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Abstract

The issue of language suffuses Indian education. This takes two forms. First, there is the question of how many languages students should learn at school and college. The second is the question of the language in which education should be imparted. Against this background, this paper uses data from the National Sample Survey from 2014 and 2008 to examine the use of English as the medium of instruction in Indian education: the advantages it confers in terms of broadening subject, and hence career, choice and inequality between India's social groups in access to education in English. In terms of social group, there was a clear hierarchy with the probability of studying in English being highest for students from the non-Muslim upper classes and lowest for students from the Scheduled Castes. The majority of pupils studying in English attended private unaided institutions. Compared to educational institutions in their entirety, private unaided institutions catered disproportionately to students studying in English than they did to students studying in Hindi or other languages.

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Introduction

The issue of language suffuses Indian education. This takes two forms. First, there is the question of how many languages students should learn at school and college. The second is the question of the language in which the main subjects taught should be imparted: this language is referred to in this paper as the medium of instruction (MoI).

Language in India is considered to be not just a tool of learning but also a symbol of national, ethnic, and regional identity. The Census of India, 2001, identified 122 languages that were spoken by more than 10,000 people in India and, of these, 22 are accorded a constitutional status by being included in Schedule VIII of the Constitution of India[1] (Census of India, 2001a). Furthermore, Article 345 of the Indian Constitution states that these 22 languages can be 'used for all or any of the official purposes of that State' (Ministry of Home Affairs, 1963). The Constitution recognises Hindi as the official language of India for purposes of communication between the Union and a State. English is accorded the position of the 'associate' official language in states that have not adopted Hindi as their official language (Ministry of Home Affairs, 1963).[2] The State is mandated by the Constitution to provide for primary education through the mother tongue (Jayaram, 1993) and students are expected to learn three languages according to the policy of graded 'three-language formula'[3] recommended by the

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[1]   Articles 350A and 350B offers protection for languages of minority groups which were commonly not among the languages mentioned in Schedule VIII of the Constitution. Protection is in the form of directing the State to 'provide adequate facilities for instruction in the mother tongue at the primary stage of education to children belonging to linguistic minority groups' and an ombudsman (Commissioner for Linguistic Minorities) whose sole responsibility is to safeguard the educational and linguistic rights of minorities.

[2]   Hindi, Bengali, Telugu and Marathi are the top four scheduled languages, with 41.03% of the population declaring that they speak in Hindi or its sub-group mother tongue (Census of India, 2001b).

[3]   The origins of the three-language policy are in the Central Advisory Board of Education in 1956. The Education Commission (1964-66) modified this policy for its effective implementation. While, providing details on the origins of the three-language policy, the Report of the Education Commission mentions the 'political and social, rather than educational considerations'. It observed the three-language formula introduced in the Central Advisory Board of Education (CABE) in 1956, 'in effect established equality with regard to the study of languages between the Hindi and non-Hindi areas'.... 'in practice, the implementation has not been successful due to several factors'... one of them being 'the lack of motivation for the study of an additional modern Indian language in the Hindi areas; the resistance to the study of Hindi in some non-Hindi areas (p. 191).'

National Commission on Education 1964–1966, and incorporated into the national education policies of 1968 and 1986.[4]

The Education Commission (1964-66) underlined the importance of English by emphasising the study of English 'as a language right from the school' to enable students to successfully graduate from the University (MOE 1968). The expectations from the schools, as observed by the Commission, were to get students ready for college and a 'successful completion of first degree courses'. The Commission viewed a command over English as an important condition for success in higher education. Consistent with this recommendation, all-India (centrally-funded) schools that admit students from across different parts of the country and private schools affiliated to nationally recognised education boards use English as their medium of instruction. However, Government schools that are affiliated to the State education boards employ the regional language as the medium of instruction.

In higher education, English continues to be the principal MoI for many courses such as Engineering, Medicine, Law, Maths, and Computer Sciences. Globalisation and automation have impacted the types of skills required by industry and global commerce, and proficiency in English is a necessary requirement for many of these new job opportunities being thrown up. English is now being considered as a language of globalisation (Varghese, 2013). The OECD notes that "English is the premier language of business and professions and the only global language of science, research and academic publication" (OECD, 2008, p.20). Mathews (2013) regards English as the 'Latin of the 21st century'. The knowledge of English empowers students, while a lack of skill in the language seriously handicaps them (Varghese, 2013).

Against this background, this paper examines the use of English as the MoI in Indian education: the advantages it confers in terms of broadening subject, and hence career, choice and inequality between India's social groups in access to education in English. Krishna (2013) has made a persuasive case for the importance of English in India.[5] Even if participation in higher education by persons from India's deprived groups is increased, a relatively poor command of English either debars them from or handicaps them in, studying subjects like Engineering, Medicine, Law, IT and

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[4] According to this policy the three languages are: '1) one's mother tongue or the regional language; 2) the official language of the Union or the associate official language of the Union so long as it exists; and 3) one of the Scheduled languages listed in the VIII schedule or foreign language not considered under 1 or 2 and other than that used as the medium of instruction (Ministry of Education, 1971, P192).'
[5] See also Rahman (2012)

Management. Perhaps it is for this reason that the well-known *Dalit* academic, Kancha Ilaiah argued that "The *Dalit*'s main agenda is not reservations. My way of equality is English education. My hope is education, not reservation - and I emphasise, English education."[6] This, too, is the main argument of the paper, based on a careful analysis of National Sample Survey (NSS) data for 2014; for true equality of opportunity in education, there should not just be equality of access to education *per se* but also equality of access to education in English.

The Data

The data for this study are from the 71st Round of the National Sample Survey (NSS), pertaining to the period January-July 2014, and from the 64th round pertaining to the period July-2007-June 2008. Both the 71st and the 64th and NSS rounds, unlike the more 'generalist' rounds, are aimed at providing specific information on education. Before describing the data, it is important to draw attention to the fact that all the results reported in this study are based on grossing up the survey data using the observation-specific weights provided by the NSS for each of the surveys.

The 71st (and the 64th) NSS rounds provided information about whether the respondents *between the ages of 5 and 29 years* were currently in attendance at a variety of educational levels from primary school upwards. From this information the study focuses on those attending: primary education (typically 5-10 years, inclusive); upper primary education (typically 11-13 years, inclusive); secondary education (typically 14 and 15 years, inclusive); higher secondary (typically 16 and 17 years, inclusive); and higher education (typically 18-22 years, inclusive).[7]

An item of particular interest to this study was the construction of the social groups with each person in the estimation sample being placed in one and only one of these groups. The NSS categorised persons by four social groups (Scheduled Tribes (ST); Scheduled Castes (SC); Other Backward Classes (OBC); and 'Other') and simultaneously by eight religion groups (Hindus; Islam; Christianity; Sikhism; Jainism; Buddhism; Zoroastrianism; 'Other'). Since Jains and Zoroastrians comprised less than 0.25% of the sample they are not separately identified in this study but included in the 'Other' category. The fact that Muslims, too, have their 'backward classes' and 'forward' classes, with a conspicuous lack of inter-marriage between the two groups,

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[6]   Interview with Kancha Ilaiah, *Times of India*, 15 February 2013, http://timesofindia.indiatimes.com/interviews/Kancha-Ilaiah-Even-if-10-dalit-children-got-English-education-India-would-change/articleshow/18503625.cms? (accessed 24 April 2016).

[7]   These age bands are purely indicative and there will be several persons at each educational level whose age fell outside the typical age band

meant that it was sensible to separate Muslims into two groups: Muslims from the OBC and non-OBC Muslims.[8]

Combining the NSS 'social group' and 'religion' categories, we subdivided households into the following groups which are used as the basis for analysis in this paper:

1.   Scheduled Tribes (ST). These comprised 13.1% of the 65,923 households in the 71st NSS round and 9.5% of the grossed up NSS of 2,484,620 households.

2.   Scheduled Castes (SC). These comprised 16% of the 65,923 households in the 71st NSS round and 18.9% and of the grossed up NSS of 2,484,620 households. Over 90% of households in this category were Hindu.[9]

3.   Non-Muslim Other Backward Classes (NMOBC). These comprised 32.7% of the 65,923 households in the 71st NSS round and 36.1% of the grossed up NSS of 2,484,620 households with 96% of these households being Hindu.

4.   Muslim Other Backward Classes (MOBC). These comprised 6.4% of the 65,923 households in the 71st NSS round and 6.7% of the grossed up NSS of 2,484,620 households.[10]

5.   Muslims who were not from the Other Backward Classes. They are, hereafter, referred to as Muslim Upper Classes (MUC) comprised 6.2% of the 65,923 households in the 71st NSS round and 5.7% of the grossed up NSS of 2,484,620 households.

6.   Non-Muslim Upper Classes (NMUC). These comprised 25.7% of the 65,923 households in the 71st NSS round and 23.1% of the grossed up NSS of 2,484,620 households: over 90% of the households in this category were Hindu.

The second feature relating to organising the data is an economic measure of deprivation. In two seminal papers, Basu (2001, 2006) proposed a *quintile axiom*, according to which "we should focus attention on the per-capita income of the poorest 20% of the population ('quintile income') and the growth rate of the per-capita income of the poorest 20% ('quintile growth') (Basu, 2001, p. 66). Using this axiom, we constructed quintiles of household MPCE over *all* the households in the 71st round and all the households in the 64th NSS round; following that, we defined a person as being

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[8]   See Sachar Committee Report (2006).
[9]   This category also included some Muslim households. Since Muslims from the SC are not entitled to SC reservation benefits these Muslim SC households have been moved to the Muslim OBC category.
[10]   Including Muslim SC households (see previous footnote).

'poor' if his/her household's monthly per capita expenditure (MPCE) was in the bottom 20% of the distribution of MPCE. *Ipso facto* a person was not poor ('non-poor') if his/her household's MPCE was in the upper 80% of the distribution.

The Rise of English as a Medium of Instruction in India

English, as a medium of (classroom) instruction in India, is witnessing a steady increase over the years, with students' school experiences systematically undergoing a change. The analysis of the data in table 1 shows that there is a social transformation taking place, with an overall decline in the use of Hindi and regional languages as the medium of instruction (from 46 percent in 2007 to 44 percent in 2014 for Hindi, and 36 percent in 2007 to 31 percent in 2014 for regional languages). Moreover, the all-India average of majority of students studying in Hindi (44 percent), followed by regional languages (31 percent) in 2014, does not reveal the extent of change in the language preference taking place in Indian states over the years, with English gaining popularity as the medium of instruction.

