

Equity and the Success of the Sarva Shiksha Abhiyan Programme in Providing Equality of Opportunity in India

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Acknowledgement

The majority of the material in this draft paper was prepared while I was working at the National Centre for Educational Research and Testing, Delhi, and draws extensively on the report of the Year V Survey of National Attainment (Singh et al, 2012)

The Millennium Development Goals

The Millennium Development Goals (MDGs) are eight international development goals which were officially established following the Millennium Summit of the United Nations in 2000, subsequently on the adoption of the United Nations Millennium Declaration (United Nations General Assembly, 2000). All 193 United Nations member states and at least 23 international organizations agreed to achieve these goals by the year 2015. The goals are:

Eradicating extreme poverty and hunger,
Achieving universal primary education,
Promoting gender equality and empowering women,
Reducing child mortality rates,
Improving maternal health,
Combating HIV/AIDS, malaria, and other diseases,
Ensuring environmental sustainability, and
Developing a global partnership for development

Goals 2 and 3 are particularly relevant to this investigation.

Goal 2: Achieve universal primary education

- Target 2A: By 2015, all children can complete a full course of primary schooling, girls and boys

Enrolment in primary education
Completion of primary education

Goal 3: Promote gender equality and empower women

- Target 3A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and at all levels by 2015

Ratios of girls to boys in primary, secondary and tertiary education

Poverty is a major barrier to education, especially among older girls

India's response to this was under the Sarva Shiksha Abhiyan (SSA) programme (Ministry of Human Resource Development, 2012). This is the Government of India's flagship programme for achievement of Universalisation of Elementary Education (UEE) in a time bound manner, as mandated by 86th amendment to the Constitution of India making free and compulsory Education to the Children of 6-14 years age group a Fundamental Right. SSA was implemented in partnership with State Governments to cover the entire country and address the needs of 192 million children in 1.1 million habitations and to provide quality elementary education including life skills. It had a special focus on girl's education and children with special needs and also on providing computer education to bridge the digital divide.

The programme looked to open new schools in those habitations without schooling facilities and to strengthen existing school infrastructure through provision of additional class rooms, toilets, drinking water, maintenance grants and school improvement grants.

The programme was very successful in expanding Primary education, and in fact the Gross Enrolment Ratio for Years I-VI for the country as a whole in 2011 was 114.0. For individual States and Union Territories it ranged from 90.4 per cent, with the majority of states recording figures in excess of 100 per cent¹. This was achieved by a combination of Government and Government-Aided schools (State Schools) and Independent schools. The mean proportion of pupils in State Schools in the States/UTs varied between .40 and 1.00, with the average in the neighbourhood of 0.80.

¹This is not as counter-intuitive as it sounds, as numbers in Primary school are swelled by those starting early, grade repeaters, and over-age pupils starting out.

While Sarva Shiksha Abhiyan provided a variety of inputs designed to ensure access, equity and quality in elementary education, this does not necessarily provide equality of attainment, since there are other factors which promote educational success than those provided by official school-based inputs, factors such as home resources and language spoken at home.

The Data

It is not of course enough to have pupils in primary school. It is obviously important to assess how they are doing while they are there. A series of very large surveys of attainment in government schools in Year III, V and VII/VIII was undertaken to look at this. This was an impressive performance, looking at results for over 120,000 pupils, in 31 States and Union Territories, almost a TIMSS/PIRLS/PISA exercise within one country. Schools were selected using a three stage cluster design. A matrix design was adopted, with each pupil completing assessments in two of the three subjects, so approximately 80,000 had scores in each subject. Note that only government schools were included: this means that overall estimates for some states will be biased in some ways, and may well be underestimates of overall performance. In the third round of these surveys, an IRT methodology was adopted with the aim of providing a handle on progress. This paper looks specifically at the Year V survey. It looked at Language, Mathematics and Environmental Studies (a mixture of Science, Civic Studies and Earth Studies). Scores were standardised to an initial mean of 250 with a standard deviation of 50.

