Primary Education in India: Key Problems

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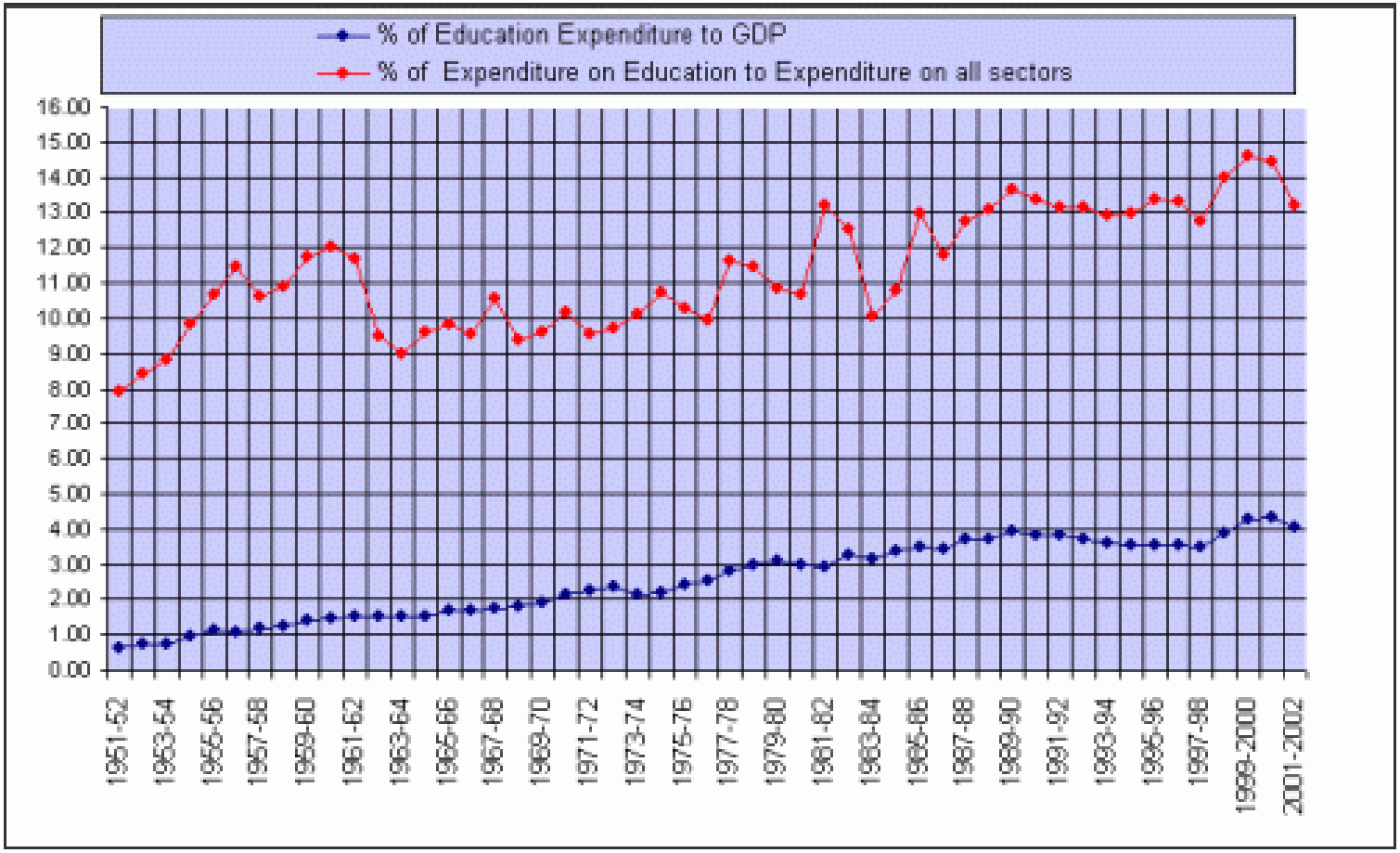
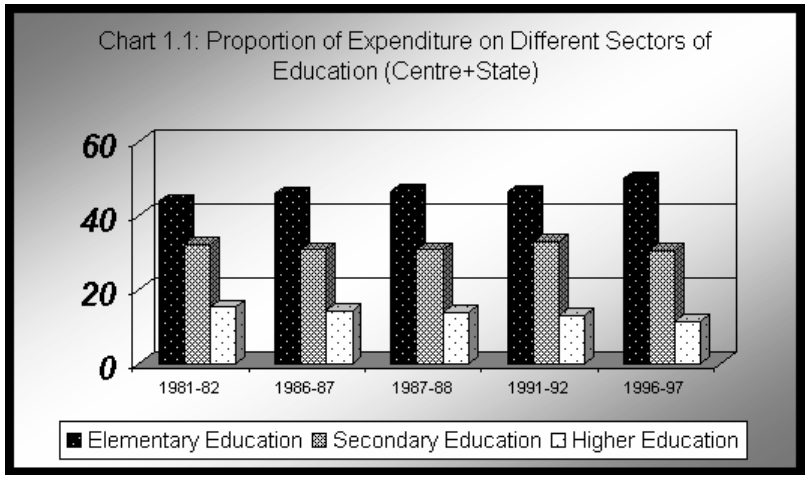
Expenditure in Education