Table 1 also shows, for the 71st and 64th rounds, the proportion of persons in age 5-29 across states, who were studying a course with English as the MoI. In the 64th round (2007-08), 15 percent of all persons in age group 5-29, were studying in English; by the   71st round, this proportion had risen to 26 percent. There has been about 10 percent per annum increase in students studying in English in the eight years between the two NSS Rounds. In contrast, students studying a course in regional languages in the eight years declined at 1.5 percent per annum between the two NSS Rounds. The growing popularity of English as a medium of instruction is seen across almost all the states.

There are several reasons for the popularity of English as a medium of instruction, including: state support to English (as medium of instruction) in official language policy; non-availability of an alternative regional language acceptable to all ethnic groups; preference for languages offering greater potential for employment opportunities - this is especially important when citizens are seeking out employment in a different state or outside the country.

Table 1: Share of Different Medium of Instructions of Students across States and Union Territories: 2007 and 2014
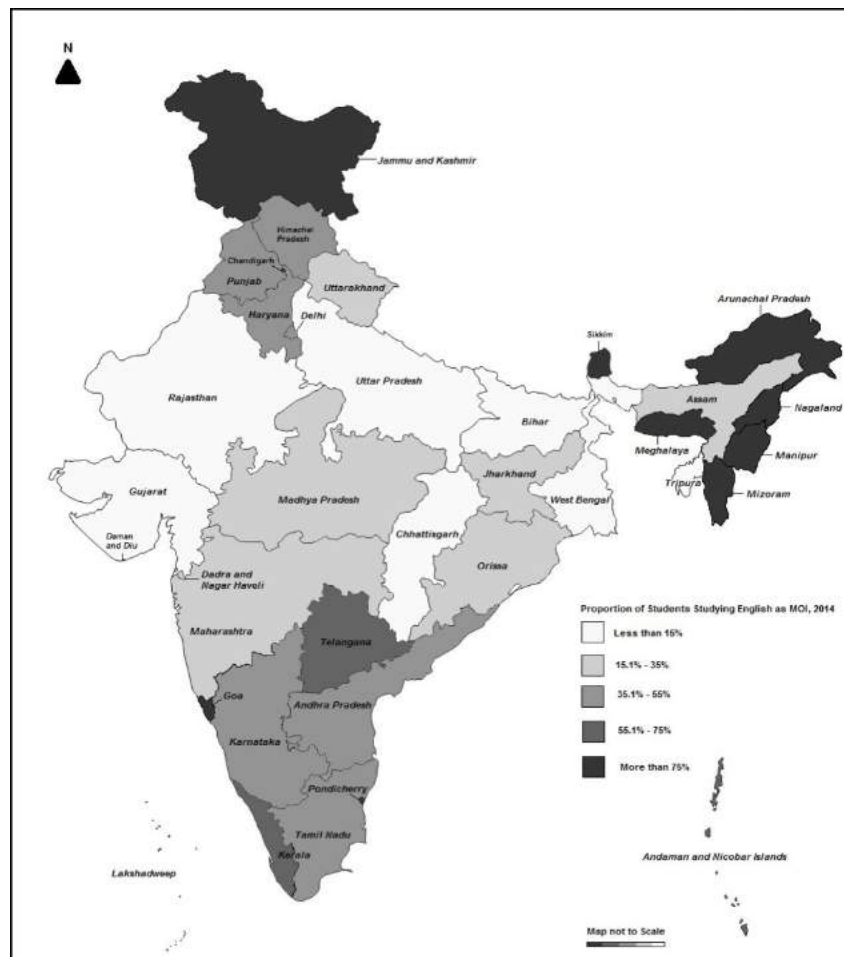
State	Hindi (%)		English (%)		Regional Languages (%)	
	2007-08	2014	2007-08	2014	2007-08	2014
Jammu & Kashmir	13.84	3.17	73.47	89.94	12.69	6.89
Himachal	79.68	58.48	20.07	41.25	0.25	0.27
Punjab	9.12	5.43	30.67	46.60	60.20	47.97
Chandigarh	32.26	24.65	66.86	75.28	0.89	0.07
Uttarakhand	78.37	81.24	21.45	18.47	0.18	0.29
Haryana	80.35	57.36	19.40	41.92	0.25	0.73
Delhi	59.19	47.08	40.24	52.80	0.57	0.12
Rajasthan	92.05	88.56	7.55	11.37	0.40	0.07
Uttar Pradesh	91.78	85.30	6.96	13.46	1.26	1.24
Bihar	93.66	88.03	4.65	10.91	1.69	1.06
Sikkim	0.00	0.11	99.47	98.90	0.53	1.00
Arunachal	5.50	6.62	94.42	93.28	0.08	0.10
Nagaland	0.00	0.30	99.76	96.76	0.24	2.93
Manipur	0.88	0.00	74.79	91.67	24.34	8.33
Mizoram	0.00	0.35	56.16	74.85	43.84	24.80
Tripura	1.52	0.00	4.42	7.96	94.06	92.04
Meghalaya	0.28	0.00	70.43	86.50	29.29	13.50
Assam	0.37	0.33	6.86	16.05	92.77	83.62
WB	2.57	2.96	5.46	10.38	91.97	86.66
Jharkhand	90.37	83.96	8.02	15.95	1.60	0.09
Odisha	0.21	0.44	10.62	17.58	89.18	81.98
Chhattisgarh	95.48	90.70	4.41	9.26	0.11	0.04
MP	91.95	83.37	7.88	16.29	0.17	0.34
Gujarat	1.45	1.81	6.10	14.55	92.45	83.64
D&D	1.45	0.00	26.31	51.88	72.24	48.12
D&N	2.38	0.87	5.47	26.05	92.15	73.08
Maharashtra	2.86	2.72	19.56	34.98	77.58	62.30
Andhra	0.08	0.01	28.63	51.27	71.29	48.72
Karnataka	0.15	0.06	24.80	37.18	75.04	62.76
Goa	0.00	0.00	65.89	91.36	34.11	8.64
Lakshadweep	0.00	0.00	33.73	51.70	66.27	48.30
Kerala	0.05	0.08	45.52	64.50	54.43	35.42
Tamil Nadu	0.06	0.02	28.04	48.47	71.90	51.50
Puducherry	0.36	0.00	50.37	75.76	49.27	24.24
A&N	46.44	33.38	32.91	58.18	20.65	8.44
Telengana		0.00		57.83		42.17
All India	**46.14**	**43.65**	**15.28**	**25.64**	**38.58**	**30.71**

Aged 5-29 years
Source: Own Calculations from the NSS 71st & 64th Round, after applying sample weights

Figure 1 shows that states in the north-east have the highest share of students studying in English than other languages. Similarly, Jammu and Kashmir have more students studying in English (close to 90 percent) than any other language. Telangana, Kerala, Andhra Pradesh and Tamil Nadu have more than 50% students studying in English than any other language. In the north or the 'Hindi belt' (Uttar Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh, Bihar), however, Hindi is the dominant language of medium of instruction and remains so over the NSS rounds. Furthermore, in West Bengal and Gujarat, the regional language is the dominant language of instruction than any other language. Thus, we find that in 'Hindi' speaking states, the shift from Hindi to English as language of instruction is very low (except in Haryana), whereas one finds that this shift is substantial in case of non-Hindi speaking states, especially Andhra Pradesh and Kerala.

**Figure 1: Share of Students Studying English
as Medium of Instruction, 2014**

Source: Table 1

The Advantages of Studying with English as the Medium of Instruction

The advantages of studying with English as the MoI are two-fold. First, it greatly expands the range of subjects that can feasibly be studied: *ipso facto* the disadvantage of studying in Hindi or a regional language, as the MoI, is that it severely restricts subject choice. Secondly, when students, who have not previously studied in English decide to pursue courses that are taught in English, their ability to follow the academic syllabus is compromised, their confidence flounders, and they perform less well academically than their 'English-educated' peers.

The 71st and 64th NSS provide details of the broad subject categories in which students attended classes at the higher secondary and higher education levels. Table 2 and 3 cross-tabulate this information, respectively, for higher secondary and higher education by the MoI in which students were taught. Table 2 shows that, at higher secondary in 2014 (71st NSS), compared to students studying in Hindi or a regional language, a much smaller proportion of students studying in English were in Humanities (15 percent versus 49 percent for Hindi) and a much larger proportion were in Science and in Commerce (Science: 58 percent versus 38 percent for Hindi; Commerce: 21 percent versus 9 percent for Hindi).

The lower panel of Table 2, which shows the proportions in the 64th NSS studying various subjects, suggests that these trends, if anything, have intensified in the eight years between the two NSS Rounds. In 2008 (64th NSS), 24 percent of those studying in English at higher secondary were doing Humanities, 53 percent were in Science and 15 percent were in Commerce. By 2014 the proportion in Humanities had fallen to 15 percent and the proportion in Science and Commerce had risen to 58 and 21 percent, respectively. The declining popularity of the Humanities between 2008 and 2014 mirrored in a growing popularity of Science and Commerce. It was also evident for those studying in Hindi or a regional language: the proportion of Hindi-medium students opting Humanities at higher secondary fell from 69 percent in 2008 to 49 percent in 2014 and the proportion opting Science rose from 24 percent to 38 percent.

These outcomes at the higher secondary level extended also to higher education. As Table 3 shows, those studying in English at higher education shunned Humanities (only 12 percent were enrolled in Humanities-based courses) and embraced Science (20 percent), Commerce (18 percent), and Engineering (28 percent). On the other hand, two-thirds of those studying in Hindi or regional languages were in Humanities with smaller proportions in Science and Commerce and with virtually no presence in Engineering, Management, Medicine, and IT. Moreover, NSSO results

show those who study in English are more likely to know how to operate computers (table 4). Table 4 shows that in 2014 (71st NSS), compared to students studying in a regional language or Hindi or, a much larger proportion of students studying in English reported to be able to operate computer (80 percent versus 38 percent for a regional language or 27 percent for Hindi).

