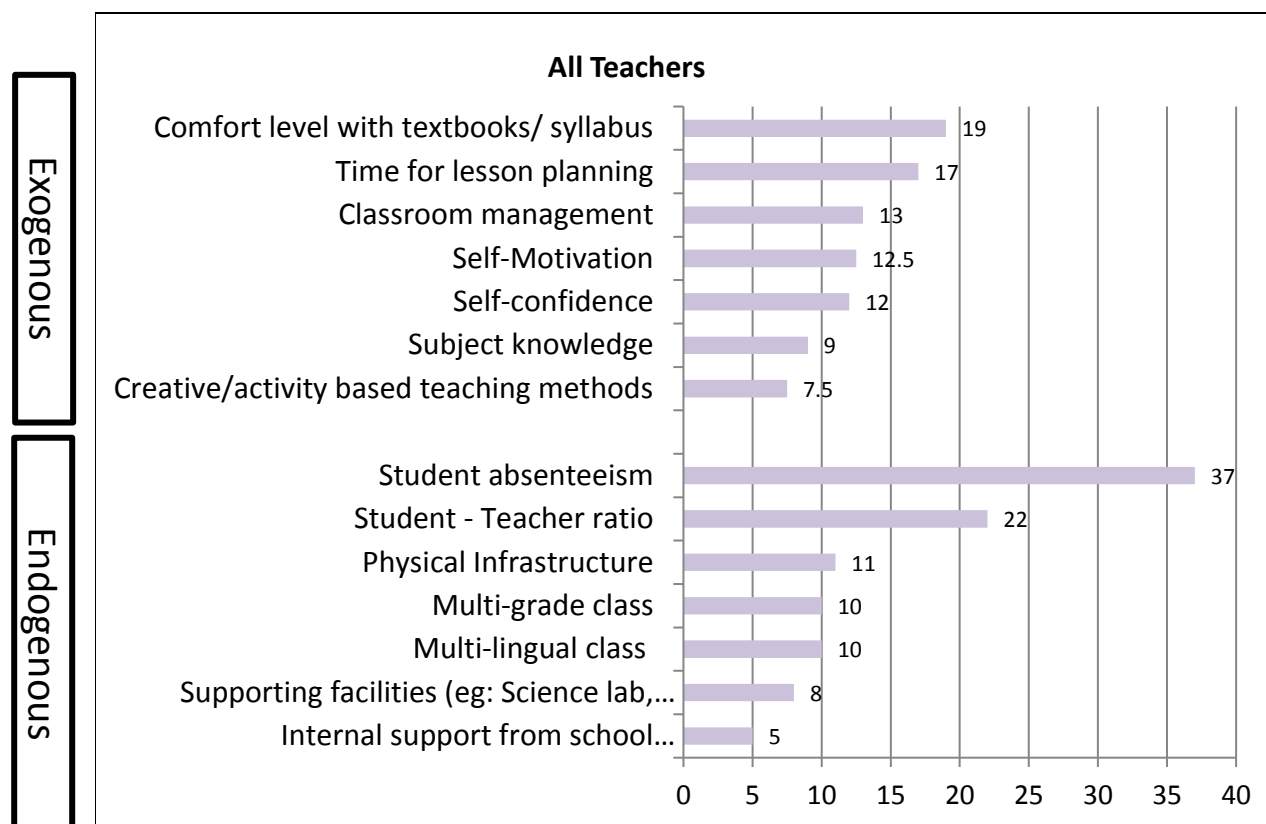


Figure 5 Constraints to teaching, Base: 496, All teachers

We find that the constraints faced by the teachers can be divided into two categories i.e Endogenous constraints and exogenous constraints. Endogenous constraints are those constraints that have an internal origin and exogenous constraints are those that have an external origin. We find that the teachers' biggest constraints are exogenously determined. However, of the ones they can tackle by themselves, teachers feel most constrained by comfort level with textbooks, time for lesson planning and classroom management. We also see self-motivation closely following classroom management.