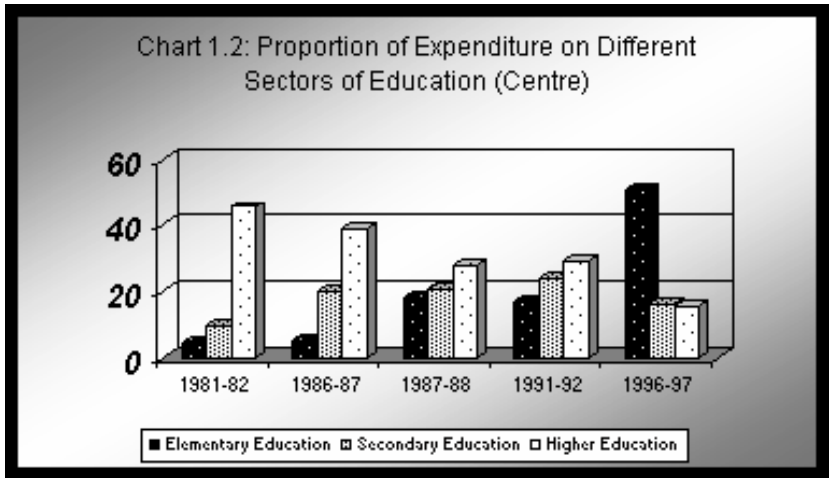


2001-02 was Rs. 84,179 Crores (at 4.02% of GDP)

Never above 4.3% of GDP, despite the target of 6% by the Kothari Commission

Expenditures breakup





Second largest education system in the world.

Output ? Quantity ? Quality ?

Overview

- Low enrollment (China 99%, India 92%)
- High drop out rate
- Quality of ‘successful’ students

- Teacher absence
- Quality of instruction

- Educational facilities, e.g., classrooms, libraries

References

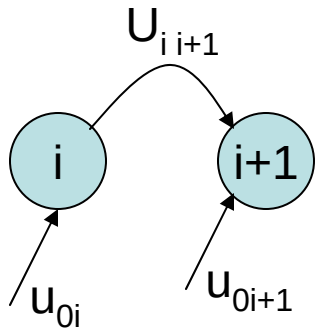
1. **Teacher absence in India: A snapshot**
   Kremer, Chaudhury, Muralidharan, Hammer, Rogers
2. **Drop-out rate at primary level**
   Arun C. Mehta
3. **Elementary Education in India, Where do we stand?: Analytical Report**
   Arun C. Mehta
4. **Quality Concerns in Primary Education in India, Where is the problem?**
   Yash Aggarwal
5. **Teacher related indicators** (Based on data collected by DISE)
   Arun C. Mehta
6. **Role of teacher**
   Ranjan and Rahman

7. http://www.dpepmis.org/webpages/reports&studies.htm (DISE)
8. http://www.indiastat.com/
9. http://www.educationforallinindia.com/

Drop-out Rates

- Indicators of retention not clearly understood
- DISE (Estd. 1994) District Information System for Education
  - Collection of fine grained information for individual students, teachers
- Cohort group: group of people sharing common characteristics or experience.

- $RR(t) = [\blacklozenge u_{i5}(t) - u_{45}(t)\ ]/u_{01}(t-4)$
  - Does not take into account u_{02} , u_{03} etc.
  - Does not take into account $u_{45}(t+1)$, etc.
- $DR(t) = 100 - RR(t)$



Retention Rate (%) at the Primary Level: 2004 & 2005

State/UT	Education Cycle	YEAR			
		2003-04		2004-05	
		Number of Districts	Retention Rate	Number of Districts	Retention Rate
Andhra Pradesh	I-V	-	-	18	61.49
Assam	I-IV	9	35.73	9	48.98
Bihar	I-V	8	35.33	11	36.86
Gujarat	I-IV	3	42.89	3	41.13
Haryana	I-V	7	64.3	6	66.29
Himachal Pradesh	I-V	4	87.69	4	82.36
Jharkhand	I-V	5	40.86	6	36.50
Karnataka	I-IV	11	63.1	16	84.06
Kerala	I-IV	6	98.66	6	84.83
Madhya Pradesh	I-V	27	68.51	28	81.39
Maharashtra	I-IV	7	67.22	16	84.06
Orissa	I-V	8	53.99	8	58.61
Tamil Nadu	I-V	4	90.05	4	93.54
Uttar Pradesh	I-V	14	51.12	48	61.65
Uttaranchal	I-V	-	-	5	54.07
West Bengal	I-IV	10	47.47	10	49.29
Average of All Districts*	**I-V**	**123**	**53.43**	**184**	**58.11**

42% students are dropping out before reaching V.

