

MDG & ACCESS TO PRIMARY EDUCATION IN INDIA: FAULTY APPERCEPTION & FORGETFUL ACCOMPLISHMENT

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The present paper attempts to argue that the goal of universalization of primary education has only been sparsely achieved and much has to do with the way access has been defined. at the end of 2015 as we sit-back and analyze the progress made by India on this front and achieving the MDG, we find that our progress is far from satisfactory. The Net enrolment ratio in primary education is still below 90% (88.08% in 2013-14), apparent survival rate i.e. ratio of enrolment in grade-V to that in grade-I has not touched 100% (it is 93% at present with overall drop-out rate being close to 19%), youth literacy rate is still below 90% (86% in 2011), the teacher –pupil ratio is 28 and the ration of female teachers to their male counterpart is 88. We must remind ourselves that these are only quantitative achievements based on a data collection mechanism in which there are lots of manipulations by the ground level functionaries to show their inflated performance. If we attempt to analyze the achievement from the quality perspective the performance is very dismal.

Keywords : Universalisation, Educational development Index

INTRODUCTION

Access to primary education lies at the heart of development and appears as its important pre-condition. Sustained access to meaningful learning that has value, is critical to long term improvements in productivity, the reduction of inter-generational cycles of poverty, demographic transition, preventive health care, empowerment of women, and reductions in inequality. Considering this crucial importance of education universalization of primary education was accepted in the Directive Principles of State Policy & as a major Millennium Development Goal. The progress on the front during the last decade and a half in terms of ensuring access to primary education to everyone however is meagre and the job remains elusive and looks onerous and gigantic.

The present paper attempts to argue that the goal of universalization of primary education has only been sparsely achieved and much has to do with the way access has been defined. The government's approach of looking at access first as composite of major outcomes like literacy rate, enrolment ratios, drop-out rates, gender-parity index etc. and then on the basis of NUEPA's Educational Development Index that added the issue of access(in-terms of reach), infrastructure and teachers availability to outcome; has proved to be grossly unsatisfactory. The approach has been poco-curante in including other relevant aspects such as the issue of affordability of education and attitude of providers. The demand side issue of adaptability showing willingness or otherwise of first generation learners to join educational institutions has also remained completely ignored. We need to understand that mere availability of facilities cannot ensure access. Availability must be accompanied with adequate financial means, the will and commitment of the providers and the willingness of the recipient to accept education as a merit good. Thus the achievement on the front of primary education could neither be viewed from the perspective of availability of infrastructure or enrolment nor can any effort to improve attainment on the front of universalization of primary education be ensured through making interventions from the side of provision of facilities. A comprehensive all encompassing concept of access to primary education has to be developed and

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after analysing on what aspect of the access index, a particular region is faltering appropriate policy interventions can be made to reach the goal. It is precisely these related aspects of access to primary education that the present paper attempts to identify and measure.

The paper is structured into four sections. Section-I explains how the universalization issue has been attempted from a rather narrow confines. It attempts to provide a broader perspective of access to primary education in terms of availability, affordability, acceptability and adaptability. Section-II mentions the methodology of measuring the four A's that constitute access and then using DISE data computes Access Index for different states in India and compares the ranking done by the present method with the EDI computed by NUEPA. Section-III, presents district wise access index for Jharkhand and then attempts to analyse how different districts fare in terms of the four components of access. Section-IV provides Concluding remarks and raises some policy issues.

MDG & CONCEPTUALISATION OF ACCESS

India, having the oldest system of education, always realised the importance of education. The Constituent Assembly put Article-45 in Part-IV of the Constitution making provision of universal primary education a Directive Principle of the State Policy. A number of Commissions and National Education Policies from time to time recognized importance of universalization and made efforts in this regard. A number of programmes (National Literacy Mission, District Primary Education Programme, Sarva Shiksha Abhiyan to name a few) were introduced, international assistance was sought and ultimately "The Right of Children to Free and Compulsory Education Act 2009" was passed which came into effect on April 1, 2010. The MDG also identified 'Universalization of Primary Education' as one of the eight goals for the millennium to be achieved by 2015 and urged the nations of the world to give universalization of primary education a significant push.