Motivation Level	Treatment Group	Control Group
Base	370	126
1	1%	0.0%
2	0.5%	1%
3	6.5%	12%
4	31%	33%
5	61%	54%
Mean	4.5	4.4

Figure 6 Motivation Levels of teachers

Although teachers mention self-motivation as a constraint we see that the teachers rate their motivation levels at an average of 4.5 and 4.4 for the treatment and control group respectively. At this point it is imperative to note the contrast between the teachers view of their self-motivation and the principals view of their teachers' motivation levels as the principals have given the teachers a mean rating of 3.

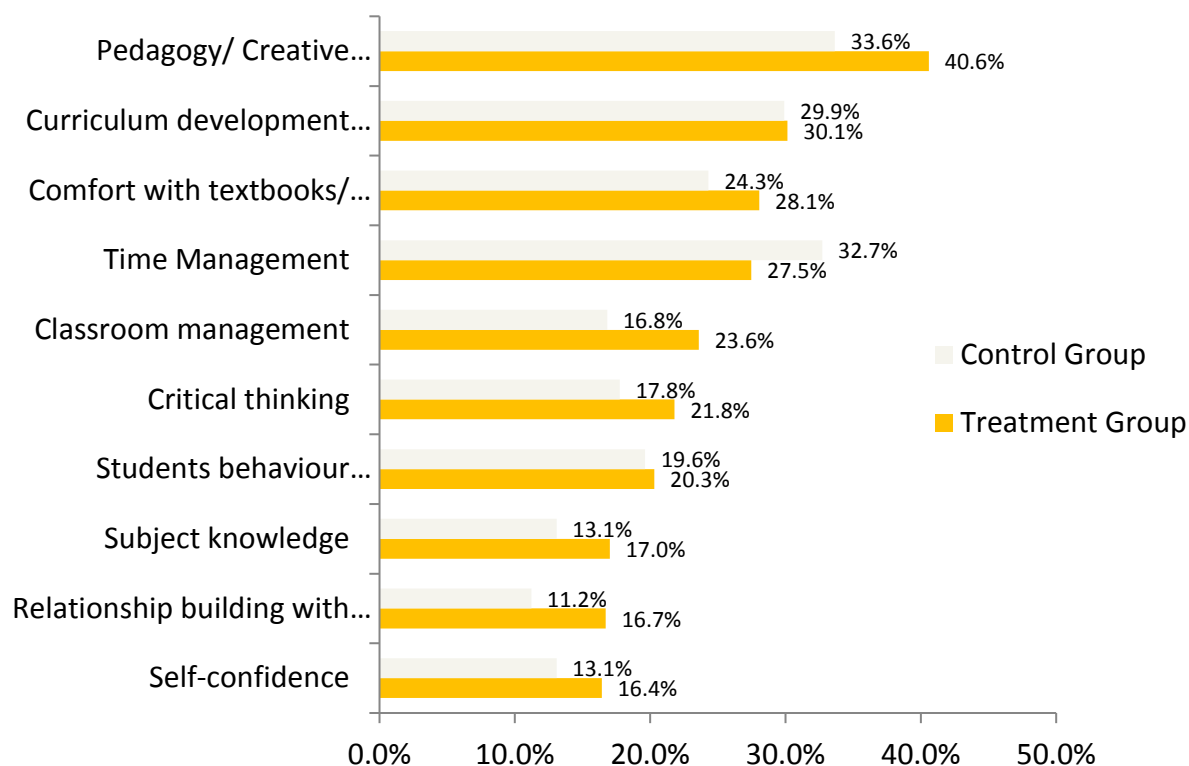


Figure 7 Areas of skills upgradation, Base: TG- 370 CG - 126

We find that 87% of treatment and 84% of control teachers stated that they need to upgrade their skills. 85% principals also stated their teachers needed to upgrade their skills. We find that, just as comfort level with textbooks, time for lesson planning and classroom management were stated as constraints, the teachers demand an upgradation of skills in these areas. Alongside these areas, Pedagogy/ creative teaching methods and curriculum development stand out as the most critical gaps in skills that teachers state they require development of skills in.