Table 2: Courses of Study at Higher Secondary by Medium of Instruction: 71st and 64th NSS *

Percentage Studying the Subject: 71st Round					
MoI↓	Humanities	Science	Commerce	Other	Total
English	14.6	58.1	21.0	6.3	100
Hindi	49.3	37.6	8.8	4.3	100
Regional Language	49.8	25.6	21.9	2.7	100
Percentage of Studying the Subject: 64th Round					
MoI↓	Humanities	Science	Commerce	Other	Total
English	23.5	52.5	14.7	9.2	100
Hindi	69.4	23.5	5.8	1.4	100
Regional Language	56.2	23.6	17.1	3.1	100

* Aged 16-17 years
Source: Own Calculations from the NSS 71th Round (January - July 2014), after applying sample weights

Table 3: Courses of Study in Higher Education by Medium of Instruction: 71st and 64th NSS *

	Percentage Studying the Subject: 71st Round								
MoI↓	Humanities	Science	Commerce	Medicine	Engineering	Management	IT	Other	Total
English	12.2	19.5	18.4	4.7	28.3	4.8	6.1	6.1	100
Hindi	65.5	13.7	13.4	0.2	0.9	0.1	0.5	5.7	100
Regional	62.9	9.9	20.2	0.2	1.0	0.2	0.8	4.8	100
	Percentage Studying the Subject: 64th Round								
MoI↓	Humanities	Science	Commerce	Medicine	Engineering	Management	IT	Other	Total
English	17.1	16.8	19.2	4.9	20.7	3.4	11.9	6.1	100
Hindi	65.3	9.2	9.7	0.1	0.5	0.0	8.5	6.7	100
Regional	66.1	8.0	17.5	0.0	0.5	0.2	4.1	3.5	100

* Aged 18-22 years
Source: Own Calculations from the NSS 71st & 64th Round, after applying sample weights

Table 4: Percentage Able to Operate Computer by Medium of Instruction: NSS 71st Round, 2014[*]

Medium of Instruction	Yes	No	Total
Hindi	26.53	73.47	100
English	80.16	19.84	100
Regional Languages	38.40	61.60	100

*Aged 5-29 years
Source: Own Calculations from the NSS 71st Round (January - July 2014), after applying sample weights

Most – if not all – courses in professional subjects like Engineering, Maths, Medicine and IT are taught in English and students who wish to study these subjects have perforce to do academic work in English regardless of their prior knowledge of the language. For many students who, hitherto, had studied in Hindi or a regional language this often proves to be a major problem. This failure to cope with English was highlighted anecdotally when, in July 2015, the Indian Institute of Technology at Roorkee failed 72 students after their first year of studies which, in turn, was supposed to entail their automatic expulsion from the Institute. Of these 72 students, 90% were from the 'reserved' categories (that is, groups for whom a certain proportion of places were reserved under affirmative action policies): Scheduled Tribes, Scheduled Castes, and Other Backward Classes. Explaining this failure one of the students said: "English is our big problem. We are from Hindi-medium schools and then we come to the campus and realise it is all high-level English. We see students speaking English, asking questions in English and we can do none of that. Our confidence drains away" (Vishnu, 2015).

Group discussions, reported in Sabharwal and Malish (2016), with students from the Scheduled Castes, Scheduled Tribes and Other Backward Classes across higher education institutions located in six states in India - Bihar, Delhi, Karnataka, Kerala, Maharashtra and Uttar Pradesh - further indicated that the use of Hindi or a regional language as the medium of instruction at school was a significant factor affecting student learning. This was found to be more pronounced in university classrooms where a majority of lectures were delivered in English as compared to settings where teachers also resorted to the regional languages for teaching concepts.

The students also said that 'teachers gave attention to students with English medium', that they 'felt ignored in the class', 'teachers did not care about their involvement in the class' and 'were most of the time mute spectators'. Interviews with faculty members further highlighted the fact that many SC/ST students chose subjects based on their poor command of the English language, thus impacting both their academic performance and their personal confidence-level. On the choice of

subject, it was expressed in the following manner: 'SC/ST students are weak in English language and may be this is one of the reasons they opt for subjects for which they can get books by Hindi authors. Whereas in subjects like Physics, Chemistry or English good understanding of English language is required and very few books are available in Hindi.'

Faculty response towards learning requirement of diverse students centred towards improving students' fluency in English language. For example, a mathematics professor responded that "…the research scholar joined under me does not understand English language properly, initially I had to sit with him/her and write every formula…the verbal communication was absent between us… however he/she was strong in mathematical theories…however, they often hesitate in coming to the teachers for help and lack confidence generally.." Thus 'academic ability of marginalised students and the approach to learning gets affected by the limited English skills.'

Faculty members who were sensitive to the specific learning needs of the SC/ST/OBC students reflected on the prejudice and the institutional structures required supporting diverse learners. This was voiced in the following manner, for example: 'Knowing English is a skill but in elite institutions across India it is seen as a measure of merit or capability. When SC or ST students enter any institution, they are made to feel inferior because of their language of communication. Students often require academic support, including extra tutorials, English language classes and communication skills, which many elite institutions fail to provide.'

To foster success in higher education for students belonging to SC/ST/OBC and Minorities, the State has initiated remedial courses for various subjects including English. The programme is called Remedial coaching for SC/ST/OBC and Minorities. However, implementation of such programmes at the institutional level is poor. For example, as reported in Sabharwal and Malish (2016), a survey of 3200 students found that significant proportions (60 percent) of students were not aware of the remedial coaching scheme, and only 33 percent took the advantage of remedial courses. In some states, Scheduled Castes (SCs) students reported that they were hesitant in joining remedial classes as it may reveal their social identity.

Inequality in Access to English

Tables 5-9 show, for the 71st (January-June 2014) and 64th (January-June 2008) NSS Rounds, the proportion of pupils studying with different languages – English, Hindi, or regional – as their MoI at five different educational levels: Primary (ages 6-10

years, inclusive); Upper Primary (ages 11-13 years, inclusive); Secondary (ages 14 & 15 years inclusive); Higher Secondary (ages, 16 & 17 years inclusive); and Higher Education (ages 18-22 years, inclusive). These proportions are shown with respect to the pupils' social group; their gender; their household's poverty status (poor/non-poor); and their location (rural/urban).

These tables show that in 2014, 23% of primary pupils were studying in English as their MoI (hereafter, simply 'studying in English'), 47% were studying in Hindi, and 30% were studying in a regional language. These proportions were largely unchanged for upper primary (Table 6) and secondary (Table 7) levels – out of 100 students, approximately 20 studied in English; 45 studied in Hindi; and 35 studied in a regional language. As Table 8 shows, the proportion of students studying in English at Higher Secondary jumped to 34 percent (from 21 percent at Secondary education) while the proportion of students studying in a regional language fell to 26 percent (from 37 percent at Secondary level), the proportion of studying in Hindi remaining largely unchanged at around 40 percent. Higher Education saw a further increase in the proportion of students studying in English (Table 9) so that, in 2014, nearly half of all students (49 percent) at higher education institutions were taking courses which were delivered in English.

This pattern was mirrored in the earlier 2008 Survey according to which approximately 12 percent of students studied in English at the Primary/Upper Primary/Secondary levels with this proportion rising to 29 percent at Higher Secondary and rising further to 47 percent at Higher Education. The main change between 2008 (64th NSS) and 2014 (71st NSS) was an increase in the proportion of pupils studying in English at educational levels up to Secondary (from 12 percent in 2008 to 20 percent in 2014), a smaller increase in the proportion of pupils studying in English at Higher Secondary (from 29 percent in 2008 to 34 percent in 2014), and a modest rise in the proportion of pupils studying in English at Higher Education (47 percent in 2008 to 49 percent in 2014).

These figures for the proportion of all students studying in English masked, however, marked difference between the social groups in the proportions of their students studying in English. Table 5 shows that while 11 percent of SC primary students were studying in English in 2014, this proportion was 43 percent for primary students from the non-Muslim Upper classes; 23 percent of SC students, compared to 45 percent of non-Muslim Upper class students, were studying in English at Higher Secondary and, at Higher Education, 34 and 55 percent of, respectively, SC and non-Muslim Upper class students were studying in English. Boys were slightly more likely

to study in English compared to girls (24 percent versus 21 percent for primary pupils in 2014) and students from poor households and those living in rural areas were considerably less likely to study in English than, respectively, their non-poor (6 percent versus 26 percent for primary pupils in 2014) and urban (14 percent versus 49 percent for primary pupils in 2014) counterparts.

Once again, these patterns regarding study in English in 2014 hark back to 2008. Then, too: students from non-Muslim Upper Class households were more inclined to study in English than, say, SC students (28 percent versus 6 percent at primary level and 54 percent versus 32 percent at Higher Education); boys were slightly more likely to study in English compared to girls (13 percent versus 11 percent for primary pupils in 2008); and students from poor households and those living in rural areas were considerably less likely to study in English than, respectively, their non-poor (2 percent versus 18 percent for primary pupils in 2008) and urban (6 percent versus 35 percent for primary pupils in 2008) counterparts. The big change that occurred between 2008 and 2014 was in the increase in the proportion of students from all the categories – social group, gender, poverty status, and location – who were studying in English.

Table 5: The Medium of Instruction at Primary Education, by Social Group, Gender, Poverty Status and Sector[*]

	71st Round			64th Round		
	English (%)	Hindi (%)	Regional (%)	English (%)	Hindi (%)	Regional (%)
Total	22.5	47.2	30.3	12.0	52.8	35.2
Social Group						
Scheduled Tribe	11.9	46.0	42.1	6.8	51.5	41.7
Scheduled Caste (excl. Muslims)	10.9	56.6	32.6	5.6	57.7	36.7
Non-Muslim OBC	23.5	52.7	23.8	9.6	60.2	30.2
Muslim OBC (incl. SC Muslims)	19.1	55.3	25.6	9.3	67.8	22.8
Muslim Upper Class	21.0	25.4	53.6	12.7	25.6	61.7
Non-Muslim Upper Class	42.6	30.2	27.3	27.8	38.1	34.1
Gender						
Boys	23.5	46.6	29.9	12.7	53.6	33.6
Girls	21.3	48.0	30.8	11.1	51.8	37.1
Poverty Status						
Non-Poor	26.3	44.1	29.6	18.2	46.6	35.2
Poor	6.4	60.4	33.3	1.7	63.1	35.2
Location						
Rural	13.8	53.8	32.4	6.0	57.8	36.3
Urban	48.8	27.4	23.9	34.6	34.2	31.3

[*]Percentage of persons in each group with MoI in that language
Source: Own Calculations from NSS 71st and 64th rounds, after applying sample weights

Table 6: The Medium of Instruction at Upper Primary Education, by Social Group, Gender, Poverty Status and Sector[*]