Today towards at the end of 2015 as we sit-back and analyze the progress made by India on this front and achieving the MDG, we find that our progress is far from satisfactory. The Net enrolment ratio in primary education is still below 90% (88.08% in 2013-14), apparent survival rate i.e. ratio of enrolment in grade-V to that in grade-I has not touched 100% (it is 93% at present with overall drop-out rate being close to 19%), youth literacy rate is still below 90% (86% in 2011), the teacher-pupil ratio is 28 and the ration of female teachers to their male counterpart is 88. We must remind ourselves that these are only quantitative achievements based on a data collection mechanism in which there are lots of manipulations by the ground level functionaries to show their inflated performance. If we attempt to analyze the achievement from the quality perspective the performance is very dismal. Commenting on India's performance a UN Report says- "Latest data suggest that India is off-track on the targets to achieve universal enrolment and completion. Large numbers of children still remain out of school and fail to complete primary education. The quality of education is also a major concern. Direct testing of primary school students indicates very poor learning achievements in core areas of reading and mathematics with little improvement. Far greater effort is needed not only to achieve quality universal primary education, but also to achieve the SDG target of universal secondary education." ('India & The MDGs: Towards Sustainable Future For All' United Nations, Feb, 2015, pp 7-8,).

As a matter of fact our emphasis from the beginning has been on achieving universal primary education through expanding infrastructure and making free education available to the masses. The government has always concentrated its efforts on increasing the number of schools and teachers, making teaching aids available in schools, subsidizing the cost of education and making education free and has highlighted its achievement in terms of the gross enrolment ratios, literacy rate, gender parity ratio, drop-out rates etc. Though, it is true that when we are assessing our progress we need

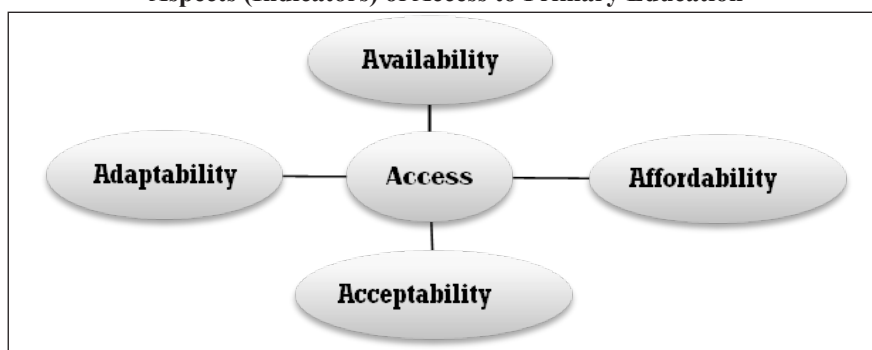
some crucial indicators but the more relevant issue is to ensure that these indicators are reliable and are able to measure what they attempt to.

The Education Development Index (EDI) by NUEPA was a major development in this field. The EDI attempts a broad based index of level of achievement in the field of primary education. EDI uses DISE data to compute the index. It divides the indicators into four broad categories namely **Access** (highlighting the physical reach of primary schools for children), Infrastructure, Teachers (Emphasising on availability and qualification of teachers, teacher-pupil ratio and not on their attitude or commitment) and Outcome (that includes different rates like enrolment ratio, drop-out rates etc.). Appendix-1 has the table showing the main indicators and sub-indicators of EDI. The primary reservation of the present authors is on the indicators chosen by EDI.

We argue that the progress in the field of universalization of primary education can be measured on the basis whether access to primary education is being ensured or not. From this perspective access is a composite of four factors (Raman & Sulochana, 2013).