Drop out rates

State	Class I	Class II	Class III	Class IV	Class V	Average Primary Classes I-V
Andhra Pradesh	12.34	15.06	15.15	13.01	59.15	22.43
Assam	13.37	4.53	3.26	2.07	9.63	7.22
Bihar	14.44	3.84	2.75	-3.86	30.17	9.36
Chandigarh	-1.33	1.52	-1.27	3.60	5.33	1.61
Chhattisgarh	9.53	4.23	7.02	6.93	17.12	8.69
Gujarat	5.79	2.95	3.68	5.20	6.32	4.77
Haryana	15.08	7.37	5.35	4.56	44.69	14.60
Himachal Pradesh	4.77	2.15	1.89	2.90	15.80	5.44
Jharkhand	9.27	2.28	3.98	2.33	20.04	6.99
Karnataka	6.28	4.24	4.14	3.93	9.56	5.61
Kerala	2.18	2.45	2.18	3.91	0.75	2.30
Madhya Pradesh	8.06	6.90	9.64	4.36	22.41	10.13
Maharashtra	5.36	3.27	3.65	15.30	4.68	6.38
Meghalaya	37.75	13.37	13.66	14.60	11.36	22.29
Mizoram	15.67	-11.88	-2.46	-9.64	5.56	1.23
Nagaland	-1.97	-2.02	1.94	14.20	1.63	2.22
Orissa	15.21	7.54	7.84	6.72	23.22	11.80
Punjab	-0.11	-1.27	-1.02	-1.68	38.40	6.33
Rajasthan	24.97	12.03	10.21	4.74	15.60	15.02
Sikkim	7.07	0.03	4.29	2.41	7.81	4.26
Tamil Nadu	5.78	2.77	1.82	1.66	3.82	3.17
Tripura	7.36	0.87	3.51	4.71	8.07	4.86
Uttar Pradesh	11.63	8.34	11.22	9.41	47.91	15.50
Uttaranchal	14.38	5.19	7.25	6.16	29.52	12.06
West Bengal	18.24	3.75	4.34	16.20	13.47	11.78
All States	**12.17**	**6.01**	**6.76**	**7.27**	**22.87**	**10.64**

Note: States showing negative drop-out rates indicate inconsistent grade-specific enrolment data.

10% drops out at each level.

Efficiency

- Coefficient of efficiency =
  actual # pupil years / ideal # pupil years = 1.3
- Years input per graduate= 6.5 to 6.8 (ideally 5)
- Transition rate from IV/V to V/VI:
  boys 79.9%, girls 75.7%

- Does not tell us why students drop out.

Quality

- Quality compromised for quantity
- Metrics for quality of education/ competency have received less attention
- International Evaluation Agency (IEA) has developed achievement tests for establishment and comparison of learning outcome of children in developed and developing countries.
  - Data ??

Study I

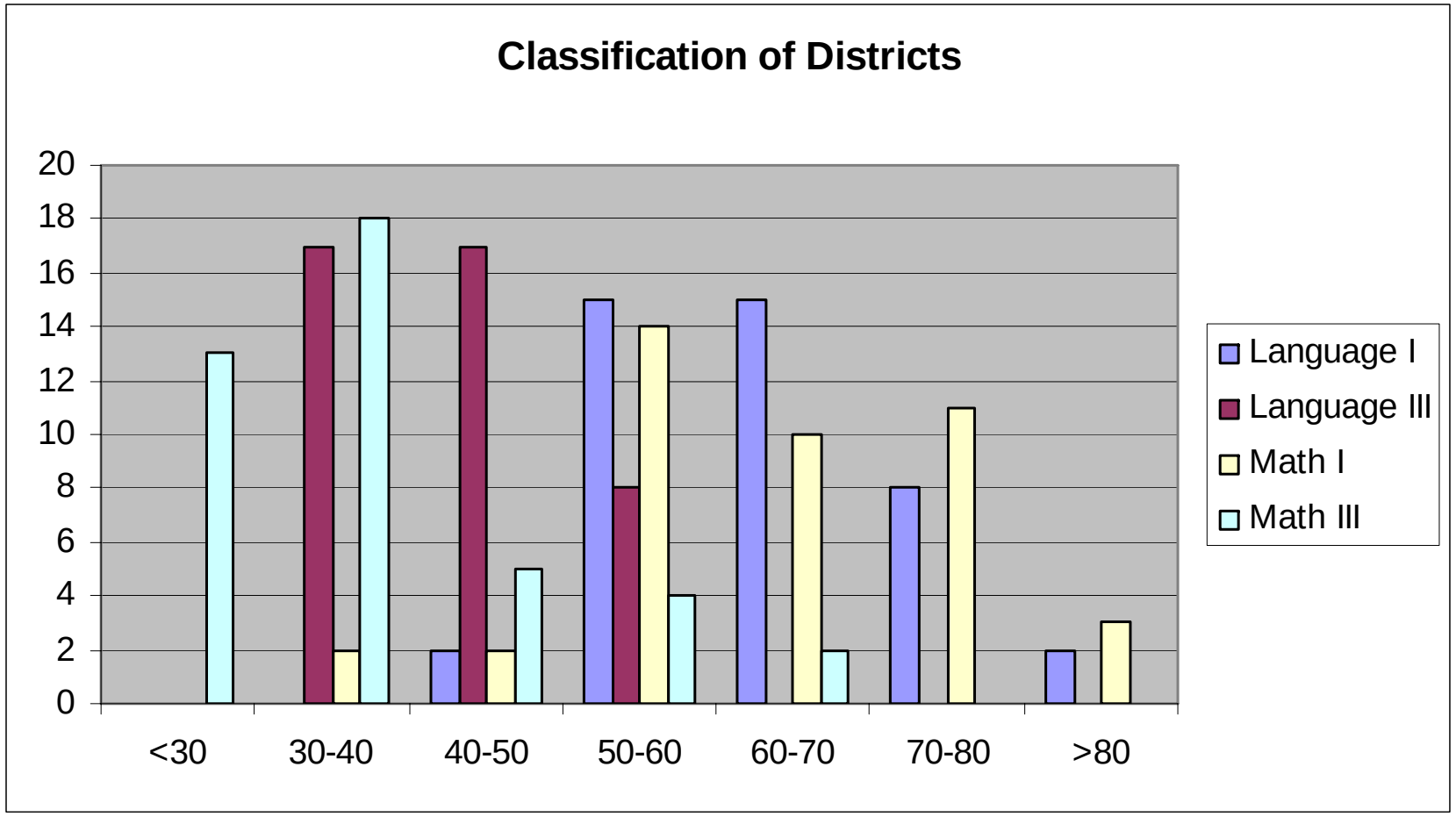
- 169 Schools in Delhi surveyed
- Based on math and language competency tests designed by NCERT