	71st Round			64th Round		
	English (%)	**Hindi (%)**	**Regional (%)**	**English (%)**	**Hindi (%)**	**Regional (%)**
Total	19.4	44.1	36.5	11.2	41.5	47.4
Social Group						
Scheduled Tribe	12.7	45.2	42.1	8.1	41.2	50.7
Scheduled Caste (excl. Muslims)	10.1	47.6	42.3	4.6	44.3	51.1
Non-Muslim OBC	18.0	51.4	30.6	8.0	48.6	43.4
Muslim OBC (incl. SC Muslims)	18.8	49.1	32.0	11.5	49.3	39.2
Muslim Upper Class	19.3	20.9	59.9	11.5	18.9	69.6
Non-Muslim Upper Class	35.8	31.6	32.6	23.1	32.6	44.3
Gender						
Boys	21.0	44.2	34.8	11.5	43.3	45.2
Girls	17.6	43.9	38.5	10.7	39.3	49.9
Poverty Status						
Non-Poor	22.2	41.9	35.9	15.3	37.5	47.3
Poor	5.1	55.7	39.1	1.4	51.1	47.6
Location						
Rural	11.0	50.4	38.6	5.1	45.6	49.3
Urban	43.4	26.1	30.5	29.4	29.2	41.4

[*]Percentage of persons in each group with MoI in that language
Source: Own Calculations from NSS 71st and 64th rounds, after applying sample weights

Table 7: The Medium of Instruction at Secondary Education, by Social Group, Gender, Poverty Status and Sector*

	71st Round			64th Round		
	English (%)	**Hindi (%)**	**Regional (%)**	**English (%)**	**Hindi (%)**	**Regional (%)**
Total	20.6	42.1	37.3	12.7	41.9	45.4
Social Group						
Scheduled Tribe	18.3	44.4	37.3	13.5	39.8	46.7
Scheduled Caste (excl. Muslims)	10.5	44.8	44.7	4.9	45.1	49.9
Non-Muslim OBC	19.1	48.0	32.9	7.9	47.1	45.1
Muslim OBC (incl. SC Muslims)	19.7	42.8	37.5	14.0	48.6	37.4
Muslim Upper Class	26.4	24.0	49.6	19.2	18.8	62.0
Non-Muslim Upper Class	32.3	32.9	34.8	23.3	36.6	40.2
Gender						
Boys	22.5	41.8	35.7	12.8	43.7	43.5
Girls	18.4	42.4	39.2	12.5	39.5	47.9
Poverty Status						
Non-Poor	23.1	40.7	36.2	15.7	38.9	45.4
Poor	6.6	49.7	43.6	1.6	53.1	45.3
Location						
Rural	12.4	48.0	39.6	5.6	46.0	48.4
Urban	41.8	26.8	31.4	30.6	31.6	37.8

*Percentage of persons in each group with MoI in that language
Source: Own Calculations from NSS 71st and 64th rounds, after applying sample weights

Table 8: The Medium of Instruction at Higher Secondary, by Social Group, Gender, Poverty Status and Sector[*]

	71st Round			64th Round		
	English (%)	Hindi (%)	Regional (%)	English (%)	Hindi (%)	Regional (%)
Total	33.8	40.2	26.0	29.1	36.4	34.5
Social Group						
Scheduled Tribe	27.7	40.7	31.7	22.3	36.0	41.7
Scheduled Caste (excl. Muslims)	22.7	42.8	34.5	19.6	38.6	41.8
Non-Muslim OBC	30.6	45.9	23.5	22.7	41.3	36.0
Muslim OBC (incl. SC Muslims)	37.9	40.4	21.7	39.8	40.0	20.2
Muslim Upper Class	39.8	18.1	42.1	41.0	21.5	37.5
Non-Muslim Upper Class	44.7	34.3	21.0	38.3	32.0	29.8
Gender						
Boys	35.9	40.5	23.6	29.5	38.6	31.9
Girls	30.9	40.0	29.2	28.3	33.1	38.6
Poverty Status						
Non-Poor	35.7	38.6	25.7	32.0	34.2	33.8
Poor	16.0	55.2	28.8	8.1	52.0	39.9
Location						
Rural	24.1	46.9	29.0	19.9	40.9	39.2
Urban	53.6	26.6	19.8	43.3	29.4	27.3

[*]Percentage of persons in each group with MoI in that language
Source: Own Calculations from NSS 71st and 64th rounds, after applying sample weights

Table 9: The Medium of Instruction in Higher Education, by Social Group, Gender, Poverty Status and Sector[*]

	71st Round			64th Round		
	English (%)	Hindi (%)	Regional (%)	English (%)	Hindi (%)	Regional (%)
Total	49.4	34.4	16.2	47.2	31.9	20.9
Social Group						
Scheduled Tribe	40.8	34.9	24.3	30.0	42.0	28.0
Scheduled Caste (excl. Muslims)	34.3	43.9	21.8	32.0	36.6	31.4
Non-Muslim OBC	50.6	36.1	13.3	45.5	35.1	19.4
Muslim OBC (incl. SC Muslims)	47.6	36.5	16.0	44.8	40.6	14.6
Muslim Upper Class	59.7	22.1	18.2	51.1	25.4	23.5
Non-Muslim Upper Class	55.0	29.6	15.4	54.4	27.2	18.5
Gender						
Boys	50.3	33.9	15.8	46.2	32.1	21.7
Girls	48.2	35.0	16.7	48.5	31.6	19.9
Poverty Status						
Non-Poor	50.9	33.2	15.9	49.6	30.1	20.3
Poor	27.5	52.2	20.3	12.6	57.8	29.7
Location						
Rural	35.0	44.6	20.4	31.8	40.5	27.6
Urban	66.9	22.1	11.0	60.4	24.5	15.1

[*]Percentage of persons in each group with MoI in that language
Source: Own Calculations from NSS 71st and 64th rounds, after applying sample weights

Tables 5-9 showed the proportions of students from each social group who were studying in English. So, for example, Table 5 shows that in primary education, 11 percent of SC pupils and 43 percent of NMUC pupils were studying in English. A related question is of the social composition of the total numbers studying English at different levels of education. Figures 2 and 3 show that, for the 71st NSS (January-June 2014), while the NMUC comprised 17 percent of the total numbers (attending) in primary education, 32 percent of primary pupils studying in English were from the NMUC. At the other end of the spectrum, the SC comprised 20 percent of the total numbers (attending) in primary education but less than 10 percent of those studying in English at primary level were SC. The other interesting feature is that, as figure 2 shows, the proportion of those attending education who were from the NMUC *increased* - but the proportion attending who were ST, SC and Muslim *decreased* – with every rise in the level of education. So, while 17 percent and 19.8 percent of primary

pupils were, respectively, from the NMUC and the SC, these groups contributed, respectively, 34 percent and 10 percent of all those in higher education.

These results are mirrored in Figures 4 and 5 which pertain to the 64th NSS (January-June 2008). These show that while the NMUC comprised 18 percent of the total numbers (attending) in primary education, 41 percent of primary pupils studying in English were from the NMUC. At the other end of the spectrum, the SC comprised 20 percent of the total numbers (attending) in primary education but less than 10 percent of those studying in English at primary level were SC. As with the 71st NSS, the 64th NSS also had the proportion of those attending education from the NMUC *increasing* - but the proportion attending from the ST, SC, and Muslim *decreasing*– with every rise in the level of education. So, while 18 percent and 20 percent of primary pupils were, respectively, from the NMUC and the SC, these groups contributed, respectively, 42 percent and 13 percent of all those in higher education.

The most usual concept of 'unfair access' by a group to a particular 'facility' is that there is disproportionality between its representation in the population and in the facility. So, on this definition, there was 'unfair access' to studying in English since some groups had disproportionately greater access to English than other groups. However, when there are many groups, the relevant question is how to merge these group disproportionalities into a *single* measure of *access inequality*. One way of measuring inequality in a variable is by *the natural logarithm of the ratio of the arithmetic mean of the variable to its geometric mean*. [11] As Bourguignon (1979) demonstrates, such a measure satisfies *inter alia* the Pigou-Dalton condition. [12]

This idea translates very naturally, from its usual application to income inequality, to measuring the degree of inequality in opportunities to study in English by which people in different population groups meet with different degrees of success in securing a 'desirable outcome'. In this study, persons from different social groups meet with different degrees of success in terms of accessing English as the MoI. The variable of interest is the proportion of persons from that group who are studying in English (the *access rate*) and it is inequality in the distribution of this rate between the groups that is sought to be measured. This inequality is referred to, hereafter, as "access (to English) inequality".

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[11]   See Bourguignon (1979) and Theil (1967).

[12]   In the language of inequality analysis this transfer *from* an "access-rich" group *to* an "access-poor" group constitutes a progressive transfer and, by virtue of this, is inequality reducing.

Suppose that the sample is divided into M mutually exclusive and collectively exhaustive groups with N_m ($m=1...M$) persons in each group such that N_m and H_m are the numbers of pupils from *each* group in, respectively attending at that level of education (the 'reference population') and studying in English at that level of education ('access population'). Then $N = \sum_{m=1}^{M} N_m$ and $H = \sum_{m=1}^{M} H_m$ are, respectively, the total numbers of persons in the reference population and in the access population.

