

1. Summary - India

<b>INDIA</b>		<b>A. ICT Infrastructure</b>		<b>B. Teacher Professional Development</b>	
<b>Institution</b>	<b>Number</b>	<b>Initial costs – ICT Infrastructure</b>	<b>Recurring annual costs - ICT Infrastructure</b>	<b>Professional Development – initial year</b>	<b>Professional Development – subsequent years</b>
Schools – ‘Only LPS’ (Government and aided)	677,648	186,353,250,930	54,211,854,816	9,023,690,500	4,511,845,250
Schools – Only HPS and Only HPS + LPS (Government and aided)	346,363	161,058,733,992	48,490,801,632	21,072,089,425	10,536,044,713
Schools – HS (Government and aided) – all other than above two	198,907	198,907,276,400	59,672,182,920		
Cluster Resource Centres (CRC)	76,333	76,333,000,000	22,899,900,000	381,665,000	190,832,500
Block Resource Centres + BEO	13,500	13,500,000,000	4,050,000,000	303,750,000	151,875,000
No. of DIETs/DRCs + DEO	1,280	1,280,000,000	384,000,000	160,000,000	80,000,000
IASEs, CTEs (excludes private teacher education institutions)	135	135,000,000	40,500,000	27,000,000	13,500,000
SCERTs and state level institutions	40	40,000,000	12,000,000	20,000,000	10,000,000
National level institutions	10	10,000,000	3,000,000	5,000,000	2,500,000
<b>Grand Total</b>		<b>637,617,261,322</b>	<b>189,764,239,368</b>	<b>30,993,194,925</b>	<b>15,496,597,463</b>
<b>in crores</b>	<b>10,000,000</b>	<b>63,762</b>	<b>18,976</b>	<b>3,099</b>	<b>1,550</b>

<b>C. Investments - Technology integration units</b>		
	<b>Approximate set-up costs</b>	<b>Annual recurring costs</b>
State OER portal	80,000,000	80,000,000
State Technology team	None	96,000,000
Software purchases (outright, not licensing)	20,000,000	20,000,000
Research and Development	part of existing budgets	part of existing Research budgets
<b>Grand Total</b>	<b>100,000,000</b>	<b>196,000,000</b>
Rupees in crores	10	20

1. Summary - Karnataka

KARNATAKA		A. ICT Infrastructure		B. Teacher Professional Development	
		Initial costs – ICT Infrastructure	Annual costs - ICT Infrastructure	First Year costs	Subsequent year costs
Institution	Number				
Schools – ‘Only LPS’ (Government and aided)	20,516	5,641,840,050	1,641,262,560	205,279,987	102,639,994
Schools – Only HPS and Only HPS + LPS (Government and aided)	23,405	10,883,392,611	3,276,720,356		
Schools – HS (Government and aided) – all other than above two	13,536	13,535,515,000	4,060,654,500	13,420,000	6,710,000
Cluster Resource Centres (CRC)	2,684	2,684,000,000	805,200,000	18,360,000	9,180,000
Block Resource Centres + BEO	408	408,000,000	122,400,000	8,500,000	4,250,000
No. of DIETs/DRCs + DEO	68	68,000,000	20,400,000	2,400,000	1,200,000
IASEs, CTEs (excludes private teacher education institutions)	12	12,000,000	3,600,000	500,000	250,000
SCERTs and state level institutions	1	1,000,000	300,000	0	0
<b>Grand Total</b>		<b>33,233,747,661</b>	<b>9,930,537,416</b>	<b>1,411,897,688</b>	<b>705,948,844</b>
<b>in crores</b>	10,000,000	<b>3,323</b>	<b>993</b>	<b>141</b>	<b>71</b>

C. State investments - Technology integration units		
State OER portal	2,000,000	2,000,000
State Technology team	None	2,400,000
Software purchases (outright, not licensing)	None	None
Research and Development	part of existing budgets	part of existing Research budgets
<b>Grand Total</b>	<b>2,000,000</b>	<b>4,400,000</b>
Rupees in crores	0.20	0.44