- Mean score for Hindi and English medium schools are statistically different in math
  - In English medium schools 38% students failed to score > 40% in math.
  - In Hindi medium schools math score 40% < language 56%
- Mean score of SC students is 8-10% < general
- Girls scored < boys
- Children with pre-primary education scored 8-10% more than those without
- Class I scores >> Class V scores

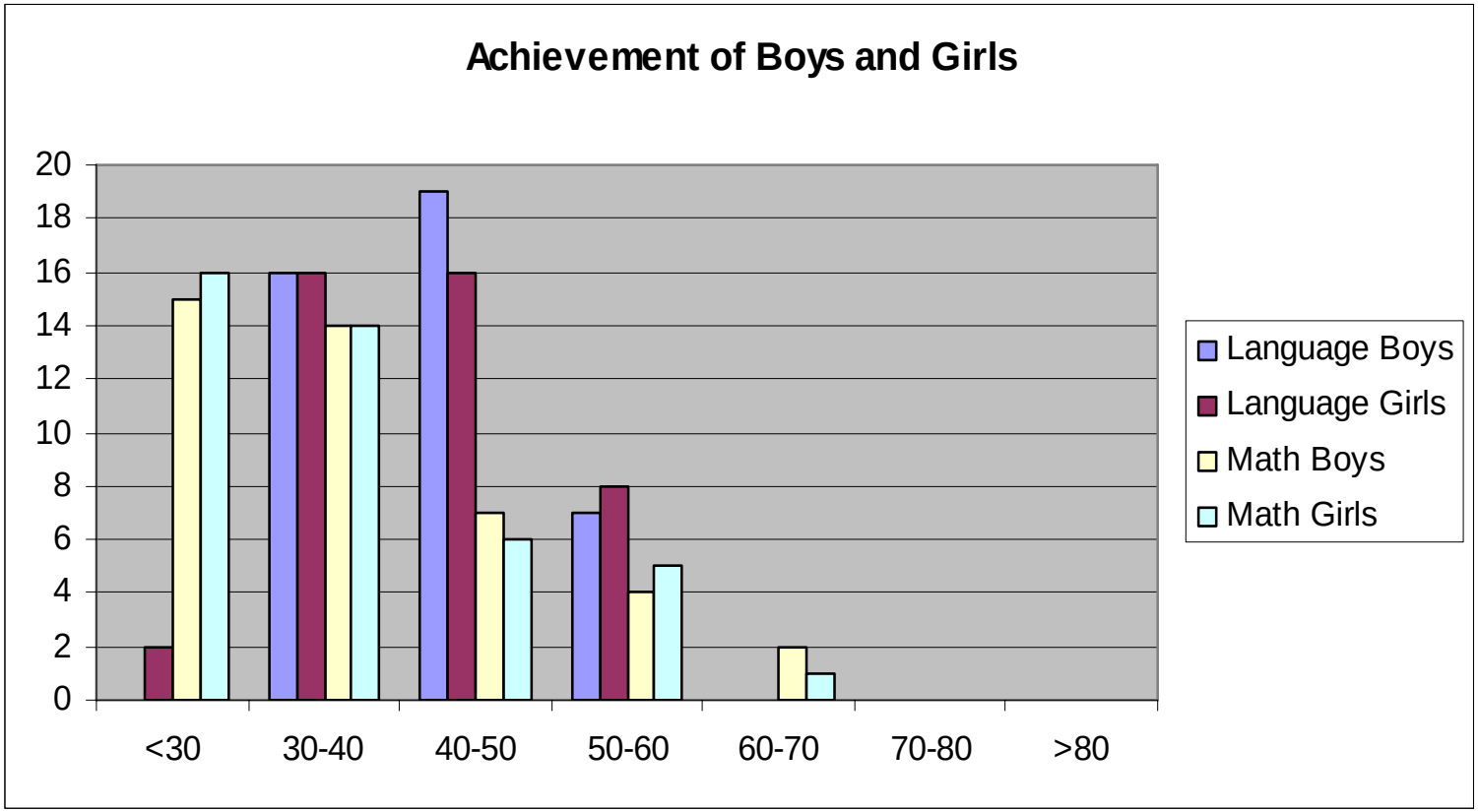
Study II

- 46 Districts 8 States 1993/94 (Govt. schools only)
- Based on tests developed by NCERT
  - Teachers found it hard to handle math questions
    - Most of them could not do an LCM question correctly
    - 64% could not give a proper title to a paragraph
- Huge gap between best and worst districts
  - 85.5% Belgaum, Karnataka 44% Rewa, MP