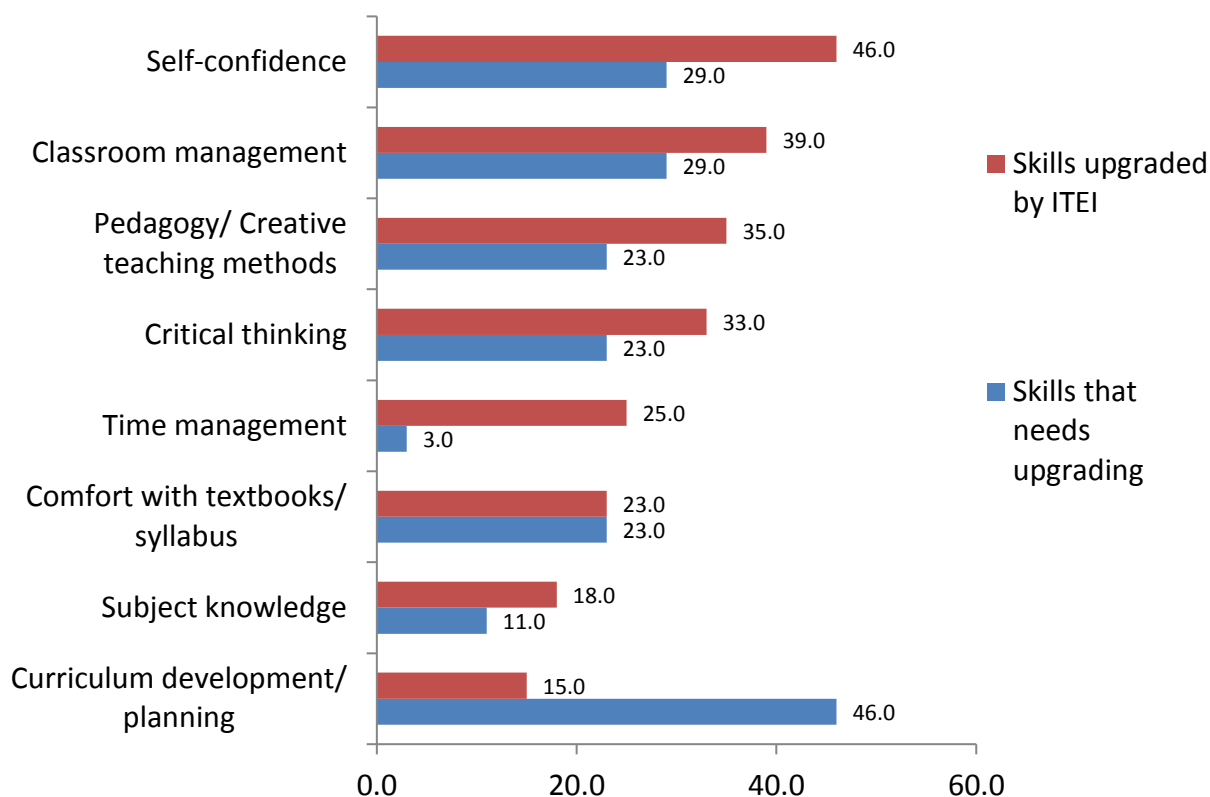


Figure 8 Principals view of teacher 'skills gap, Base:40

According to the principals, the skill that most teachers lack training in Curriculum development, self-confidence and classroom management. Albeit they are also of the opinion that taking the ITEI training has improved the self-confidence, classroom management, pedagogy and critical thinking of the teachers.

Importance Level	Treatment Group	Control Group
Base	370	126
1	3%	2%
2	1%	1%
3	7%	13%
4	22%	32%
5	67%	53%

Figure 9 Importance accorded to trainings by teachers

We find that over 95% of the teachers state that trainings are important. If we look at the top two boxes we see that the treatment and control group teachers accord high importance in similar measures to trainings. However, if concentrate on the top box only, we notice that a greater proportion of treatment teachers accords the highest importance (on the scale) to trainings. Of the teachers who have been trained at ITEI we find that 14% teachers did not always deem that trainings were important. 90% of those teachers who had a change of heart, attributed it to ITEI. 70% principals said trainings were very important and gave its importance a mean rating of 4.3 on a scale on 1 to 5.