2. ICT infrastructure

No	Items	Cost per unit	Quantity	Rupees
<b>Scenario 1 – Level 1 (only basic infrastructure available)</b>			<b>High School</b>	
<b>One time costs for setting up ICT lab in an institution</b>			<b>20</b>	
1	School server + wireless access point/router, with atleast 1 TB HDD and at least 32 GB RAM, with FOSS operating system	60,000	1	60,000
2	Desktop computers or laptops (with additional keyboard and mouse) - 500 GB HDD, 4 GB RAM, Intel i5 or equivalent processor, with FOSS operating system	25,000	20	500,000
3	Laptop	30,000	1	30,000
4	Learner Tablet (at least 30-40, depending on the batch size of a given class) or mobile phones	8,000	20	160,000
5	Wireless Keyboard (depending on the batch size of a given class – for using with each Tablet)	1,500	20	30,000
6	LAN and internet connectivity (Router)	15,000	1	15,000
7	Head phones (depending on the batch size of a given class)	1,000	20	20,000
8	Splitters	120	10	1,200
9	UPS and power storage (backup duration based on local requirements)	12,500	1	12,500
10	Web camera, digital camera, printer, projector	60,000	1	60,000
11	External storage capacity (1 TB HDD)	6,000	2	12,000
12	Furniture	2,000	20	40,000
			<b>Total</b>	<b>940,700</b>
<b>Rounded off</b>				<b>1,000,000</b>
<b>Recurring costs</b>				
1	Consumables and stationery including storage mini devices	3,000	12	36,000 750
2	Electricity	2,000	12	24,000 500
3	Internet	1,000	12	12,000 250
4	Telephone and miscellaneous expenses	2,000	12	24,000 500
5	ICT lab renewal costs (20%)	0.20		200,000 0.20
			<b>8,000 Total</b>	<b>296,000</b>
<b>Rounded off</b>				<b>300,000</b>

## 2. ICT infrastructure

### Scenario 1 – Level 1 – 20 devices for high school and 10 devices for higher primary schools and 3 devices for lower primary schools

#### ICT Infrastructure – India

Institution	Number	Initial Investment	Recurring
Schools – ‘Only LPS’ (Government and aided)	677,648	186,353,250,930	54,211,854,816
Schools – Only HPS and Only HPS + LPS (Government and aided)	346,363	161,058,733,992	48,490,801,632
Schools – HS (Government and aided) – all other than above two	198,907	198,907,276,400	59,672,182,920
Cluster Resource Centres (CRC)	76,333	76,333,000,000	22,899,900,000
Block Resource Centres + BEO	13,500	13,500,000,000	4,050,000,000
No. of DIETs/DRCs + DEO	1,280	1,280,000,000	384,000,000
IASEs, CTEs (excludes private teacher education institutions)	135	135,000,000	40,500,000
SCERTs and state level institutions	40	40,000,000	12,000,000
National level institutions	10	10,000,000	3,000,000
Source - (MHRD annual report 2015-16, 12 Plan TE guidelines for number of institutions)	0	0	0
Only government teacher support institutions have been considered in this computation, while all s	0	0	0
<b>Grand Total</b>	0	<b>637,617,261,322</b>	<b>189,764,239,368</b>
<b>Total in crores towards ICT infrastructure</b>	<b>10,000,000</b>	<b>63,762</b>	<b>18,976</b>