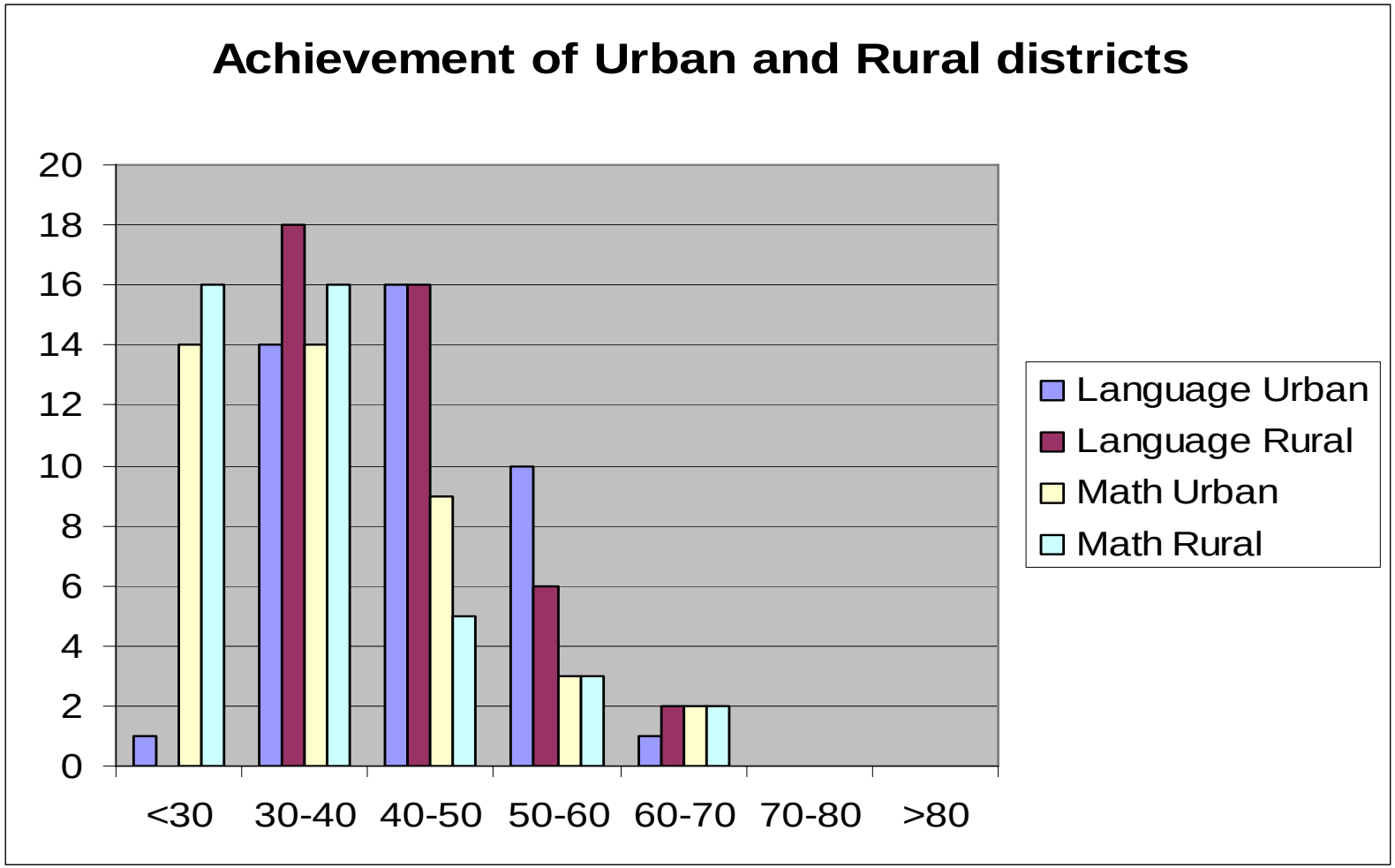
Quality drops with class



Gender disparity: Present but not huge



Urban-Rural disparity is large



Rural students doing better in languages. Urban students doing better in math.