Overall Results

Comparing boys and girls, rural and urban, and caste categories, the following results were observed in Language (Singh et al 2011).

- a) There was no statistically significant difference between scores for boys and girls
- b) There was no statistically significant difference between scores for rural and urban pupils
- c) Caste categories are divided into General, Scheduled Castes, Scheduled Tribes and OBC. It was found that the General category outper-

formed all three other categories, and that the Scheduled Tribes category did worse than all the other categories.

Results were comparable for the two other subjects tested.

The lack of average difference between boys and girls, and between rural and urban, gives one impression of the success of the programme, though as noted earlier it should not be forgotten that this relates only to State schools. However there is still a substantial difference between Caste categories. It would be somewhat optimistic that one could overcome the effect of centuries of differential treatment on attainment over the course of a decade. However a good start would be to look at the facilities and circumstances experienced by pupils: is the education experience comparable for the different groups? This is somewhere official policy can make some progress.

Disadvantaged Groups Comparisons.

This paper looks at the extent to which the programme succeeded in providing equal school and school-related resources and facilities for all regardless of background. This could be characterised as equality of opportunity, or equity of treatment. To this end, we consider the qualities of the schools and teachers who are engaged in providing the education in them. Of course this can be only a partial snapshot, since it relates to the current year, not to the whole education career of the students in the study. However this can give a picture of where the SSA project had arrived at eventually, if not during the entire career of the students. Similarly the teachers in the study would not have in many cases have taught the students for the most recent year, and indeed some of them may not have taught the students concerned at all: we are however able to get a picture of the current state of the schools at which the study pupils were attending. As discussed earlier, a proportion of pupils attend private schools, and these proportions vary from state to state. Not all of such private schools will have superior facilities, however.

We investigate the success of the project in building on existing circumstances in providing equity by comparing the facilities available to two particularly disadvantaged groups with those for more favoured groups. As is well known throughout the world, young people from houses with low socio-economic resources on average do less well than those in better-off homes. This project therefore compares the educational experience, as identified by

this study, of the students identified as in the lowest fifth of the socio-economic index, with the rests of the population. The group in the lowest fifth are designated as **disadvantaged** for the purposes of this paper. The second comparison has a particularly Indian reference, relating to caste. It compares the education circumstances of the Scheduled Tribes (ST) group with those of the General or Other group.

A selection of Educational circumstances is compared between the less favoured groups and the comparison groups. This information was collected by questionnaires to school principals and questionnaires. The variables are grouped into four categories, namely Physical Resources, Characteristics of Teachers, Atmosphere and Ethos of School Attended and School-related Home behaviour.

Physical resources.

1. Well resourced. Schools are divided into Well-Resourced (20 or more of the 26 resources asked about in the study), and those Less Well-Resourced.
2. High Student teacher ratio. Schools are divided into those with a Student/teacher ratio of 40 or less, and over 40.
3. School has a Computer (Yes, No).
4. Ratio of Students to Computer (less than 2.0 vs. the rest).
5. Days in School Year 200 or more *vs.* those which for whatever reason were unable to manage this.
6. School has a Science Lab (Yes/No)
7. School has a Member of Staff to Help with science experiments (Yes, No).
8. School has Official SSA Textbooks in all three subjects (Language, Mathematics and EVS) (Yes, No).
9. School has Official SSA Workbooks in all three subjects (Language, Mathematics and EVS)
10. School has Official SSA Handbooks in all three subjects (Language, Mathematics and EVS)
11. School has Teaching Learning Materials in all three subjects.

Qualities of teaching staff

This combines formal qualifications and experience.