#### ICT Infrastructure – Karnataka

Institution	Number	Initial Investment	Recurring
Schools – ‘Only LPS’ (Government and aided)	20,516	5,641,840,050	1,641,262,560
Schools – Only HPS and Only HPS + LPS (Government and aided)	23,405	10,883,392,611	3,276,720,356
Schools – HS (Government and aided) – all other than above two	13,536	13,535,515,000	4,060,654,500
Cluster Resource Centres (CRC)	2,684	2,684,000,000	805,200,000
Block Resource Centres + BEO	408	408,000,000	122,400,000
No. of DIETs/DRCs + DEO	68	68,000,000	20,400,000
IASEs, CTEs (excludes private teacher education institutions)	12	12,000,000	3,600,000
SCERTs and state level institutions	1	1,000,000	300,000
National level institutions	0	0	0
Source - (MHRD annual report 2015-16, 12 Plan TE guidelines for number of institutions)	0	0	0
Only government teacher support institutions have been considered in this computation, while all s	0	0	0
<b>Grand Total</b>	0	<b>33,233,747,661</b>	<b>9,930,537,416</b>
<b>Total in crores towards ICT infrastructure</b>	<b>10,000,000</b>	<b>3,323</b>	<b>993</b>

## 2. ICT infrastructure

### Scenario 2 – Level 1 – 20 devices for high school and higher primary schools and 3 devices for lower primary schools

#### ICT Infrastructure – India

Institution	Number	Initial Investment	Recurring
Schools – ‘Only LPS’ (Government and aided)	677,648	186,353,250,930	54,211,854,816
Schools – HPS, HS (Government and aided) – other than ‘Only LPS’	545,270	545,270,145,200	163,581,043,560
Cluster Resource Centres (CRC)	76,333	76,333,000,000	22,899,900,000
Block Resource Centres + BEO	13,500	13,500,000,000	4,050,000,000
No. of DIETs/DRCs + DEO	1,280	1,280,000,000	384,000,000
IASEs, CTEs (excludes private teacher education institutions)	135	135,000,000	40,500,000
SCERTs and state level institutions	40	40,000,000	12,000,000
National level institutions	10	10,000,000	3,000,000
<b>Source - (MHRD annual report 2015-16, 12 Plan TE guidelines for number of institutions)</b>			
Only government teacher support institutions have been considered in this computation, while all schools have been considered			
<b>Grand Total</b>		<b>822,921,396,130</b>	<b>245,182,298,376</b>
<b>Total in crores towards ICT infrastructure</b>	<b>10,000,000</b>	<b>82,292</b>	<b>24,518</b>

#### ICT Infrastructure – Karnataka

Institution	Number	Initial Investment	Recurring
Schools – ‘Only LPS’ (Government and aided)	20,516	5,641,840,050	1,641,262,560
Schools – HPS, HS (Government and aided) – other than ‘Only LPS’	36,941	36,940,660,400	11,082,198,120
Cluster Resource Centres (CRC)	2,684	2,684,000,000	805,200,000
Block Resource Centres + BEO	408	408,000,000	122,400,000
No. of DIETs/DRCs + DEO	68	68,000,000	20,400,000
IASEs, CTEs (excludes private teacher education institutions)	12	12,000,000	3,600,000
SCERTs and state level institutions	1	1,000,000	300,000
National level institutions		0	0
<b>Source - (MHRD annual report 2015-16, 12 Plan TE guidelines for number of institutions)</b>			
Only government teacher support institutions have been considered in this computation, while all schools have been considered			
<b>Grand Total</b>		<b>45,755,500,450</b>	<b>13,675,360,680</b>

## 2. ICT infrastructure

<b>Total in crores towards ICT infrastructure</b>	<b>10,000,000</b>	<b>4,576</b>	<b>1,368</b>
		<b>4,580</b>	<b>1,370</b>

### Scenario 3 – Level 2 (sophisticated infrastructure)

#### One time costs for setting up ICT lab in an institution

		20	
School server + wireless access point/router, with atleast 4 TB HDD and at least 32 GB RAM, , with FOSS operating system	80,000	1	80,000
Laptops (with additional keyboard and mouse) – 1 TB HDD, 4 GB RAM, Intel i5 or equivalent processor, with FOSS operating system	50,000	20	1,000,000
Rasberry Pi / Arduinho devices	50,000	1	50,000
Learner Tablet (at least 30-40, depending on the batch size of a given class) or mobile phones	8,000	20	160,000
Wireless Keyboard (depending on the batch size of a given class – for using with each Tablet)	1,500	20	30,000
LAN and internet connectivity (Router)	15,000	1	15,000
Head phones (depending on the batch size of a given class)	1,000	20	20,000
Splitters	120	10	1,200
UPS and power storage (backup duration based on local requirements)	12,500	1	12,500
Web camera, digital camera, printer, projector	60,000	1	60,000
External storage capacity (1 TB HDD)	6,000	5	30,000
Furniture	2,000	20	40,000
	<b>Total</b>		<b>1,498,700</b>