The success rate of group m (denoted e_m) is $e_m = H_m / N_m$, $0 \le e_m \le 1$. Then the arithmetic and geometric means of e_m are, respectively:

$$\bar{e} = \sum_{m=1}^{M} e_m n_m \ \text{ and } \hat{e} = \prod_{m=1}^{M} (e_m)^{n_m} \ where \ n_m = N_m / N, \ \sum_{m=1}^{M} n_m = 1 \qquad (1)$$

so that the measure of access inequality is:

$$J = \log(\bar{e} / \hat{e}) = \log(\bar{e}) - \sum_{m=1}^{M} n_m \log(e_m) \qquad (2)$$

Now from the definition of e_m:

$$e_m = H_m / N_m = (H_m / N_m)(N / H)(H / N) = (H_m / H)(N / N_m)(H / N) = (h_m / n_m)\bar{e} \qquad (3)$$

where: $h_m = H_m / H \ and \ n_m = N_m / N$ are, respectively, group m's share of higher education attendees and of the population. Employing equation (3) in equation (2) yields:

$$J = \log(\bar{e} / \hat{e}) = \log(\bar{e}) - \sum_{m=1}^{M} n_m \log(e_m) = \log(\bar{e}) - \sum_{m=1}^{M} n_m \log\left[\frac{h_m}{n_m}\bar{e}\right] = -\sum_{m=1}^{M} n_m \log\left[\frac{h_m}{n_m}\right] \qquad (4)$$
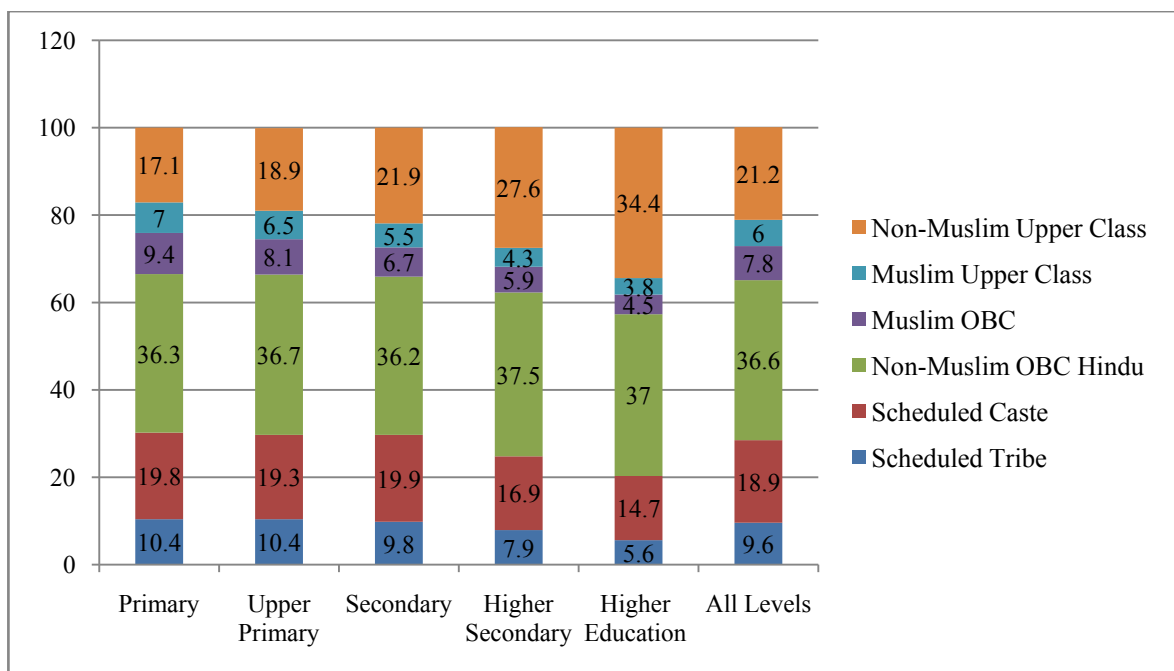
From equation (4), inequality is minimised when $J=0$. This occurs when $n_m = h_m$, that is when each group's share in the 'population' (n_m) is equal to its share in higher education attendees (h_m). Otherwise, $J>0$. Inequality is at a maximum when one group has complete access (say group 1) with all access denied to the other groups ($h_1 = 1, \ h_2 = h_3 ... = h_m = 0$). Then $J_{max} = -n_1 \log(1 / n_1) = n_1 \log(n_1)$ and, therefore, $0 \le J \le n_1 \log(n_1)$

The inequality measure, J, of equation 4, has along the lines suggested by Bourguignon (1979), an appealing interpretation. If social welfare is the sum of identical and concave group utility functions whose arguments are e_m then social welfare is maximised when e_m - the success rate of a group - is the same for every group. If the utility functions are of the logarithmic form (that is, $U(e_m) = \log(e_m)$), then

J represents the distance between *maximum* level of social welfare ($\log(\bar{e})$) and the *actual* level of social welfare ($\sum_{m=1}^{M} n_m \log(e_m)$): *social welfare is maximised when access inequality is minimised*!
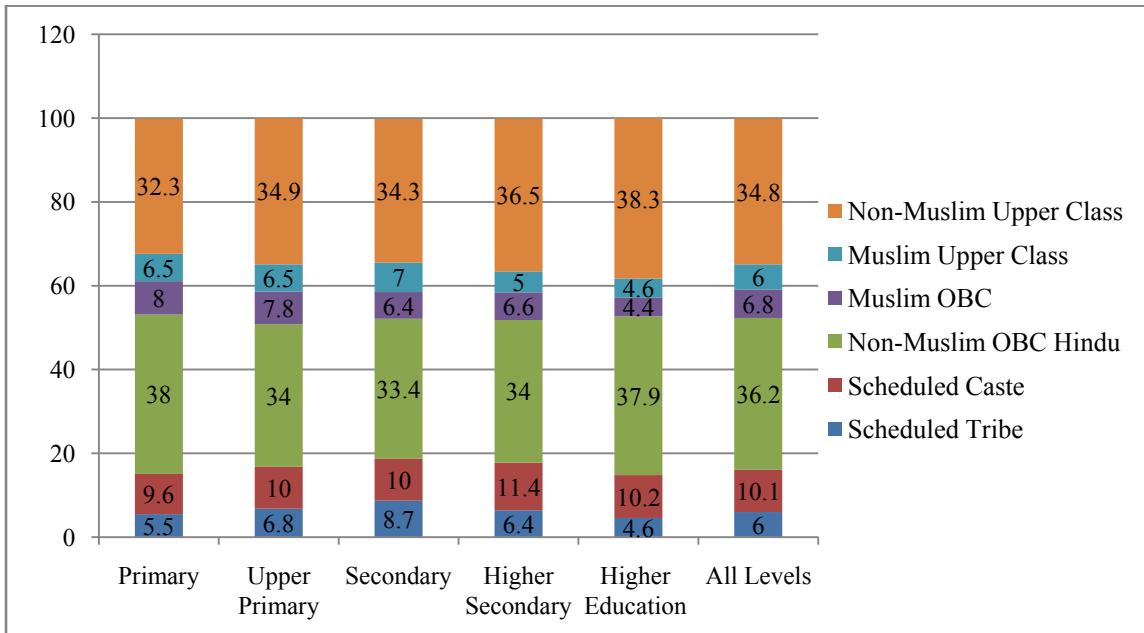
Using the numbers, over the label 'All Levels', shown in Figures 1 and 3 (for the n_m of equation (4)) and Figures 2 and 4 (for the h_m of equation (4)), the computed value of J was 12.6 for the 64th NSS and 7.3 for the 71st NSS. These results show that in the six years between 2008 and 2014 inequality in access to studying in English fell by 42 percent.

Figure 2: The Social Composition of Students at Different Educational Levels (71st NSS: January-June 2014)
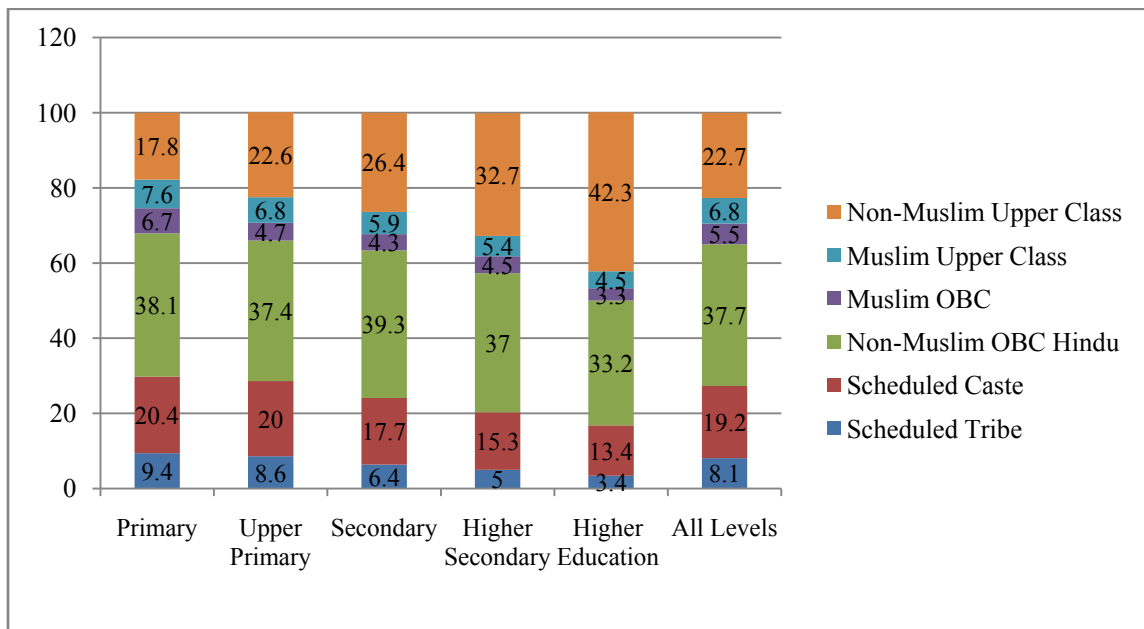

Source: Own Calculations from NSS 71st and 64th rounds, after applying sample weights

Figure 3: The Social Composition of Students Studying in English at Different Educational Levels (71st NSS: January-June 2014)

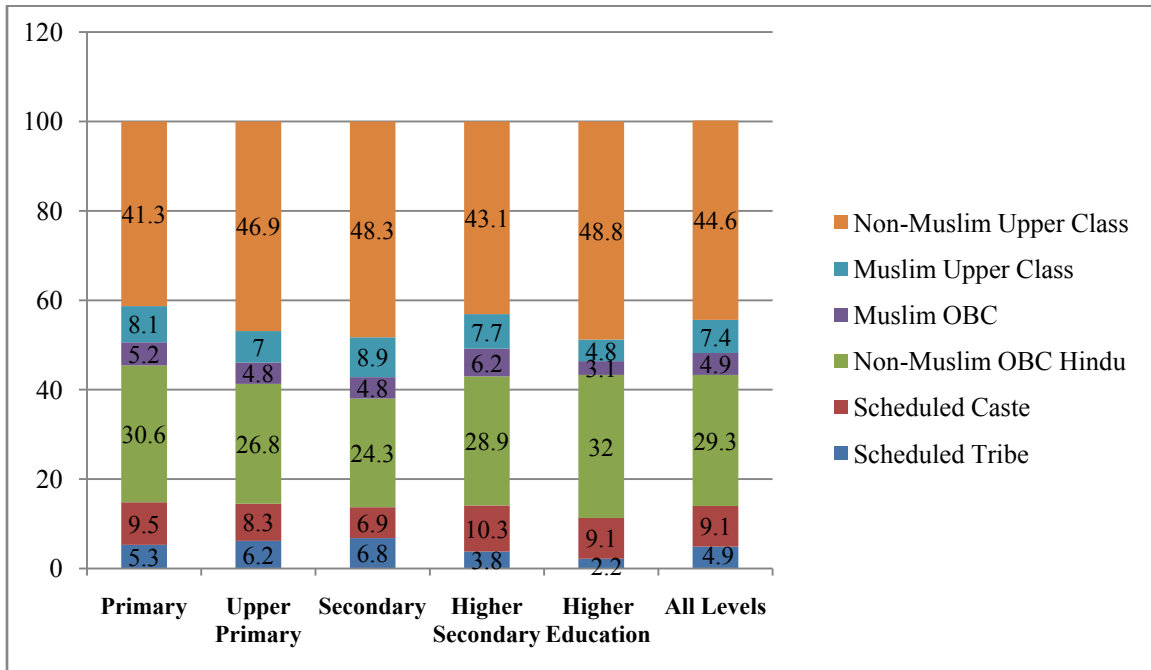*Source: Own Calculations from NSS 71st and 64th rounds, after applying sample weights*