Chart-I

Aspects (Indicators) of Access to Primary Education



Availability

The progress made in the field of Universalization of Primary Education can be indicated by the availability of infrastructure (as emphasised by EDI). Availability of requisite infrastructure has been judged to be the main determinant of attainment, as if the latter could be possible only through ensuring the former. Govinda and Varghese (1992) have observed that retention in schools is related to the availability of basic facilities in schools. Tilak (1996) found the proximity of primary school with the habitation area of the targeted children as a significant factor influencing the enrolment of children in schools. Dreze and Kingdon (2001) also found strong positive correlation between the availability of adequate school infrastructure and infrastructure surrounding the schools and enrolments in school, especially of girl children. Basant and Sen (2010) also measured access of higher education by the participation of different social and religious groups in terms of attainment and enrolment in higher education

Although viewing access as attainment simplifies things for us but creates problems at the same time on three counts. First, it provides a partial picture of the concept of access. Mere availability of facilities will not ensure true access until the population, especially the vulnerable section, has requisite financial means to utilize these facilities. Availability of education facilities through private

providers cannot ensure access, as these facilities are beyond reach of the vulnerable section. Second, Government's claims of increased availability & access are applicable only for normal population and not for physically challenged children whose needs are difficult to accommodate in mainstream classrooms (Freire & César, 2003). These children have special educational needs (SEN) and for them availability could be seen as having special schools, residential hostels, specialist knowledge, equipment and support and provision of non-formal education. The conceptualization of access as attainment ignores these factors. Third, defining access in form of attainment will be putting the cart before the ox, in reality "*access ensures attainment and not vice-versa*". In spite of high enrolment, people may not have access in true sense. It is often found that instead of acquiring needful knowledge and skill, people are mostly enrolled for the sake of enjoying various benefits from government schemes, e.g., midday meal programme and different affirmative actions and reservation policies. Treating attainment as the only indicator of access overestimates our progress made in universalization of primary education and distorts our understanding of the real problem.

Affordability

The objections raised above could be addressed by bringing in the issue of *affordability*. Affordability virtually means the cost of education which should be within the reach of recipient. Education involves two types of cost- Economic Cost and Opportunity cost-

- First, we have the economic costs measured in terms of school fees, expenditure on books & reading/writing materials, travelling to school, school uniform, *etc.* The government in a bid to increase access, over the years, has tried to reduce the economic cost to zero by providing free education, text books and writing materials and midday meal. The entire cost of dress to be worn, books, writing materials, pocket allowance and some private/paid educational support to the children of illiterate parents are not met and thus some direct cost is always there.
- Second, we have opportunity cost of education. The opportunity cost could be seen directly in terms of loss of income when the child is prompted for schooling. For poor families even small children are source of earning and support for the family. They earn their meals and some money by serving as child labourers, support their parents in the family productive work, look after the household activities or the younger ones in the family. Schooling of children in such cases results in loss of family income which is even magnified when the quality of education provided in government schools is too poor to enhance the productivity of the taught. Sometimes, in addition to financial cost, parents are discouraged also as it demands a great deal of time and efforts on the part of them, like preparing the child for school, stimulating their interest, helping child in doing homework and establishing affinity with teachers. This ultimately leads to the denial of access to education (Dreze & Sen, 1996).

Thus affordability is a very important determinant of access. With meager income, it is preferable not to send all children to school so the variations of choices emerge, namely educate one child, withdraw the girl child, push the better performing child to another level or let the girls continue in government schools and move the boys to hostels (Meera Lal). The cost of education is therefore important but along with cost another factor that is crucial is the attitude of the providers.

Acceptability

This brings us to the third issue of *acceptability*. Access from this front demands that people who are entrusted with imparting/administering education must have the right attitude towards promoting participation of all social inter-sections of students, apart from abiding by the assigned service rules. They should accept the responsibility to provide educational facilities to the deprived

children. If the teacher's behaviour towards underprivileged children is extremely detrimental, it will ultimately lead to the eviction of students from the educational system (Vasavi 2006; Bordia 2005).

This calls for a radical transformation of society focusing on strategies and activities to sensitize the community, *i.e.*, teachers, administrators, and pupils to change negative attitudes towards the education of marginalized children. Sometimes, it is observed that poor children get little attention and experience exclusion in the form of unfamiliarity with mainstream language used by teachers and other children. In government schools teachers have negative attitude towards education of weaker section of the society- they feel that the deprived section neither has the will nor the right and resources to be educated. As a matter of fact in the presence of widespread inequalities in the distribution of educational facilities across region, social groups and communities and the lack of right attitude among the providers, the incorporation of the educationally deprived and marginalized children into education still remains a problem (Nambissan 2006; Saxena 2006; Jha and Jhingran 2002).