### Scenario 3 – Level 1 – 20 devices for high school and higher primary schools and 3 devices for lower primary schools

#### ICT Infrastructure – India

Institution	Number	Initial Investment	Recurring
Schools – ‘Only LPS’ (Government and aided)	677,648	259,444,384,186	54,211,854,816
Schools – HPS, HS (Government and aided) – other than ‘Only LPS’	545,270	817,196,366,611	163,581,043,560
Cluster Resource Centres (CRC)	76,333	76,333,000,000	22,899,900,000
Block Resource Centres + BEO	13,500	13,500,000,000	4,050,000,000
No. of DIETs/DRCs + DEO	1,280	1,280,000,000	384,000,000

2. ICT infrastructure

IASEs, CTEs (excludes private teacher education institutions)	135	135,000,000	40,500,000
SCERTs and state level institutions	40	40,000,000	12,000,000
National level institutions	10	10,000,000	3,000,000
<b>Source - (MHRD annual report 2015-16, 12 Plan TE guidelines for number of institutions)</b>			
Only government teacher support institutions have been considered in this computation, while all schools have been considered			
<b>Grand Total</b>		<b>1,167,938,750,797</b>	<b>245,182,298,376</b>
<b>Total in crores towards ICT infrastructure</b>	<b>10,000,000</b>	<b>116,794</b>	<b>24,518</b>

**ICT Infrastructure – Karnataka**

<b>Institution</b>	<b>Number</b>	<b>Initial Investment</b>	<b>Recurring</b>
Schools – ‘Only LPS’ (Government and aided)	20,516	7,854,672,297	1,641,262,560
Schools – HPS, HS (Government and aided) – other than ‘Only LPS’	36,941	55,362,967,741	11,082,198,120
Cluster Resource Centres (CRC)	2,684	2,684,000,000	805,200,000
Block Resource Centres + BEO	408	408,000,000	122,400,000
No. of DIETs/DRCs + DEO	68	68,000,000	20,400,000
IASEs, CTEs (excludes private teacher education institutions)	12	12,000,000	3,600,000
SCERTs and state level institutions	1	1,000,000	300,000
National level institutions		0	0
<b>Source - (MHRD annual report 2015-16, 12 Plan TE guidelines for number of institutions)</b>			
Only government teacher support institutions have been considered in this computation, while all schools have been considered			
<b>Grand Total</b>		<b>66,390,640,038</b>	<b>13,675,360,680</b>
<b>Total in crores towards ICT infrastructure</b>	<b>10,000,000</b>	<b>6,639</b>	<b>1,368</b>

2. ICT infrastructure

Quantity	Rupees	
<b>Lower Primary School</b>		
<b>3</b>		
1	60,000	
3	75,000	
1	30,000	
0	0	
0	0	
1	15,000	
3	3,000	
3	360	
1	12,500	
1	60,000	
1	6,000	
3	6,000	
<b>Total</b>	<b>267,860</b>	
	<b>275,000</b>	

Quantity	Rupees	
<b>Higher Primary School</b>		
<b>10</b>		
1	60,000	
10	250,000	
1	30,000	
0	0	
0	0	
1	15,000	
10	10,000	
10	1,200	
1	12,500	
1	60,000	
1	6,000	
10	20,000	
<b>Total</b>	<b>464,700</b>	
	<b>465,000</b>	

12	9,000	
12	6,000	
12	3,000	
12	6,000	
	55,000	
<b>Total</b>	<b>79,000</b>	
	<b>80000</b>	