Figure 4: The Social Composition of Students at Different Educational Levels (64th NSS: January-June 2008)

Source: Own Calculations from NSS 71st and 64th rounds, after applying sample weights

Figure 5: The Social Composition of Students Studying in English at Different Educational Levels (64ᵗʰ NSS: January-June 2008)

A Multinomial Logit Model of Language Choice

The data in Tables 5-9 represent raw sample figures. Consequently, in presenting the difference between the SC and NMUC in the respective proportions of their students studying in English, the tables did not control for the effect of other factors: gender, household poverty and household location. As a result, it was impossible to say from the Tables whether the observed SC-NMUC differences represent a 'social group effect' or whether they were indicative of a 'poverty effect' and/or a 'location effect' stemming from the fact that, compared to the NMUC households, a greater proportion of SC households might be poor and living in rural areas.

So, in order to uncover the relationship between the social group of students and their likelihood of studying in English, the effects of other variables, like gender, poverty status and sector (and state of residence) needed to be taken into account. We did this by estimating a *multinomial logit* model whereby students chose, from the available choices, their MoI language where this choice was conditioned by their social group, their gender, their household's poverty status and its urban/rural location. The dependent variable Y_i in this model took the values, 1, 2, or 3, depending upon whether

student *i* chose English, Hindi, or a regional language as the MoI.[13] In essence, with regional languages as (Y_i =3) as the base category, the model consisted of two equations (Y_i =1, Y_i =2) each of which took the following form:

$$\log\left[\frac{\Pr(Y_i = j)}{\Pr(Y_i = 3)}\right] = f(\text{social group, gender, poverty status, location, state of residence}) \quad (5)$$

The previous section referred to four sources of overlapping disadvantage - 'social group' disadvantage; 'gender' disadvantage; 'economic' disadvantage; and 'locational' disadvantage – in terms of a MoI language. In the context of this study, a natural question to ask is whether the effect of the *social group* of persons, on their probabilities of HEA, varied according to their: (i) gender; (ii) poverty status; (iii) location (rural/urban).   In practical terms, the interdependency between these four factors can be modelled through *interaction effects*. These effects are used to examine whether the effect of a specific variable (say social group) on the outcome probability varies according to values of another variable (say, gender). [14] Following the advice contained in Long and Freese (2014) the results from the estimated equation are presented in Table 8 in the form of the *predicted probabilities* from the estimated logit coefficients and not in terms of the estimates themselves. This is because the logit estimates themselves do not have a natural interpretation – they exist mainly as a basis for computing more meaningful statistics and in this case, these are the predicted probabilities.[15]

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[13] With *J* mutually exclusive and collectively exhaustive outcomes, indexed *1…J*, the multinomial logit model is defined by a pair of equations. The first, defines *the log odds ratio* of a person *i* being in status *j>1*, relative to being in the 'base' status *j=1*, as a linear function of $\mathbf{X_i} = \{X_{ik}, \ k=1…K\}$, the vector of values of *K* explanatory variables ($X_{i1} = 1$) for the person:

$\log\left(\frac{\Pr(Y_i = j)}{\Pr(Y_i = 1)}\right) = \sum_{k=1}^{K} \beta_{jk} X_{ik} = \mathbf{X_i}\boldsymbol{\beta_j}$ where: Y_i is an integer variable which takes the value *j* if, and only if, outcome *j* occurs for person *i*, and $\boldsymbol{\beta_j}$ is the vector of coefficients associated with outcome *j*, β_{j1} being the coefficient associated with the intercept term. The second equation defines the probability of outcome *j* (*j=1…J*) occurring for individual *i* as:

$\Pr(Y_i = j) = \exp(Z_{ij})/[1+\sum_{r=1}^{J} Z_{ir}] = F(\mathbf{X_i}\boldsymbol{\beta_j})$

[14] For example, does being male or female affect the probabilities of being in HEA differently for SC and NMUC? In terms of being in HEA, do persons from different groups respond differently to: belonging to poor households; to living in rural locations?

[15] It should be emphasised in respect of the probabilities shown in Table 6 that in computing these *all* the interaction effects – in this case, the interactions of gender, poverty status, sector of residence and social group – were taken into account.

The numbers in Table 10 under the columns headed 'PP' show the predicted probability of choosing English as the MoI, for the different categories shown in the first column, for the different educational levels identified across the columns. So, for example, predicted probabilities of studying in English were, respectively, 15.2 percent and 33.4 percent for SC and NMUC primary students in the 71st NSS and respectively, 7.1 percent and 18.2 percent for SC and NMUC primary students in the 64th NSS.[16]

The *marginal probability* (shown under the heading 'MP') associated with a variable refers to the *change* in the predicted probability consequent upon a unit change in the value of the variable, *the values of the other variables remaining unchanged.* For discrete variables (as indeed, are all the variables reported above) a unit change in the value of a variable refers to a move from the *reference* category to the category in question, the values of the other variables remaining unchanged.[17] Dividing these marginal probabilities by their corresponding standard errors yields the z-value associated with these marginal probabilities and a '*' against a marginal probability indicates that, judged by the z-value, the marginal probability was significantly different from zero at the 5% level of significance.

The results in Table 10 show that, for the 71st and 64th NSS, four main factors affected the predicted probability (hereafter, simply 'probability') of studying in English: social group; gender; poverty; and rural/urban location. In terms of social group, there was a clear hierarchy with the probability of studying in English being highest for students from the non-Muslim upper classes (33 percent for primary; 29 percent for upper primary; 30 percent for secondary; 44 percent for higher secondary; and 59 percent for higher education) and lowest for students from the SC (15 percent for primary; 13 percent for upper primary; 14 percent for secondary; 24 percent for higher secondary; and 36 percent for higher education). For every social group, the

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[16]   The SC probability was computed by setting the social group variable in equation (1), to be SC, for *all* the persons in the sample, with the values of the other variables being unchanged at their values observed in the sample. Applying the multinomial logit estimates to these revised values yielded the estimated probability of studying in English of persons from the SC as 15.2 percent in 2014 and 7.1 percent in 2008. Similarly, the NMUC probability of studying in English was computed by setting the social group variable in equation (1), to be UCH, for *all* the persons in the sample, with the values of the other variables unchanged from their observed values. Applying the multinomial logit estimates to these revised values yielded the estimated probability of studying in English for persons from the NMUC as 33.4 percent in 2014 and 18.2 percent in 2008.

[17]   So, the *marginal probability* associated with SC persons is defined as the *difference* between SC and NMUC (the reference category) persons in their predicted probabilities of HEA. For the first panel (labelled: all respondents) of Table 10, this marginal probability was 28.9-46.4 = -17.5 percentage points (pp) which is shown in column 3 of Table 10 as -0.175.

probability of their students studying in English was significantly lower than that for the reference group of the non-Muslim upper classes.

For every level of education, the probability of studying in English was significantly lower for SC than for ST students and it was significantly lower for OBC Muslims than for Upper Class Muslims. Persons from the ST divide into two groups: Hindu ST (88 percent of the total NSS 71st round (grossed up) sample attending education from primary to higher education) and Christian ST (12 percent of the total NSS 71st round (grossed up) sample attending education from primary to higher education). In 2014, only 8 percent of the former group (ST Hindus) but 63 percent of the latter group (ST Christians) were studying in English. In aggregate, therefore, 14 percent of *all* ST persons, attending education from primary to higher education, were studying in English.

Lastly, for all levels of education, boys were more likely to study in English than girls; those from poor households were less likely to study in English than those from non-poor households, and those from rural areas were less likely to study in English than those from urban households.

Table 10: Predicted Probabilities of Studying with English as the Medium of Instruction at Different Education Levels, by Social Group, Gender, Poverty Status, and Sectors