Ideal duration of a training	Treatment group	Control group
One to two days	5%	9%
Three to four days	45%	49%
A week	44%	37%
10-15 days (working days)	4%	5%

Figure 10 Ideal duration of a training

Effective hours at a training	Treatment group	Control group
Two to four hour	44%	43%
Four to six hours	51%	55%
Six to eight hours	5%	2%

Figure 11 Effective hours at a training

Since the qualitative data suggested that teachers found schedules of the trainings long and hard to keep up with, the study also tried to understand what the ideal duration of a training is to the teachers. Most teachers belonging to both groups prefer a training schedule that is three to four days long and lasts four to six hours a day. For a training that is suited to their needs and interests, over 50% teachers said they would be willing to undergo a 15 day long training schedule.

The following table captures the willingness of the teachers to attend trainings under different scenarios:

Would you attend a training if....	Treatment group	Control group
It were held on a weekend	42%	29%
It were held during the winter break	65%	59%
It were held during the summer break	69%	63%
It were held before or after school hours	25%	15%
You were exempt from attending school during those day	72%	67%
You get leaves in lieu of attending the training	61%	63%

Figure 12 Willingness to attend trainings

We find that more teachers who taken trainings at ITEI are keen on attending trainings under different scenarios such as on weekends and before and after school hours. This goes with ITEI's objective of wanting to create more acceptability towards trainings.

	English		Hindi		Maths		EVS	
Attributes	Exposed	Unexposed	Exposed	Unexposed	Exposed	Unexposed	Exposed	Unexposed
Bases: all teachers	TG: 370	CG: 126	TG: 370	CG: 126	TG: 370	CG: 126	TG: 370	CG: 126
Prepare a lesson plan for each class	47%	44%	50%	46%	40%	36%	35%	30%
Understand and pay attention to the philosophy of the syllabus/curriculum	58%	55%	59%	57%	55%	61%	58%	52%
Revise the textbook	34%	33%	35%	32%	34%	31%	33%	30%
Refer the work of educators /language theorists	13%	14%	15%	21%	11%	14%	20%	25%
Prepare a group activity/game complimentary to the topic	50%	56%	55%	57%	57%	59%	56%	55%
Segmented your lesson into LSRW skills	36%	27%	38%	33%	NA	NA	NA	NA
Present the prose/ poem in theatre style	37%	33%	47%	40%	NA	NA	NA	NA
Try to learn/speak in the different dialects of Hindi for inclusivity	NA	NA	38%	36%	NA	NA	NA	NA
Check for pre-number skills in students before taking up complex lessons	NA	NA	NA	NA	53%	46%	NA	NA
Use the concrete Pictorial Abstract approach	NA	NA	NA	NA	46%	39%	NA	NA
Show the connect of the concepts to the real world	NA	NA	NA	NA	38%	34%	44%	30%
Use of teaching learning material	NA	NA	NA	NA	32%	27%	37%	34%
Do a concept mapping with the students	NA	NA	NA	NA	NA	NA	46%	36%
Make them do experiments in class/ at home	NA	NA	NA	NA	NA	NA	52%	52%

Figure 13 Classroom delivery

For the purpose of analysis, we have divided the various attributes of an improved classroom delivery into two categories viz. Hygiene factors and Trainings specific inputs.

Hygiene factors are those attributes which that primary school teachers ought to have regardless of having received training/s. Training specific inputs are those attributes that are taught to teachers at various trainings including at ITEI.

We observe that, while in the hygiene factors teachers belonging to both groups behave similarly, those teachers who have been trained at ITEI apply the inputs in a greater across subjects. In fact, 87% of treatment teachers conclusively state that their skills have been positively impacted after taking the ITEI training. 58% teachers state that they have become better at pedagogy, 40% teachers state that they feel more confident and 35% say that they are able to manage the classrooms better. They have rated the over all effectiveness of the programme to as 4.4 on a scale of 1 to 5 with the mean rating for English being 4.2, mathematics being 4.3 and Hindi and EVS leveling at 4.4.