1500	12	18,000
1000	12	12,000
500	12	6,000
1000	12	12,000
0.20		93,000
		<b>141,000</b>
		<b>140000</b>



2. ICT infrastructure

Type of school	No schools	Initial Investment	Recurring
<b>LPS</b>	<b>840,546</b>	275,000	80,000
<b>HPS</b>	<b>429624</b>	465,000	140,000
HS	<b>246722</b>	1,000,000	300,000
Total	1,516,892		
Unaided	<b>19.38</b>		
Remaining	<b>80.62</b>		
Total govt+aided	1222918.3		

Type of school	
<b>LPS</b>	26,790
<b>HPS</b>	30563
<b>HS</b>	17675
Total	<b>75,028</b>
Unaided	<b>23.42</b>
Remaining	<b>76.58</b>
Total govt+aided	<b>100</b>

## 2. ICT infrastructure

<b>Total</b>	840,546
<b>Total</b>	676,346
	<b>1,516,892</b>
Unaided	<b>19.38</b>
Remaining	<b>80.62</b>
<b>Total</b>	26,790
<b>Total</b>	48,238
	<b>75,028</b>
Unaided	<b>23.42</b>
Remaining	<b>76.58</b>

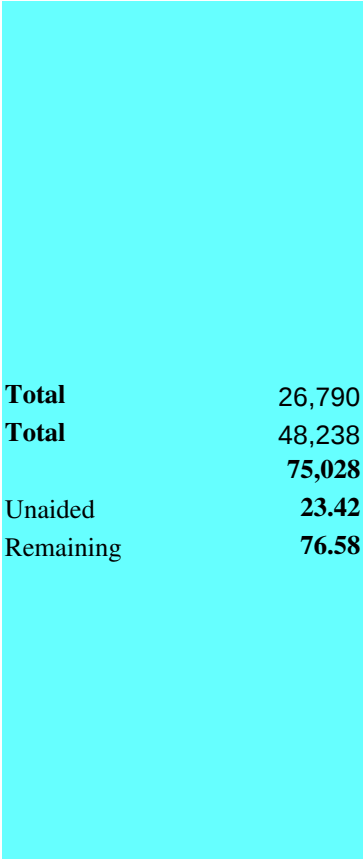
2. ICT infrastructure



	<b>3</b>			<b>10</b>	
	1	80,000		1	80,000
	3	150,000		10	500,000
	1	50,000		1	50,000
	0	0		0	0
	0	0		0	0
	1	15,000		1	15,000
	3	3,000		10	10,000
	3	360		10	1,200
	1	12,500		1	12,500
	1	60,000		1	60,000
	1	6,000		1	6,000
	3	6,000		10	20,000
<b>Total</b>		<b>382,860</b>	<b>Total</b>		<b>754,700</b>

<b>Total</b>	840,546
<b>Total</b>	676,346
	<b>1,516,892</b>
Unaided	<b>19.38</b>
Remaining	<b>80.62</b>

## 2. ICT infrastructure



<b>Total</b>	26,790
<b>Total</b>	48,238
	<b>75,028</b>
Unaided	<b>23.42</b>
Remaining	<b>76.58</b>

### 3. Teacher Professional Development

#### Teacher Education program – indicative agenda

Induction training maths and science teachers for 10 days - digital literacy, OER creation

OER creation

Teaching / classroom integration

Management of school ICT infrastructure

**The ‘NCERT National ICT Curriculum’ document should be referred to for designing the program content**

#### Cluster / Block / District / State

Teacher educator training

digital literacy

OER creation

Teaching learning integration

Portals (in local language also)