	71st Round: 93,507 persons in the estimation sample									
	Primary		Upper Primary		Secondary		Higher Secondary		Higher Education	
	PP	MP	PP	MP	PP	MP	PP	MP	PP	MP
Total	0.225		0.194		0.206		0.338		0.494	
Scheduled Tribe	0.170	-0.164**	0.145	-0.144**	0.155	-0.144**	0.260	-0.179**	0.402	-0.188**
Scheduled Caste (excl. Muslims)	0.152	-0.183**	0.127	-0.162**	0.135	-0.163**	0.235	-0.204**	0.364	-0.225**
Non-Muslim OBC	0.230	-0.104**	0.196	-0.093**	0.206	-0.092**	0.330	-0.109**	0.472	-0.118**
Muslim OBC (incl. SC Muslims)	0.186	-0.14**	0.151	-0.138**	0.156	-0.143**	0.261	-0.178**	0.397	-0.193**
Muslim Upper Class	0.207	-0.127**	0.174	-0.116**	0.181	-0.117**	0.290	-0.149**	0.430	-0.160**
Non-Muslim Upper Class [R]	0.334		0.289		0.298		0.439		0.590	
Girls	0.203	-0.039**	0.176	-0.034**	0.188	-0.034**	0.312	-0.044**	0.467	-0.049**
Boys [R]	0.242		0.210		0.222		0.357		0.516	
Poor	0.126	-0.111**	0.103	-0.100**	0.111	-0.104**	0.207	-0.141**	0.334	-0.168**
Non-Poor [R]	0.238		0.204		0.216		0.347		0.502	
Urban	0.387	0.231**	0.339	0.212**	0.349	0.214**	0.504	0.262**	0.636	0.271**
Rural [R]	0.156		0.127		0.134		0.243		0.365	
	64th Round: 94,302 persons in estimation sample									
	Primary		Upper Primary		Secondary		Higher Secondary		Higher Education	
	PP	MP	PP	MP	PP	MP	PP	MP	PP	MP
Total	0.120		0.112		0.127		0.290		0.472	
Scheduled Tribe	0.126	-0.056**	0.115	-0.052**	0.129	-0.056**	0.291	-0.091**	0.469	-0.098**
Scheduled Caste (excl. Muslims)	0.071	-0.111**	0.062	-0.104**	0.069	-0.116**	0.177	-0.205**	0.316	-0.251**
Non-Muslim OBC	0.104	-0.078**	0.095	-0.072**	0.106	-0.079**	0.250	-0.132**	0.415	-0.152**
Muslim OBC (incl. SC Muslims)	0.114	-0.068**	0.105	-0.061**	0.115	-0.070**	0.262	-0.120**	0.411	-0.157**
Muslim Upper Class	0.132	-0.050**	0.109	-0.057**	0.123	-0.062**	0.288	-0.094**	0.474	-0.093**
Non-Muslim Upper Class [R]	0.182		0.167		0.185		0.382		0.567	
Girls	0.113	-0.012**	0.105	-0.012**	0.119	-0.014**	0.277	-0.023**	0.458	-0.024**
Boys [R]	0.125		0.117		0.133		0.300		0.482	
Poor	0.033	-0.121**	0.029	-0.104**	0.032	-0.110**	0.086	-0.223**	0.171	-0.315**
Non-Poor [R]	0.154		0.133		0.142		0.309		0.486	
Urban	0.238	0.164**	0.216	0.152**	0.239	0.169**	0.454	0.282**	0.623	0.338**
Rural [R]	0.074		0.064		0.071		0.171		0.285	

[R]= Reference Group; PP=Predicted Probability; MP=Marginal Probability
**=significant at 5% level
Source: Own Calculations from NSS 71st and 64th rounds, after applying sample weights

Institutional Structure and English as a Medium of Instruction

The 71st and 64th NSS rounds distinguish between three types of educational institutions which respondents to the survey attended: (i) government; (ii) private-aided; and (iii) private-unaided. Government institutions are run by the Central or by the State governments and are wholly funded by the government. Private-aided institutions are managed privately receive a regular grant from a public funding agency like the government (Central or State) or by local bodies. Given the source of funding, these institutions are administered and managed in accordance with the rules that apply to government schools. Private unaided institutions are privately run and do not receive any monies from the government and by virtue of this fact can operate according to their own rules. Table 11 shows that in 2009, public sector schools (primary to higher secondary) outnumbered private sector schools by nearly 4 to 1. However, this imbalance was greatest at the earlier stages of schooling and reversed itself by the secondary and higher secondary stages: for every private sector primary school there were seven public sector primary schools but for every private sector secondary school there were only 0.8 public sector higher secondary schools and for every private sector higher secondary school there were only 0.7 public sector higher secondary schools.

In terms of higher educational institutions, the basic distinction is between Central (government) universities, State (government) universities, 'Deemed universities' and 'private universities'. In February 2016, there were 46 Central universities and 343 State universities, so called because they were funded, respectively by the State governments and the Central government. The 123 Deemed universities, several of which were research institutes, had been accorded the status of a university, with the power to award degrees, by the University Grants Commission. Lastly, there 232 private universities which had been awarded recognition as universities by the University Grants Commission though, unlike State universities, they were not permitted to establish affiliated colleges.

Table 11: Number of Schools in India by Management and Funding as of 30 September 2009

	Public Sector		Private Sector	
	Government	Local Bodies	Aided	Unaided
Primary	524,324	140,765	26,484	68,203
Upper Primary	219,451	59,961	22,742	63,748
Secondary	42119	11582	27053	36252
Higher Secondary	24,808	1,847	17,302	20,441
Total	810,612	214,155	93,581	188,644
Total	**1,024,767**		**282,225**	

Source: Eighth All India Educational Survey, MHRD, 2009

The 71st and 64th NSS Rounds also provided information on the type of institutions – government, private aided, private unaided - in which students at various levels of education were enrolled. Cross-tabulating institutional type and the language which was their MoI results in Table 12. This table shows that in 2014 over all five educational levels, 60 percent of students who were studying in English attended private-unaided institutions, 22 percent were in private-aided institutions and 18 percent were in government institutions. These differences were greatest at the primary level (when 75 percent of students who were studying in English attended private-unaided institutions, 16 percent were in private-aided institutions and 8 percent were in government institutions) and smallest for higher secondary and for higher education (the higher education and higher education proportions were very similar: 43 percent of students who were studying in English attended private-unaided institutions, 28 percent were in private-aided institutions and 29 percent were in government institutions).

Comparing the results from the 71st NSS (2014) with those from the 64th NSS (2007 points to the growth of private universities over this period. In 2008, of students studying in English in higher education 32 percent were enrolled in private universities and 35 percent were in government universities. By 2014 the first figure had jumped to 43 percent and the latter figure had fallen to 29 percent suggesting that students, who wished to study in English in higher education, in 2014 were more inclined to enrol at private universities, and less inclined to attend government universities, than they were in 2008. Moreover, private institutions have contributed to disciplinary distortions since most of these were established in the subject areas of engineering, medicine and management (Agarwal, 2007). Varghese (2016) argues that this adds to 'widening inequalities in access to education and employment as students from well to

do families opted for the courses leaving the courses in arts and humanities mostly to students from the disadvantaged households (p9).

Table 12: The Relation between Medium of Instruction and Type of Educational Institution, 71st and 64th Rounds

	71st Round			
	All Education Levels			
	Government (%)	**Private Aided (%)**	**Private Unaided (%)**	**Total**
English	17.9	21.8	60.3	100
Hindi	67.8	8.4	23.8	100
Regional	80.4	13.6	6.0	100
	Primary			
English	8.3	16.3	75.4	100
Hindi	71.8	4.4	23.8	100
Regional	87.0	7.8	5.2	100
	Upper Primary			
English	15.6	19.8	64.7	100
Hindi	73.0	6.5	20.5	100
Regional	84.4	12.0	3.5	100
	Secondary			
English	20.7	22.3	57.0	100
Hindi	63.5	12.3	24.3	100
Regional	76.9	18.2	4.9	100
	Higher Secondary			
English	27.5	28.7	43.8	100
Hindi	53.9	16.6	29.6	100
Regional	62.6	23.9	13.5	100
	Higher Education			
English	28.5	28.2	43.4	100
Hindi	56.6	18.4	25.1	100
Regional	55.2	31.6	13.2	100

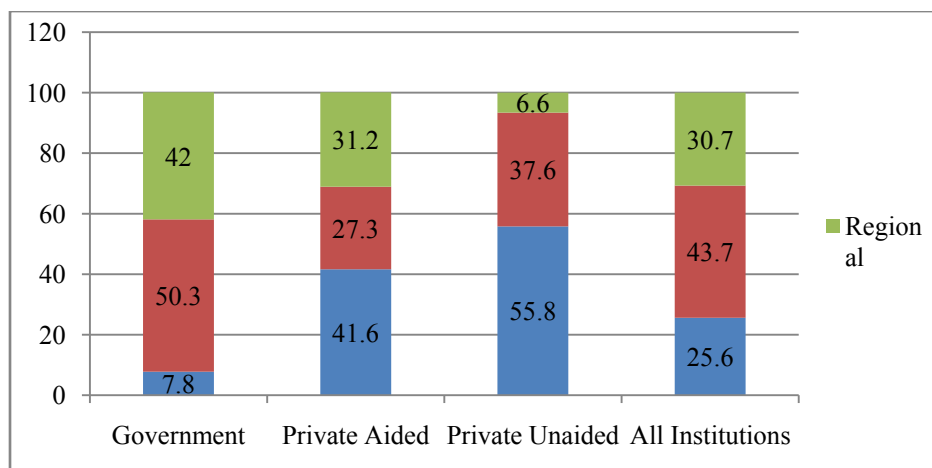|	64th Round			
	All Education Levels			
	Government (%)	**Private Aided (%)**	**Private Unaided (%)**	**Total**
English	20.6	21.9	57.5	100
Hindi	74.7	7.4	17.9	100
Regional	78.8	14.7	6.5	100
	Primary			
English	10.6	15.7	73.7	100
Hindi	78.8	3.6	17.6	100
Regional	85.5	7.8	6.7	100
	Upper Primary			
English	15.4	18.7	65.9	100
Hindi	74.0	7.2	18.8	100
Regional	79.7	15.4	4.9	100
	Secondary			
English	24.7	21.4	54.0	100
Hindi	65.3	14.2	20.5	100
Regional	71.1	23.2	5.8	100
	Higher Secondary			
English	32.5	27.4	40.0	100
Hindi	63.0	19.4	17.6	100
Regional	58.5	30.3	11.3	100
	Higher Education			
English	34.5	34.0	31.5	100
Hindi	64.9	24.3	10.8	100
Regional	57.8	31.2	11.0	100

Source: Own Calculations from NSS 71st and 64th rounds, after applying sample weights

Figures 6 and 7 show the composition of the study body, in terms of the languages in which instruction is imparted, in institutions of different types for, respectively, the 71st and 64th NSS rounds. Aggregated over all education levels, 56 percent of students in private institutions were studying in English in 2014 (Figure 6) compared to 45 percent in 2007 (Figure 7). By contrast, only 8 percent of students in government institutions were studying in English in 2014 (Figure 6) up from 5 percent in 2008. Aggregating over all institutions, and across all educational institutions, the proportion of students studying in English rose from 15 percent in 2008 to 26 percent in 2014 with a corresponding fall in the proportions studying in Hindi (from 46 to 44 percent) and in regional languages (from 39 to 31 percent).