Adaptability

The aforementioned factors attempt to see access from the perspective of suppliers, defining it as bringing education within the reach of the recipient by ensuring all the three A's mentioned above. The real issue, however, is '*Can a mere availability of a facility/service be called access?*' The obvious answer is reiterated to be 'No'. True access remains imaginary unless there is a real demand for education, *i.e.* there is necessary motivation, will, and attitude to be educated. If the beneficiaries do not have the freedom, need and urge to avail the facilities, all efforts of creating the facilities, making it affordable and motivating the providers would fail. In most backward economies people do not have access because they do not want to adapt themselves to changes that education brings. Thus an important issue is *adaptability*. In its enthusiasm to criticize government and universalize availability, the literature has summarily neglected the issue of adaptability.

From the perspective of adaptability access means providing motivation to the children to consider education as an economic good and then adapt to the school environment.

We argue that access can be truly conceptualized and achievement in the field of education can be measured by taking both the supply and demand side factors. Access is multidimensional in nature and therefore its conceptualization should not only include availability (in terms of attainment) and affordability (in terms of cost), rather it must also emphatically involve the subjective aspects like acceptability of provider and adaptability of receiver (as shown in the diagram given below). Sometimes it may happen that a person who is sound from one perspective might be deprived on other fronts. If in any society we find the outcome (in terms of net enrolment ratio or literacy rate) is poor, the fault may not necessarily lie with 'availability of facilities', it can be with the issue of affordability or acceptability or adaptability. For a section for which demand for education is not there (adaptability is low) opening schools or even bringing children to school would not raise literacy and attainment. It is imperative for us to actually measure the performance of any region in terms of the four A's and then try to find the particular A where the region is not doing well. Once it is identified then appropriate intervention in the particular field could be made so that attainment and performance can be ensured. In our next section we try to develop certain indicator on the basis of DISE data and attempt to measure access to primary education in major states of India.

METHODOLOGY & CHOICE OF INDICATORS

The real concern of this paper is to highlight a broader perspective of access to primary education in terms of availability, affordability, acceptability and adaptability. For this, the paper intends to measure the inter-state variation in access to primary education for major states of India, using State Report

Card, DISE data for the year 2013-14. DISE is a comprehensive database on elementary education in India. This is a novel and welcome step by NUEPA but the problem with it is that it is available only with limited set of indicators. Though by conducting a primary survey, more appropriate indicators could be developed, yet the present paper uses available DISE indicators for the computation of access index for different states of India. This is the major limitation of present study.

Availability

DISE gives a data of a number of educational development indicators which provide information about availability. We classify these sub-indicators of availability into three sub-groups. The first group relates to the availability of teachers which includes indicators like, *percentage of female teachers, percentage single teacher school, percentage teachers having graduate degree and above, percentage of professionally trained teachers, pupil-teacher ratio and average teacher per school*. The second group highlights the availability of physical infrastructure i.e., *percentage single classroom school, percentage of schools with girls toilet, boundary wall, drinking water facility, playground, electricity, kitchen-shed, provision of midday meal and classrooms in good condition*. The third group of sub-indicators relates to other indicators of availability like, *Gross Enrolment Ratio and Net Enrolment Ratio*. Table-1 shows different sub-indicators of availability.

Table 1, Availability (Resources)-DISE

Indicators of Availability			
1.	% single classroom schools	10.	% Professionally trained teachers
2.	% single teacher schools	11.	Infrastructure 1. % schools with girls toilet 2. % schools with boundary wall 3. % schools with drinking water 4. % schools with playground 5. % schools with electricity 6. % schools with kitchen-shed 7. % schools providing midday meal 8. % classrooms in good condition
3.	% no female teacher schools (tch \geq 2)		
4.	Gross Enrolment Ratio (GER)		
5.	Net Enrolment Ratio (NER)		
6.	Pupil-Teacher Ratio (PTR)		
7.	% Female Teachers		
8.	Average no. of teachers per school		
9.	% Teachers with graduate degree and above		