Of those teachers who have taken trainings at ITEI, 85% said they would attend more and new trainings at ITEI and 93% said they would recommend the training to peers. Interestingly, We find that teachers in the middle of their careers, who have between 5-10 years and 10-20 years of experience show the most enthusiasm towards trainings. Of the teachers who took repeated session, 50% said the sessions were significantly different each time and 67% teachers said there was a great value addition in attending the trainings.

Of those teachers who had already taken the training, we found, word problems, EVS themes, language games, Spoken English, mental arithmetic and TLM development as the most popular themes for new trainings.

## 4. FINDINGS - OBSERVATIONS



## 4.1 CLASSROOM OBSERVATIONS

Through the observations we found the following:

71%	Exposed group teachers made use of resources such as Chart papers, sketch pens, Blocks, Globes, Fake currencies and Picture Books to explain concepts to their students.
58%	Exposed group teachers used role play as a method of teach the topic.
40%	Exposed group teachers used recitation as a method of teach the topic.
44%	Exposed group teachers used Theatre and Drama Style as a method of teach the topic.
22%	Exposed group teachers used Games and Sports as a method of teach the topic.
16%	Exposed group teachers used Quiz/ Questions and Answers as a method of teach the topic.
100%	Exposed group teachers connected the topic with real life examples.
13%	Exposed group teachers used code mixing always, regardless of the subject being taught.
89%	Exposed group teachers used repetition for better clarity of their students.
96%	Exposed group teachers were motivated to teach and answered all the questions answered by their students.

Figure 14 Classroom Observations

Quoting the school principal, "Like Shalini Madam, if you would go into her class, you can feel that she is doing it differently, she is asking children to do poems, she makes use of teaching aids differently. If some story and English poem is being taught, then I can see that the children are taking interest in her class."

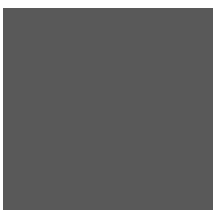
### 4.2 CASE IN POINT - 1

We attended Shalini Madam's Maths class of the second grade in Dilshad Garden O block. Her class strength on the day was 19. Her medium of instruction was Hindi but she also made use of English words in between – Bringing the technique of Code Mixing in play. The objective the day class to teach addition and subtraction for which Shalini madam made use of fake currency – She had arranged the low-cost resource herself. She made bench partners participate in the activity together so that weak students receive help from the ones who understand the concept. The instruction was given before the start of the activity. The activity was a market place interaction. Some students played the role of shopkeepers while the rest played customers. The students had to engage in trade for which they had to make use of addition and subtraction from the amount in their purses. We found that 75% of the students were actively engaged in the activity and thoroughly enjoyed the learning process.

### 4.3 CASE IN POINT - 2

We also attended Rajni Madam's Maths class of the fourth grade in Dilshad Garden, O block II. Her class strength on the day was 46 – over the prescribed student: teacher ratio. Her medium of instruction was Hindi. The objective the day class to revise angles for which Rajni madam made groups of 4-5 students. Since the topic was already taught before, she used the days class to check the understanding of the students and concretise the concept in the student's minds. The instructions were given before the start of the activity – it was going to be a quiz. Previous class was recapped. Students had to discuss amongst themselves and answer the questions. Conceptual understanding and critical thinking were worked upon without the use lecturing. We found that 50- 75% of the students were actively engaged in the activity.

## 5. RECOMMENDATIONS





## **A. Handholding**

### ***Phase 1 – Demonstration***

Although the trainers at ITEI and the teachers of EDMC have to deliver the same content, they are both faced with vastly different audiences. Teachers who have tried the different ways of teaching that they learned at the training said that some the ideas fell flat in their classrooms. It would be pertinent in this case to have a demonstration by the ITEI trainers in a school classroom. Teachers' concerns regarding the implementation of the teaching methods would thereby be addressed.

### ***Phase 2 – Supervision***

The teachers should have the provision to invite a supervisor to their class, should they wish for an assessment of the implementation of the newly learned teaching methods. This would ensure that those teachers, who found a renewed motivation in the careers, are able to meet the objectives of the training received by them.