Figures 6 and 7 also suggest disproportionality between students studying in the different languages across all institutional types and in private unaided institutions: for example, in 2014, 56 percent of students in private unaided institutions were studying in English whereas the proportion over all institutions was only 26 percent. This
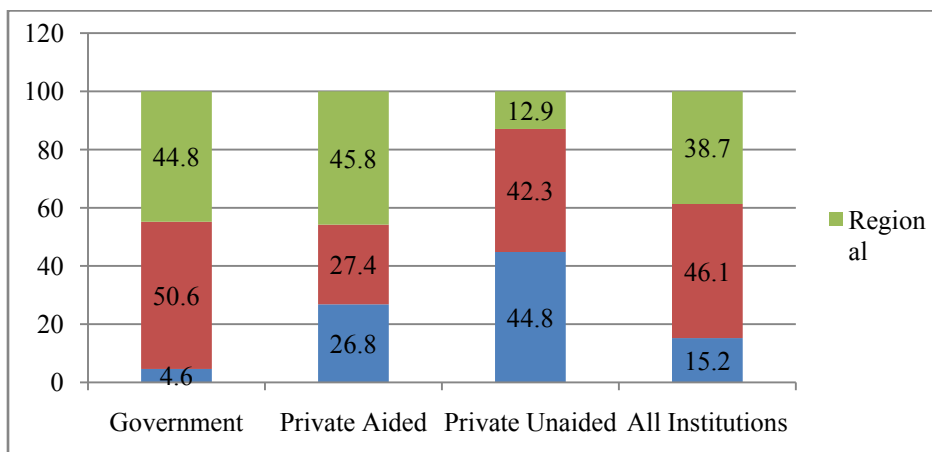
suggests that, compared to educational institutions in their entirety, private unaided institutions catered disproportionately more to students studying in English than they did to students studying in Hindi or other languages. This inequality in access to private unaided institutions was particularly marked for those studying in regional languages. In 2014, 31 percent of pupils, over all three types of educational institutions in aggregate, were studying in regional languages but only 7 percent of pupils in private unaided institutions were receiving instruction in a regional language.

Figure 6: The Student Composition of Educational Institutions by Medium of Instruction (71st NSS: January-June 2014) over all Educational Levels

Source: Own Calculations from NSS 71st and 64th rounds, after applying sample weights

Figure 7: The Student Composition of Educational Institutions by Medium of Instruction (64th NSS: January-June 2007) over all Educational Levels

Source: Own Calculations from NSS 71st and 64th rounds, after applying sample weights

Conclusion

This paper began by examining the advantages of studying with English as the MoI. The advantages include a choice of wide range of subjects that can be successfully studied at the higher education stage. Conversely, the disadvantage of studying in Hindi or a regional language is that it severely restricts subject-choice. At higher secondary in 2014, a much smaller proportion of students studying in English was in the Humanities and a much larger proportion was in Science and in Commerce; this was in contrast to those studying in Hindi or regional languages. These trends have intensified in eight years, between 2007 and 2014. The declining popularity of the Humanities between 2008 and 2014, mirrored in a growing popularity of Science and Commerce.

These outcomes at the higher secondary level also extended to higher education. The analysis in the paper indicates that those studying in English at higher education shunned Humanities and embraced Science, Commerce, and Engineering. On the other hand, two-thirds of those studying in Hindi or regional languages were in Humanities, with smaller proportions in Science and Commerce and with virtually no presence in Engineering, Management, Medicine, and IT.

The majority of pupils studying in English attended private unaided institutions. Compared to educational institutions in their entirety, private unaided institutions catered disproportionately to students studying in English than they did to students studying in Hindi or other languages. This inequality in access to private unaided institutions was particularly marked for those studying in regional languages. This suggests that institutional access is very important in order to study in English.

With regard to access to English by social groups, the data shows inter-group variations in the proportion of pupils studying in English. A much larger proportion of upper class pupils, upper-caste, male pupils, non-poor pupils, and urban pupils study in English and access private unaided institutions. There was a clear hierarchy with the probability of studying in English being highest for students from the non-Muslim upper classes and lowest for students from the SC. For every level of education, the probability of studying in English was significantly lower for SC than for ST students and it was significantly lower for OBC Muslims than for Upper Class Muslims. Lastly, for all levels of education, boys were more likely to study in English than girls; those from poor households were less likely to study in English than those from non-poor households, and those from rural areas were less likely to study in English than those from urban households. Many students who had their first experience of studying in

English at the higher-education level, faced difficulties in coping and a loss of confidence as they moved from a different medium of instruction to English.

In a linguistically diverse country, where States are organised on the basis of language, the medium of instruction in schools can become a significant source of tension between the State and citizens. English as a medium of instruction is becoming the preferred choice of parents, whereas regional languages are consciously promoted by the States. For example, parents protested when in Karnataka, recently the state government amended the Right to Education (RTE) Act to make Kannada the mandatory MoI from classes one to five and made learning Kannada mandatory from classes one to ten through another bill (Reddy, 2015). Similarly, in the state of Goa there was a proposal to make the regional language of the state as the MoI. Parents protested by blocking highways to demand that English be the MoI (PTI, 2015). Jayaram (1993) observed: 'Linguistic ethnocentricism' has led to political mobilisation of people on pro- or anti-language basis'... with, 'the ideology of anti-English stance has repeatedly emphasised that English is a symbol of foreign domination and of colonialism and neo-colonialism'   (p. 94).

To address the strong support for English amongst students and their families, the State should offer educational facilities with English as the MoI. Facility with English offers significant educational advantages and international mobility, as well as access to global know-how. As such, it is important to impart English skills to students at the earliest stages of their education. To level the playing field, remedial English language classes should be offered to students from high school onwards so that students are ready to take challenging courses in higher education.

References

Agarwal, P. (2007): "Higher Education in India: Growth, Concerns and Change Agenda", *Higher Education Quarterly*, 61(2), pp. 197–207.

Basu, K. (2001): "On the Goals of Development", in G.M. Meier and J.E. Stiglitz (eds.), *Frontiers of Development Economics: the Future in Perspective*. New York: Oxford University Press, pp. 61-86.

Basu, K. (2006): "Globalisation, Poverty and Inequality: What is the Relationship? What can be Done?", *World Development*, 35, pp. 1361-1373.

Bourguignon, F. (1979): "Decomposable Income Inequality Measures", *Econometrica*, 47, pp. 901-20.

Census of India (2001a): *General Note*. New Delhi: Office of the Registrar General and Census Commissioner, Ministry of Home Affairs. Retrieved from http://www.censusindia.gov.in/Census_Data_2001/Census_Data_Online/Language/gen_note.html

Census of India (2001b): *Statement 4: Scheduled Languages in Descending Order of Speaker's Strength*. New Delhi: Office of the Registrar General and Census Commissioner, Ministry of Home Affairs. Retrieved from http://www.censusindia.gov.in/Census_Data_2001/Census_Data_Online/Language/Statement4.aspx

Government of India (GOI) (1986): *National Policy on Education 1986*. New Delhi: Ministry of Human Resource Development.

Jayaram, N. (1993): "The Language Question in Higher Education: Trends and Issues", *Higher Education*, 26(1), pp. 93-114.

Krishna, A. (2013): "Making it in India: Examining Social Mobility in Three Walks of Life", *Economic and Political Weekly,* XLVIIII, pp. 38-49.

Mathews, David (2013): "Expansion Causing 'Chaos' Across the World", 12 April, Times Higher Education.

Ministry of Education (MOE) (1971): *Education and National Development (Report of the Education Commission, 1964-66)*. New Delhi: National Council of Educational Research and Training.

Ministry of Human Resource Development (MHRD) (2009): *Eighth All India Educational Survey, Ministry of Human Resource Development.* New Delhi: Government of India.

Ministry of Home Affairs (1963): *The Official Languages Act, 1963*. New Delhi: Department of Official Languages, Government of India. Retrieved from http://www.rajbhasha.nic.in/en/official-languages-act-1963

National Sample Survey Organisation (NSSO) (2007-08): *India-Participation and Expenditure in Education, 2007-08, 64th Round.* New Delhi: Ministry of Statistics and Programme Implementation, Government of India.

National Sample Survey Organisation (NSSO) (2014): *India: Social Consumption - Education Survey 2014, 71st Round*. New Delhi: Ministry of Statistics and Programme Implementation, Government of India.

Organisation for Economic Co-operation and Development (OECD) (2008): *Higher education for 2030: What futures for quality access in the era of globalisation?*   Paris: OECD.

Press Trust of India (PTI) (2015): "Goa parents Block Roads Demanding English Medium". *Deccan Herald*, July 31, 2015. Retrieved from http://www.deccanherald.com/content/492544/goa-parents-block-roads-demanding.html

Rahman, M. (2012): "Language Exodus Reshapes India's Schools". *The Guardian*, May 15, 2012. Retrieved from http://www.theguardian.com/education/2012/may/15/india-schools-english

Reddy, Y.M. (2015): "Kannada as Medium of Instruction in Primary Schools Opposed by Citizens". *DNA India*. Tue, 7 Apr 2015. Retrieved from http://www.dnaindia.com/bangalore/report-kannada-as-medium-of-instruction-in-primary-schools-opposed-by-citizens-2075459

Sabharwal, N.S. and C.M. Malish (2016): *Diversity and Discrimination in Higher Education: A Study of Institutions in Selected States of India*. CPRHE Research Report. New Delhi: CPRHE, NUEPA.

Sachar Committee Report (2006): *The Social and Economic Status of the Muslim Community in India*. New Delhi: Government of India (Cabinet Secretariat).

Varghese, N.V. (2013): "Private Higher Education: The Global Surge and Indian Concerns", In *India Infrastructure Report 2012: Private Sector in Education.* London and New Delhi: Routledge Taylor and Francis Group (IDFC), pp. 145-156.

Varghese, N.V. (2016): *"Knowledge, Skills and Sustainable Development: Role of Higher Education in a Stage of Massification".* Paper presentation at National Seminar on 'Indian Perspectives on Social Sector Issues and Sustainable Development Goals (SDGs)', Organised by Council for Social Development. New Delhi, 15-16 July, 2016.

Vishnu, U. (2015): "They Get Leg-up at JEE But Hard Landing on Campus". *Indian Express*, 6 August 2015. Accessed from http://indianexpress.com/article/india/india-others/they-get-leg-up-at-jee-but-hard-landing-on-campus/

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About the paper

This paper examines the use of English as the medium of instruction in Indian education and the advantages it confers for further studies. Based on a careful analysis of National Sample Survey (NSS) data for 2007-2008 (64th round) and 2014 (71st round), this paper shows that the share of students following English as the medium of instruction is increasing over the years. Majority of pupils studying in English attend private unaided institutions which are invariably levying fees. A much larger proportion of upper class pupils, upper-caste, male pupils, non-poor pupils, and urban pupils study in English. The main argument of the paper is that for true equality of opportunity in education, there should not just be equality of access to education per se but also equality of access to education in English.

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