1. It is generally accepted that it is important that teachers should have undergone a formal training. This variable compares the proportions with Graduate Qualifications in the groups
2. Formal qualifications are not the only consideration. It is often considered that teachers need to have a degree of practical experience to be able to utilise their full potential. The variable identified those with more than Five Years Experience.
3. Age also goes with experience, and often authority. We compare the proportions of Teachers Aged over 30.
4. Stability of staff is important. We compare the proportions of teachers who have been over Five years in their Current School.
As well as qualifications classroom practice is important. We compare the proportions of teachers who stated that they:
5. Keep a Teacher Diary
6. Use the Teacher Handbook
7. State that he or she gives Regular Homework. It is not enough of course just to give homework: to be fully useful it must be actually done and checked. (Pupils' reports of homework given and checked are described separately below under Home-school interaction)

School atmosphere and ethos

It is not sufficient to have good facilities and well-qualified staff, though obviously this will be very important. It is important that the school atmosphere and general ethos both of teachers and teachers are positive.

1. Unpleasant Experiences. Students were asked about a number of unpleasant experiences at school, namely: Something of yours was stolen; You were hit or hurt by other pupils; You were made to do things that you did not want to; You were called by names; You were left out. This variable compares the number of these Unpleasant Experiences that students reported.
2. Problem Behaviour. School principals were asked about problem behaviours amongst students, specifically: Arriving late at school; Absenteeism; Skipping class; Violating dress code; Classroom disturbance; Cheating; Profanity; Vandalism; Theft; Intimidation/verbal abuse of other students; Physical injury to other students; Intimidation/verbal abuse of teachers/staff; Physical injury to other teachers. If the school

encountered any of these once a week or more, it was considered to have Problem Behaviours among Students.

3. Feel Safe. Teachers were asked about their perception of school safety, whether the school was located in a safe neighbourhood, whether they felt safe at the school, and whether the school's security policies were practices were sufficient. If they were happy with all of these, then the school was described as having teachers who felt safe.
4. Difficulty recruiting. This was where a school reported that it was very difficult to fill vacancies.
5. Understanding curriculum. Did respondents to the teacher questionnaire report that teachers' understanding of the curricular goals was High or Very High?
6. Success implementing curriculum. Did respondents to the teacher questionnaire report that teachers' degree of success in implementing the curriculum was High or Very High?

Home-School Interaction

1. Absenteeism. This variable looked at the proportion of students absent from school for one week or more in the previous month.
2. Homework every day
3. Homework checked at home.
4. Homework checked at school. There was little variation in this as the vast majority of pupils reported that their homework was checked in school, but such variation as there was, was certainly related to attainment.

Results: disadvantaged group².

Resources.

Table 1 compares the 'disadvantaged' group (the lowest fifth on the socio-economic index) with the remainder of the population on a range of school physical resources. It can be seen that there still is a gap in provision of school resources between the two groups and provision, or lack of it, seems to reinforce socio-economic inequalities. Students from a disadvantaged background are less likely to be in schools which

- are well-resourced

² As is usual in international studies, to allow for the similarity in pupils within schools, a jackknife method was used to estimate standard errors (see, e.g., see, e.g., TIMSS, 2003, Willms and Smith, 2005). The program used for this was the IDB Analyzer (IEA 2012).

- have a computer
- have a science lab
- have assistance with science experiments
- have Textbooks in all three subjects
- have Handbooks in all three subjects

They are also less likely to be in schools which

- have had fewer than 200 days per year.

If this result is reliable, it may be that teachers in this type of school are working harder to compensate for the other disadvantages, but it is difficult to interpret without knowing more of the background.

There is no detectable difference on schools having

- high numbers of students per teacher.
- fewer than 2 pupils per computer
- serious problems with facilities
- workbooks in all three subjects
- teaching learning materials

Teachers.

There is no detectable difference (Table 2) in teacher qualifications or experience, but teachers for the disadvantaged group are more likely to report Giving regular homework.

Atmosphere and ethos.

There is only one difference (Table 3) in atmosphere and experience, namely that disadvantaged students are **less** likely to report having had unpleasant experiences in school.