Teachers: statistics

- Who can become teacher at primary schools?
  - 12th pass + 2-yr training (DIET)
  - Para teachers
- 3.67 million teachers
  - 48.5% in primary
  - 35% in primary + higher
  - 85% in rural areas

Teacher absence

- Unannounced visits to 3700 primary schools in 20 states representing 98% population
- Covered government schools, rural private and private-aided schools
- Direct physical verification of teacher's presence
- 25% absence – only 45% actively engaged in teaching (in some states only 25%)
- Second highest average among 8 countries where data collected in the similar fashion

Teacher Absence

TABLE 2: Teacher absence in public schools by state

State	Absence (%)	State	Absence (%)
Maharashtra	14.6	West Bengal	24.7
Gujarat	17.0	Andhra Pradesh	25.3
Madhya Pradesh	17.6	Uttar Pradesh	26.3
Kerala	21.2	Chhatisgarh	30.6
Himachal Pradesh	21.2	Uttaranchal	32.8
Tamil Nadu	21.3	Assam	33.8
Haryana	21.7	Punjab	34.4
Karnataka	21.7	Bihar	37.8
Orissa	23.4	Jharkhand	41.9
Rajasthan	23.7	*Weighted Average*	*24.8*

Teacher Absence

- Per capita income connection – poorer states have higher absence rates (7.2% less absence rate if per capita income doubled)
- Official duty – 1% absence
- Other reasons account for 8-10% absence

Correlations

- Salaries – do not have any association with absence
  - Salaries increase with degree, experience, rank – But absence rate also increases ☹
  - Nominal salaries are very similar across states – relative salaries higher in poorer states, but still higher absence rate
  - Possible reason – little risk of being fired
    - Public schools – 1 in 3000
    - Private – 35 out of 600

Correlations

Category	Yes	No
Rich state (96-97 per capita income > $275)?	21.7	28.0
Female?	21.9	27.2
Older than 40 years?	27.1	21.4
Completed bachelors degree?	21.7	24.2
School has a toilet for teachers?	21.6	27.1
School has electricity connection?	19.2	28.2
Commute < 30 minutes?	21.4	25.2
Rural school?	25.2	22.9
Headteacher is absent?	22.2	18.5
School inspected in the past 3 months?	21.0	27.0
Belongs to this town/village?	21.6	23.3
PTA has met in the past 3 months?	21.0	26.5

