In the Margins:
Social Inequality in Children's Educational Outcomes in India

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Abstract:

Indian society has long been stratified along the axes of caste, ethnicity and religion. Not surprisingly, this inequality is reflected in educational attainment. However, the precise mechanisms by which this inequality manifests itself remains open to debate with a variety of hypotheses being advanced such as poverty, child labor, lack of access to schools, teacher discrimination and lack of parental interest in education. Unfortunately, there is little empirical research examining these hypotheses.

This paper utilizes a newly collected nationally representative survey sample data for 40,000 households to examine social inequality in children's educational outcomes for 8-11 year old children with a specific focus on reading skills, arithmetic skills and writing skills.

Introduction:

India is a predominantly Hindu nation with substantial religious diversity. Muslims form about 13 percent of the nation with other religious minorities such as Christians, Sikhs and Jains forming another 3 percent. However, the remaining population is also highly differentiated. About 8 percent of the population identifies itself as being *adivasi* (the original inhabitants of the land) or tribal, located outside the Hindu caste system. Another 16 percent of the population is considered *dalit*, belonging to the lowest castes that were considered impure by high caste Hindus. Adivasis and dalits are officially listed in a schedule appended to the Indian constitution and called scheduled caste (SC) or scheduled tribe (ST).

While a variety of affirmative action programs are in place to bridge educational, occupational and income disparities between the dalit (Scheduled Caste), adivasi (Scheduled Tribe) and general populations, substantial educational disparities persist. Table 1 based on our past research (Desai and Kulkarni, 2005) shows that the dalits and adivasis as well as Muslims tend to lag behind Hindus and other religious groups. We have also found that a great deal of this inequality emerges in primary school with children from the marginalized groups dropping out before completing primary school. In fact, Table 2 (Desai and Kulkarni, 2005) indicates that if these children manage to complete primary school, their likelihood of completing middle school is much closer to that of the other groups. This suggests that primary school is an important site for creation of educational inequality.

Sources of Educational Inequalities:

Racial and ethnic educational inequalities around the world have received a lot of research attention with different lines of research emphasizing different factors. Research on developing countries has tended to focus on two sets of factors: (1) Lack of access to schools. Since marginalized communities often live in distant locations they may lack access to schools within a reasonable commuting distance. (2) Family factors including poverty, lack of parental motivation or labor demands on children (for a review of this literature, see Shavit and Blossfeld 1993).

Research on industrial societies has tended to go beyond access and family factors to look at the role of the schools and communities in facilitating or inhibiting learning outcomes. In the United States, research has sought to clarify the individual, family and school compositional causes of racial, ethnic and class educational inequality. At the individual level, poor academic performance, retention, lack of teacher support and guidance, disliking school or teachers, and taking on adult responsibilities such as work and childcare have been found to contribute to lower achievement and dropping out of school. (Barro 1987, Croninger and Lee 2001, Jimerson 1999, Rumberger 1995) Parental educational attainment, parental involvement, household income and household wealth have informed family contributions to educational attainment (Rumberger 1987, 1995; Hauser et al 2000) Analyses of school and neighborhood composition have found that urbanicity, socioeconomic composition of the school significantly predict academic achievement. (Rumberger and Palardy 2005; Okpala et al 2001) Specifically, Rumberger and Palardy found school SES has as much effect on educational attainment as the individual socioeconomic status of the student, regardless of race, social class or prior academic achievement, although high teacher expectations and positive academic climate eliminate the school-level effect of socioeconomic composition. (2005) Disaggregate data often find that the effect of these factors varies across racial, ethnic and socioeconomic measures. (Rumberger 1995) Thus, the U.S. literature suggests that an interaction of individual and school-level factors contribute to educational attainment at the intersection with race, ethnicity and socioeconomic status.

While qualitative literature in developing countries has also highlighted the role of schools and teachers in creating educational inequalities, much of this evidence tends to be anecdotal. For India, qualitative research paints a stark picture of the indignities suffered by dalit and adivasi children. There are reported instances of dalit children suffering from discrimination by teachers and other students. Eighty percent of the dalit students at a college in Aurangabad said that they were made to sit outside the classroom in primary school. In another study, a dalit school teacher recalled, ‘We were asked to sit separately. Our copy or slates were not touched by the teachers’ (The Probe Team 1999). Dalit homes are located outside of the main village and consequently farther from schools. It was observed in a village in Tamil Nadu that “None of the Scheduled Castes were even allowed to walk through the residential areas of the dominant castes

or through the village's main street running through the residential areas of the dominant castes. They had to walk a long way along the periphery of the village to reach their huts" (Nambissan and Sedwal 2002). Teacher behavior often tends to humiliate dalit students. Upper caste teachers have low expectations of dalit pupils and consider them as 'dull' and 'uneducable' (The Probe Team 1999).

Adivasis, in addition to suffering from the same low expectations, face a different set of issues. They often live in hilly regions or forests which are relatively inaccessible. Demographically, tribal habitations are small and sparsely populated and hence, lack many infrastructure facilities including schools and roads. Even when schools are within walking distance for pupils, during monsoons it is not unusual for the roads to become impassable and for the teachers, who often live in larger towns, to surreptitiously close the school. These factors are particularly constraining for tribal children who live in isolated communities. Language poses another major challenge for tribal education. Tribals normally speak local dialects rather than the main state language. Consequently, tribal students feel further alienated when the teachers are not well trained to communicate in the tribal dialects (Sujatha 2002).

Muslim students suffer from similar disadvantages. Many Muslims would like to see education take place in Urdu, their mother tongue but few schools accommodate this. Children often face harassment and ridicule and rising religious tensions lead to children's alienation from the school. Many Muslim students get primary education at madrasa, the religious school, which makes mainstreaming for secondary schooling often difficult.