Home-school interaction (Table 4)

Pupils from disadvantaged homes are more likely to exhibit absenteeism.

have homework every day

And less likely to

have their homework checked at home.

There is a small difference on having homework checked in school, but only in the third decimal place.

Scheduled tribes

Resources. (Table 5)

The picture is less clear cut for the comparison between Scheduled Tribes and the General or Other category. ST schools are less likely to

- Be well-resourced
- Have a science lab
- Have help with experiments
- Have serious problems with facilities.
- Have all three workbooks, and
- Teaching learning materials

However they are also less likely to have

- Student/teacher ratio over 40
- Have more than 2 pupils/computer
- Be open less than 200 days/year

And more likely to have

- Workbooks in all three subjects (maths, language, science)

Teachers (Table 6)

Teachers in the schools where ST students attend are less experienced, younger and less likely to be full time regular teachers. They are less likely to keep a teacher diary or claim to give regular homework

Atmosphere and ethos (Table 7)

ST students are more likely to have had unpleasant experiences at school and less likely to feel safe. There is no detectable difference in misbehaviour and difficulties in recruiting. Teachers are less likely to feel that teachers in their schools, including, presumably, themselves

- Understand the goals of the curriculum
- Are successful in implementing the curriculum.

Home/school interaction (Table 8)

ST pupils are less likely to have homework every day, or to have it checked at home. There is no detectable difference in absenteeism or in having their homework checked at school.

Conclusions

As of 2010, in implementing the Millennium Development Goals, the Government of India had been impressively successful in ensuring that a very high proportion of primary age pupils attend school. Gender differences, and rural/urban differences were also small, but differences between caste groups still persisted. There were also wide differences in attainment between successful and less successful pupils. To ensure reductions in such inequalities, it will be necessary to ensure that resources available to disadvantaged pupils are at least the equal of those for more fortunate contemporaries (OECD, 2010). This paper looked at two particularly disadvantaged groups, those in the lowest fifth on a socioeconomic resources variable, and those in the Scheduled Tribes group. It is found that for the preponderance of resources considered, the disadvantaged groups, far from being positively resourced, lag behind those groups already in more favoured circumstances.

Table 1: School facilities: 'Disadvantaged' vs 'The Rest'

Characteristic	Rest	s.e.	Disadvan-	s.e	signif
Well-resourced	0.36	0.0 [^]	0.26	0.02	*
Student-Teacher ratio (More than	0.12	0.01	0.15	0.02	
Pupils per computer (Less than 2)	0.52	0.09	0.53	0.09	
School has computer	0.47	0.00	0.30	0.01	**
200 days per year	0.78	0.01	0.83	0.01	**
Science laboratory	0.3	0.01	0.17	0.01	**
Help with Experiments	0.63	0.01	0.55	0.01	**
Problems with facilities	0.49	0.01	0.49	0.01	
Textbooks in all subjects	0.89	0.01	0.88	0.01	*
Workbooks in all subjects	0.61	0.01	0.61	0.01	
Handbooks in all subjects	0.73	0.02	0.69	0.02	*
Teaching and learning material in	0.82	0.02	0.83	0.01	

SE is the standard error associated with the measured proportion for the group. ** P<.01 and * P< .05

Table 2: Teachers Characteristics: 'Disadvantaged' vs 'The Rest'

Characteristic	Rest	s.e.	Disadvan-	s.e	signif
More than 5 years in a school	0.47	0.04	0.41	0.01	
Teaching experience (More than	0.68	0.01	0.66	0.02	
Age (More than 30 years)	0.8	0.01	0.78	0.01	
Graduate Qualification	0.65	0.01	0.64	0.02	
Regular teachers	0.83	0.02	0.79	0.02	
Keep teacher's diary	0.86	0.01	0.89	0.01	
Teacher's handbook	0.84	0.01	0.83	0.01	
Give regular homework	0.87	0	0.9	0.01	**