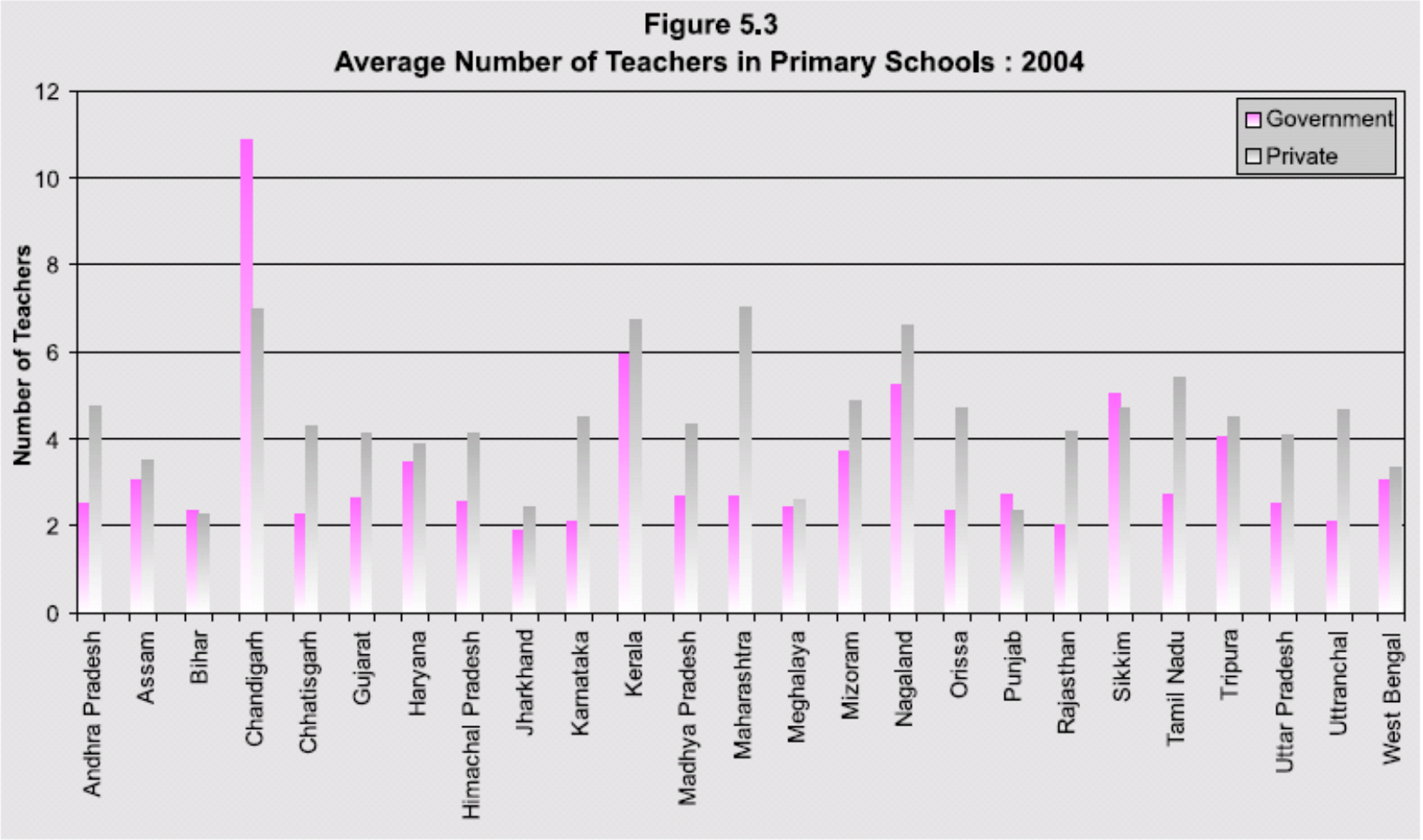
Correlations

- Better Infrastructure
  - Library, electricity, toilets, covered classrooms, etc. – 5 to 7.5% reduction
- Remoteness of school – teachers prefer less remote school
  - 4% reduction in absence rate for schools near paved roads
- Inspections – schools with prior inspection have less absence rates
- Teachers from local community and outside have similar absence rates

Suggestions

- Teacher compensation has little effect on absence
- Better infrastructure provides stronger incentive to attend schools
- Increase frequency of inspection – local communities, PTAs to monitor
- Modified contract rules
- Increased use of private schools

Data Collected using DISE



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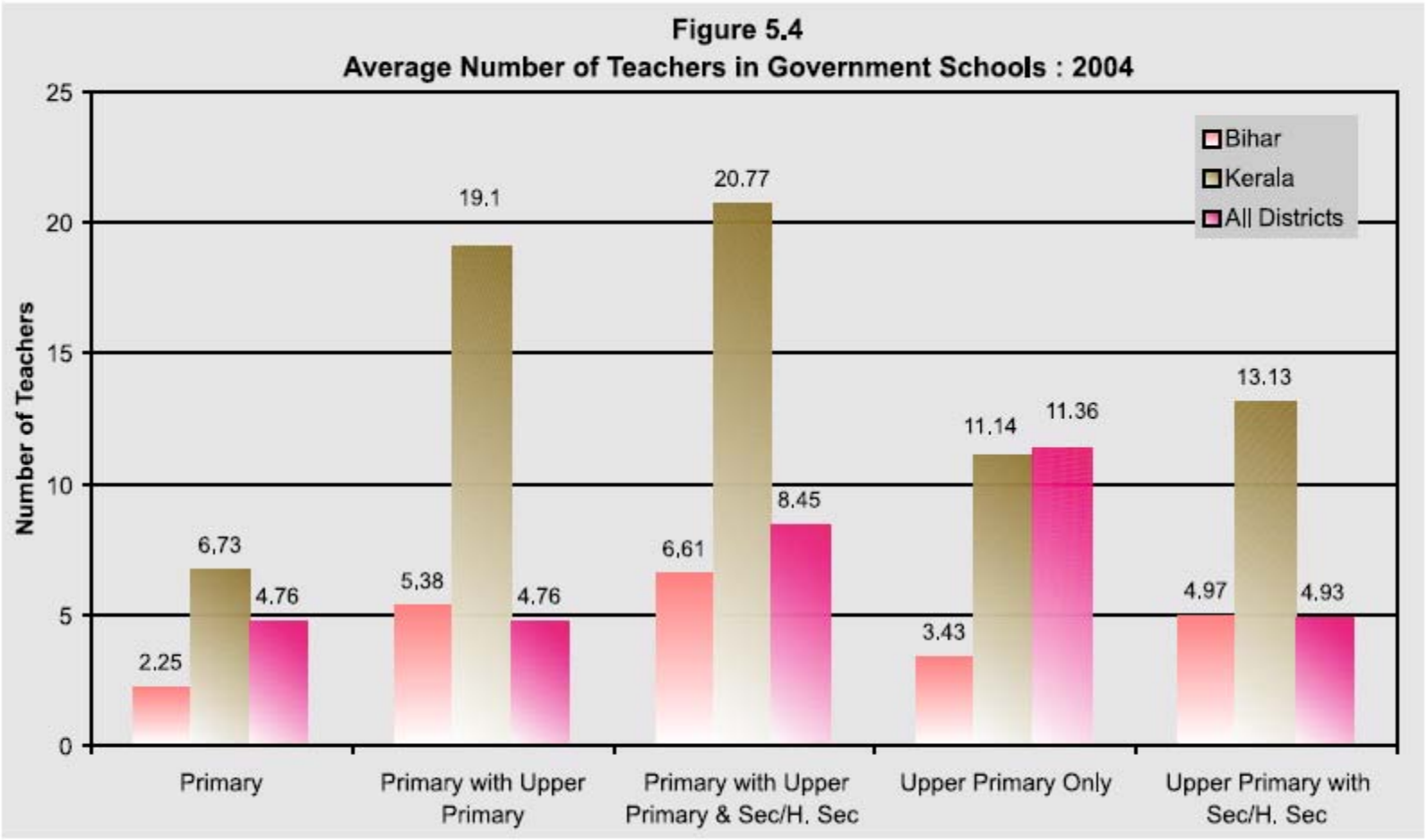