## **B. Medium for peer learning**

Success stories induce and/or increase the believability of a teaching method. Those teachers that take repeated trainings should be grouped for a segment of the training (or a separate segment) which would be a medium for peer-learning and sharing of ideas and experiences.

## **C. Consultation with Principals**

The leadership of the school does not only understand the ethos of the school at a micro level but also has a bird's eye view of the schools functioning. We recommend that a small committee of principals be formed basis their merit and performance to get recommendations on which critical skills of teachers need bridging and which new topics to introduce to maximise the potential and utility of the training provided at ITEI.

**REPORT SUMMARY**

1. The school inspectors believe ITEI has good trainers and new concepts and new ways of engaging the class are taught.
2. The EDMC officials consider ITEI's trainings to be different from the regular training programs like DIET. They feel it involves practical methods of teaching, rather than the bookish and theoretical ways of teaching.
3. Most teachers and principals, who were interviewed agreed that the training is ideal in duration and thick on content- bridging the gaps, in their knowledge and its transparency before their students.
4. All the stakeholders who were interviewed collectively think that there is a common pool of skills that primary school teacher must have and the trainings provided by ITEI are honing.
5. Most teachers think their primary responsibility is to make children well behaved and disciplined.
6. We find that the teachers biggest constraints are exogenously determined. However, of the ones they can tackle by themselves, teachers feel most constrained by comfort level with textbooks, time for lesson planning and classroom management. We also see self-motivation closely following classroom management.
7. Although teachers mention self-motivation as a constraint we find that the teachers rate their motivation levels at an average of 4.5. However, the principals gave their teachers' motivation levels a mean rating of 3.
8. We find that 87% of treatment (exposed to ITEI training) and 84% of control (unexposed to ITEI training) teachers stated that they need to upgrade their skills.
9. 85% principals also stated their teachers needed to upgrade their skills.
10. We find that, just as comfort level with textbooks, time for lesson planning and classroom management were stated as constraints, the teachers demand an upgradation of skills in these areas. Alongside these areas, Pedagogy/ creative teaching methods and curriculum development stand out as the critical gaps in skills that teachers state they require development of skills in.
11. According to the principals, the skill that most teachers lack training in Curriculum development, self-confidence and classroom management. Albeit they are also of the opinion that taking the ITEI training has improved the self-confidence, classroom management, pedagogy and critical thinking of the teachers.
12. A greater proportion of treatment teachers accords the highest importance (on the scale) to trainings.
13. Of the teachers who have been trained at ITEI we find that 14% teachers did not always deem that trainings were important. 90% of those teachers who had a change of heart, attributed it to ITEI.
14. Most teachers prefer a training schedule that is three to four days long and lasts four to six hours a day – In this regard those teachers who have attended trainings at ITEI like the schedule better at ITEI than any other training.
15. We find that more teachers who taken trainings at ITEI are keen on attending trainings under different scenarios such as on weekends and before and after school hours. This goes with ITEI's objective of wanting to create more acceptability towards trainings.
16. We observe that, while in the hygiene factors teachers belonging to both groups (exposed to ITEI trainings and unexposed) behave similarly, those teachers who have been trained at ITEI apply the training specific inputs in a greater across subjects.
17. 87% of treatment teachers conclusively state that their skills have been positively impacted after taking the ITEI training. 58% teachers state that they have become better at pedagogy, 40% teachers state that they feel more confident and 35% say that they are able to manage the classrooms better.
18. Every school has examples of good teachers or 'model teachers' who are emulated by other teachers. In all schools where these observations were conducted, we found that these 'model teachers' were the ones trained at ITEI.

## ACKNOWLEDGEMENT

Kantar Public conducted this research exercise as a third-party evaluator for the TECH MAHINDRA FOUNDATION. We thank our colleagues and moderators who conducted the classroom observations and in-depth interviews with the stakeholder to provide us with for the interpretations/conclusions of this research endeavour.

We thank the ITEI team for their support throughout the research exercise. We consulted them during the development of the tools for the research and their comments greatly improved the information areas.

We would also like to show our gratitude to the East Delhi Municipal Corporation (EDMC) for providing us the authority letter to conduct data collection in schools.



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