** P<.01 and * P< .05

Table3: Atmosphere and Ethos: 'Disadvantaged' vs 'The Rest'

Characteristic	Rest	s.e.	Disadvan-	s.e	signif
Unpleasant experiences	1.27	0.01	0.98	0.03	**
Problem behaviour	0.23	0.02	0.25	0.02	
Feel safe	0.74	0.01	0.72	0.02	
Difficulty in recruiting	0.14	0.02	0.16	0.02	
Understanding curriculum	0.65	0.09	0.65	0.04	
Success in implementing cur-	0.53	0.08	0.53	0.02	

SE is the standard error associated with the measured proportion for the group. For this variable, students were asked about the frequency of unpleasant experiences, hence the reported value is a number not a proportion. ** P<.01 and * P< .05

Table 4: Home-School Interaction: 'Disadvantaged' vs 'The Rest'

Characteristic	Rest	s.e.	Disadvan-	s.e	signif
Absent for 1 week or	0.68	0.00	0.73	0.01	**
Homework every day	0.71	0.01	0.77	0.01	**
Homework checked at	0.85	0.01	0.7	0.01	**
Homework checked in	0.97	0.002	0.97	0.002	**

** P<.01 and * P< .05

Table 5: Scheduled Tribes vs Other: School facilities

Characteristic	Other	s.e.	ST	s.e	signif
Well-resourced	0.39	0.01	0.22	0.01	**
Student teacher ratio (More than	0.13	0.01	0.09	0.01	**
Pupils per computer (Less than 2)	0.51	0.02	0.58	0.02	**
School has computer	0.48	0.01	0.51	0.01	*
200 days per year	0.79	0.01	0.76	0.01	
Science laboratory	0.34	0.01	0.26	0.01	**
Help with Experiments	0.66	0.01	0.52	0.01	**
Problems with facilities	0.49	0.01	0.43	0.01	**
Textbooks in all subjects	0.89	0.01	0.89	0.01	
Workbooks in all subjects	0.6	0.01	0.56	0.01	*
Handbooks in all subjects	0.71	0.01	0.74	0.01	*
Teaching and learning material in	0.84	0.01	0.73	0.01	**

** P<.01 and * P< .05

Table 6: Scheduled Tribes vs Other: Teachers

Characteristic	Other	s.e.	ST	s.e	signif
Unpleasant experiences	0.46	0.03	0.53	0.02	
Problem behaviour	0.68	0.02	0.63	0.01	*
Feel safe	0.82	0.01	0.76	0.01	**
Difficulty in recruiting	0.69	0.04	0.60	0.04	
Understanding curriculum	0.88	0.01	0.79	0.02	**
Success in implementing cur-	0.83	0.01	0.83	0.04	
Unpleasant experiences	0.89	0.01	0.78	0.02	**

** P<.01 and * P< .05

Table 7: Scheduled Tribes vs Other : Atmosphere and Ethos

Characteristic	Other	s.e.	ST	s.e	signif
Unpleasant experiences	1.19	0.02	1.32	0.02	**
Problem behaviour	0.22	0.01	0.22	0.01	
Feel safe	0.74	0.01	0.69	0.01	**
Difficulty in recruiting	0.74	0.01	0.15	0.01	
Understanding curriculum	0.7	0.02	0.54	0.01	**
Success in implementing cur-	0.57	0.02	0.42	0.02	**

** P<.01 and * P< .05

Table 8: Scheduled Tribes vs Other: Home-School interaction

Characteristic	Other	s.e.	ST	s.e	signif
Absent for 1 week or	0.69	0.00	0.69	0.01	
Homework every day	0.7%	0.01	0.60	0.01	**
Homework checked at	0.86	0.00	0.69	0.01	**
Homework checked in	0.97	0.00	0.97	0	

** P<.01 and * P< .05

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