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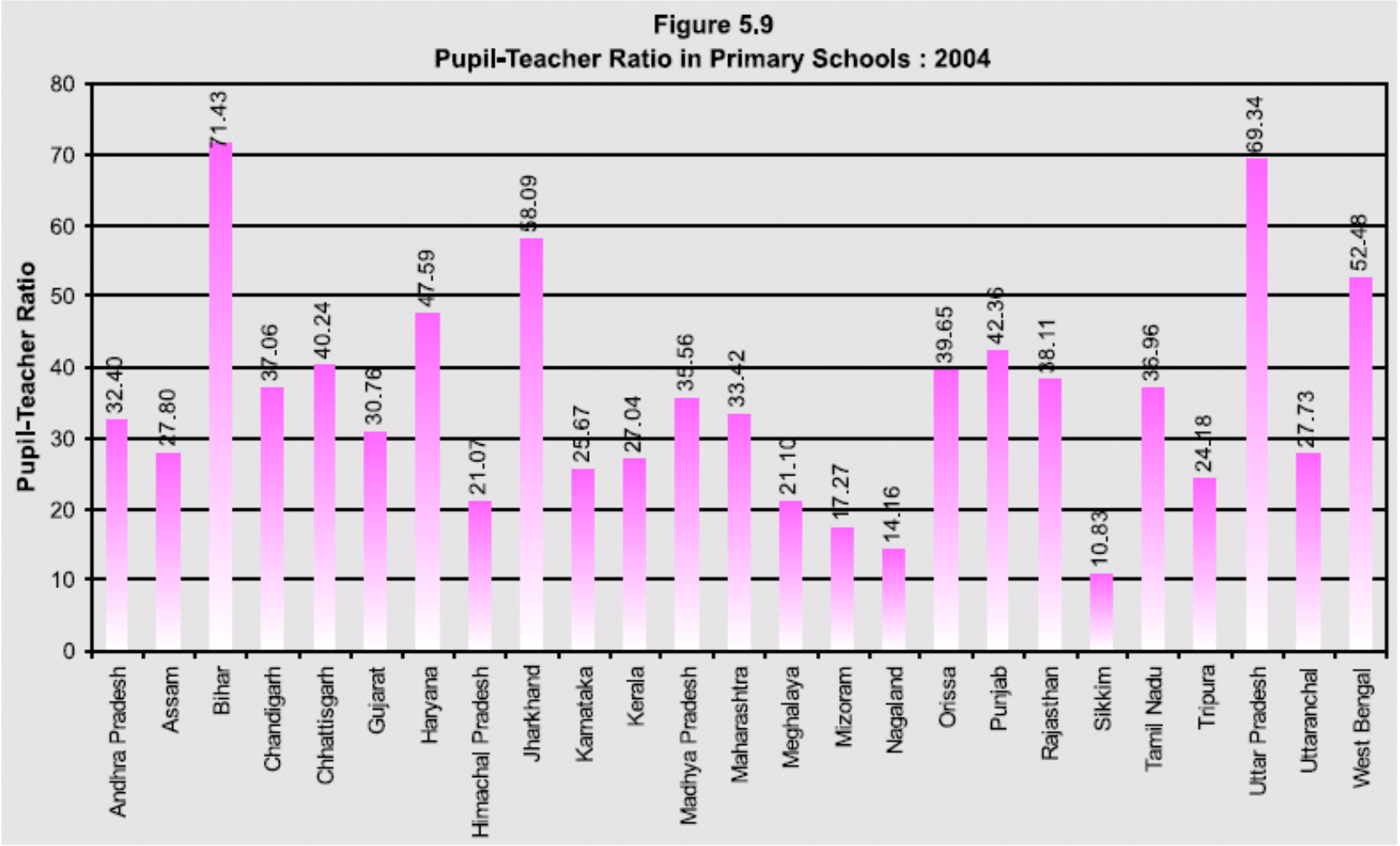

Data Collected using DISE

- Lot more data on male-female ratio, qualification, age profile, caste based categorization

- Teacher absence in India: A snapshot
  - Kremer, Chaudhury, Muralidharan, Hammer, Rogers
- Study covered 20 states
- 3 unannounced visits to 3700 rural primary schools during working hours
- Peru 11%, Bangladesh 16%, Indonesia 19%, Uganda 27%
- 25% India (15% Maharashtra, 21% TN, 24.7% WB, 25.3% AP, 42% Jharkhand)
  - Dependence of absence rates on percapita income of states
  - Doubling per capita income reduces absence rates by 7.2 %
- Official duties (elections, immunizations) 1%
- Annual leave, medical leave 8-10%

- 45% involved actively in teaching (in some states as low as 20%)
  - Rate of teaching activity lower in schools that have higher absence

- Higher teacher salaries do not seem to be associated with lower teacher absence (Table 4: Head 30, regular 23.1%)
- Teachers with a college degree are 2-2.5 percentage points more likely to be absent.
- Being 10 years older increases the probability of absence by around1.0-1.5 percentage points
- Having attended a training program in the past six months is not associated with lower absence.
- Belonging to a district that has a recognition scheme for teachers is not associated with lower teacher absence.

- Only 1 head teacher in nearly 3000 public schools reported ever dismissing a teacher for repeated absence.

- Infrastructure: electricity, covered roof, library, non-mud floor
- Working conditions
- Inspections (in the district)

- Remoteness of school
- Multi-grade teaching