Learning networks of teacher educators

Academic support to teachers on-line

#### Teacher Professional Development – India

Institution	First Year costs	Subsequent year costs	Number of schools	Number of members	Number of learners	10	5
						days	days
						First Year	Subsequent years
						Rs per day	
School teachers – only LPS (subsequent phase)	9,023,690,500	4,511,845,250	677,648		1,804,738	10	5
School teachers – Non (only LPS)	21,072,089,425	10,536,044,713	545,270		4,214,418	10	5
Cluster Resource Persons (CRPs)	381,665,000	190,832,500	76,333	1	76333	10	5
Block Resource Persons (BRPs)	303,750,000	151,875,000	6,750	6	40500	10	5
No. of DIETs/DRCs (excludes private teacher education institutions)	160,000,000	80,000,000	640	25	16000	10	5
IASEs, CTEs (excludes private teacher education institutions)	27,000,000	13,500,000	135	20	2700	10	5
SCERTs and state level institutions	20,000,000	10,000,000	40	50	2000	10	5
National level institutions	5,000,000	2,500,000	10	50	500	10	5
<b>Grand Total</b>	<b>30,993,194,925</b>	<b>15,496,597,463</b>		<b>152</b>			

### 3. Teacher Professional Development

<b>Rupees in crores</b>	<b>3,099</b>	<b>1,550</b>	10000000
	<b>3,100</b>	<b>1,550</b>	

Unaided schools have been omitted from this computation. Government and aided schools are considered  
Only government teacher support institutions have been considered in this computation

#### Teacher Professional Development – Karnataka

Institution	Subsequent year		Number	Members	no of learners	days	Rs per day	days
	First Year costs	costs				First Year	Subsequent years	
School teachers – only LPS (subsequent phase)	205,279,987	102,639,994	20,516		41,056	10	500	5
School teachers – Non (only LPS)	1,163,437,701	581,718,851	36,941		232,688	10	500	5
Cluster Resource Persons (CRPs)	13,420,000	6,710,000	2,684	1	2684	10	500	5
Block Resource Persons (BRPs)	18,360,000	9,180,000	408	6	2448	10	750	5
No. of DIETs/DRCs (excludes private teacher education institutions)	8,500,000	4,250,000	34	25	850	10	1000	5
IASEs, CTEs (excludes private teacher education institutions)	2,400,000	1,200,000	12	20	240	10	1000	5
SCERTs and state level institutions	500,000	250,000	1	50	50	10	1000	5
National level institutions	0	0	0	50	0	10	1000	5
<b>Grand Total</b>	<b>1,411,897,688</b>	<b>705,948,844</b>		<b>152</b>				
<b>Rupees in crores</b>	<b>141</b>	<b>71</b>	10000000					
	<b>140</b>	<b>70</b>						

Unaided schools have been omitted from this computation. Government and aided schools are considered  
Only government teacher support institutions have been considered in this computation

3. Teacher Professional Development

Unaided	<b>30.75</b>	2,672,766
Remaining	<b>69.25</b>	6,019,156
<b>Total</b>	8,691,922	
LPS ONLY	2606120	<b>30</b>
Others	6085802	<b>70</b>

3. Teacher Professional Development

Unaided	<b>35.66</b>	
<b>Remaining</b>	<b>64.34</b>	
Total	425,464	
LPS ONLY	63811	<b>15</b>
Others	361653	<b>85</b>



4. State investments

<b>India</b>	<b>Number</b>	<b>Approximate set-up costs</b>	<b>Annual recurring costs</b>
State OER portal	40	80,000,000	80,000,000
State Technology team	40 None		96,000,000
Software purchases (outright, not licensing)		20,000,000	20,000,000
Research and Development		part of existing budgets	part of existing Research budgets
<b>Total</b>		<b>100000000</b>	<b>196000000</b>
Rupees in crores		<b>10</b>	<b>20</b>
		10000000	
<b>Karnataka</b>			
State OER portal	1	2,000,000	2,000,000
State Technology team	1 None		2,400,000
Software purchases (outright, not licensing)		None	None
Research and Development		part of existing budgets	part of existing Research budgets
<b>Total</b>		<b>2000000</b>	<b>4400000</b>
Rupees in crores		<b>0.20</b>	<b>0.44</b>