Poor quality of schooling and teacher discrimination seems to play an important role in school drop out. A survey of 226 never-enrolled children found that 32 percent of the boys and 23 percent of the girls were never enrolled because the child was not interested. Among 106 drop-outs in the same survey, it was observed that 35 percent of the boys and 16 percent of the girls dropped out because the child did not wish to continue (The Probe Team, 1999).

Unfortunately the issue of teacher discrimination is confounded with the drop-out due to financial pressures on the family and the need for child labor. In this paper we will try to distinguish between some of these factors to examine school enrollment as well as educational outcomes of children aged 8-11.

Data:

In 2004-2005, University of Maryland and National Council of Applied Economic Research designed and fielded a survey of 40,000 households. This survey, titled "Univ. of Maryland-NCAER Human Development Survey of India" contained questions about, health, educational, employment and income and gender empowerment. The survey was conducted all over India – in 25 states and Union Territories – and included urban as well rural areas. This data collection was funded by grants from National Institute of Health to Univ. of Maryland.

A major innovation of this survey was to conduct short assessments of reading, writing and arithmetic skills for children aged 8-11. Conducting

educational assessment in developing countries – particularly India -- is difficult for a variety of reasons: children's ability varies tremendously and an instrument must capture children at both ends of the distribution; tests must be translated in many different languages with similar difficulty levels; instrument must be simple and intuitive so that interviewers can administer it easily and it would not frighten children who are not used to standardized tests. Luckily we were able to work with ***Pratham***, a voluntary organization that has worked in the field of elementary education for many years. They have developed simple assessment tools to measure the effectiveness of their training programs. These tools have been pretested on more than 250,000 children. Working in collaboration with Pratham, we were able to develop simple tests to measure whether a child is not able to read at all, or is able to read letters, words, sentences, paragraphs or stories. Simple addition, subtraction, multiplication and division problems were also developed. Children were asked to write simple sentences and were considered able to write if they could write a simple sentence such as "I like blue color" with zero or one mistakes.

Interviewers were trained extensively by Pratham volunteers using specially developed films so that they could differentiate between a child's shyness and inability to read. They were also taught how to develop rapport with children. Tests were developed in a variety of Indian languages as well as English and children were asked to take the test in whichever language they were most comfortable in.

As a result we have access to a survey that contains unique child assessment data as well as a wealth of household socioeconomic information. Additionally, children were asked whether they like school and whether their teacher treats them fairly.

Conceptual Framework and Hypotheses:

We have argued that lack of positive interactions with teachers and an insensitive school system creates an environment in which minority children may not thrive, reducing their enjoyment of school and learning. Poor school performance is often a precursor of dropping-out of school. This paper will test the following hypotheses:

1. Holding household socio-economic factors constant, children from dalit, adivasi and Muslim families are less likely to perform well on educational tests than their peers at the same grade level.
2. Some of the effect of caste/tribe/religion will be mediated through children's enjoyment of school and rapport with teachers.
3. Some of the effects of caste/tribe/religion are likely to be due to the school composition however, addition of controls for school composition and performance of other children in the village/urban block is unlikely to eliminate all effects of caste/tribe/religion.

4. The effect of caste/tribe/religion is likely to vary across states and between urban and rural areas. Minority children will be less disadvantaged in urban areas and in states where minorities form a larger proportion of the population such as the North East.

This analysis adopts the multilevel approach prevalent in the U.S. literature on educational attainment to measure individual, family and compositional effects on schooling, and how these effects vary by caste, ethnicity, religion and gender.

We expect individual academic achievement to be influence by demographic characteristics, such as gender, caste, ethnicity, and religion, controlling for grade level. Thus, girls and minority children, such as the dalits and adivasis will likely have lower achievement. We expect positive teacher interactions and student enjoyment of school to positively predict student outcomes, while negative school experiences will have a negative effect. In order to measure the compositional effects of neighborhood schooling, we also conduct a village-level analysis. We expect that the village-level analyses will reveal aggregate differences by caste, ethnic and religious in educational achievement. Using multilevel analyses, we will determine the amount of variance attributable to village composition, and identify any contextual effects.

One complication for this analysis lies in the interaction between school attendance and learning outcomes. Children with lower performance may be more likely to drop out and dropping out leads to skill deterioration. A simple model may be to first examine caste/tribe/religion effects for all children and then to carry out the same analysis for children currently in school. After this preliminary analysis, we will explore other modeling strategies.

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Table 1: Educational Attainment and Transition Probabiliies
Probabilities at Various Education Levels, 1999-2000

Educational Attainment		Transition Probability**
Upper Caste Hindu & Other Religion		
Illiterate &	30.40	
Primary	17.45	0.70
Middle	23.88	0.82
Secondary	22.82	0.66
College	5.45	0.34
	100.00	
Dalit		
Illiterate &	50.45	
Primary	17.88	0.50
Middle	18.49	0.71
Secondary	11.61	0.52
College	1.57	0.22
	100.00	
Adivasi		
Illiterate &	57.29	
Primary	15.08	0.43
Middle	16.58	0.72
Secondary	9.57	0.52
College	1.48	0.25
	100.00	
Muslim		
Illiterate &	48.05	
Primary	17.95	0.52
Middle	19.53	0.71
Secondary	12.56	0.52
College	1.91	0.25
	100.00	

* Only people who completed the previous level and are of appropriate age at included in calculating transition probabilities

** Transition probability indicate the probability of transition from the previous level to the current level given the completion of the previous level.

Source: Desai and Kulkarni (2005) using National Sample Survey Data for 13-29 year old youths.