Source: Indicators Chosen by Author s from DISE

Since DISE data do not provide any information regarding the per head annual expenditure on items included under the 'direct cost' head, we have gathered the information from NSS 64th Round Survey (July 2007-June 2008), schedule no. 25.2 which is based on participation and expenditure in education. As the report of NSS do not provide the state-wise expenditure on different items for the primary level of education, the *Average annual private expenditure per head on primary education* i.e., Rs. 1413 for all-India level has been taken on a standard basis¹. Here, the direct cost is estimated by deducting *the cost of tuition fee, exam fee, other fees and payments* from the average annual expenditure on primary education as children studying in government school do not incur these. On the other hand, *per head subsidy in the form of textbook, stationary and uniform* is calculated by deducting the average annual expenditure on textbook-stationary (Rs. 285) and uniform (Rs. 206) from the average annual expenditure on education (Rs. 1413), as per data given by NSS 64th round survey (2007-08). The *opportunity cost* has been computed in terms of the loss to guardian by sending the child to school instead of sending him for wage work. Based on the data from Labour Bureau, Govt. of India, Rs. 70.44² has been taken as *standard wage per day for child*

labour. Opportunity cost on annual basis has been computed by multiplying the wage rate by average number of instructional days in a year for each state. *Gross Cost* is obtained by adding the two direct and opportunity cost.

The only universal subsidy payable to all the students studying in govt. schools is in form of mid-day meal. As per the Midday Meal Scheme, Annual Work, Plan and Budget, 2012-13, Govt. of India, the *per capita per day expenditure on midday meal* was coming out to be Rs.3.11³. Multiplying this figure by average number of instructional days per year, we get the total amount of subsidy paid. The *net cost* has been computed by subtracting subsidy from cost. This is shown in Table-2 given below.

Table 2, Affordability - DISE

S.N.	Indicators of Affordability (Cost of Education)	
1	Direct Cost	Average Annual Expenditure on education ⁴ - annual expenditure on tuition fee, exam fee, other fee and payments = Rs. 1413- (Rs. 430+ Rs. 193)= Rs. 790
2	Opportunity Cost	Child labour wages ² @ Rs.70.44 x Average no. of instructional days per year
3	Gross Cost =(1+2)	
4	Subsidy	α) a) Per head subsidy on textbook-stationary & uniform (Rs. 285+ Rs. 206= Rs. 491) + β) b) Per head subsidy on midday meal ³ @ Rs. 3.11 x average no. of instructional days per year
5	Net Cost of Education = (3-4)	

Acceptability

For measuring Acceptability, indicators like, *percentage of schedule caste teachers (male & female) to total teachers in primary schools, percentage of schedule tribe teachers (male & female) to total teachers in primary schools, number of days involved in non-teaching assignment, percentage of teachers involved in non-teaching assignment and average number of instructional days in a school* have been taken into consideration as also shown in Table-3.

Table 3, Acceptability-DISE

	Indicators of Acceptability
1.	% SC male teachers to total teachers
2.	% SC female teachers to total teachers
3.	% ST male teachers to total teachers
4.	% ST female teachers to total teachers
5.	Average no. of days involved in non-teaching assignment
6.	% teachers involved in non-teaching assignment
7.	Average no. of instructional days

Source: Indicators Chosen by Author from DISE

Adaptability

For estimating the demand of social groups towards primary education, *enrolment of different social groups* has been taken as the first indicator of demand for primary education. In order to measure demand therefore we have computed '*participation factor*'. This is done by dividing the percentage of SC enrolment by percentage of SC population in the district. If percentage of SC enrolment exceeds percentage of SC population in the district the value of participation factor will be more than one reflecting a positive attitude of the caste group towards education and vice versa. Similarly, another indicator i.e. the percentage SC girls to SC enrolment in primary have been weighed by sex ratio in particular district so as to make girl's enrolment free from gender bias. The similar procedure has been followed for other indicators related to ST and Muslim population. The percentage of girls by sex-ratio has been taken as an important sub-indicator of adaptability. We have divided the percentage of girls enrolled by the sex ratio of the particular district to get idea about demand for education for girls. Secondly, *Gender Parity Index* has been taken as second indicator taken as a proxy of demand for education of girls. Another important indicator of adaptability is the *Dropout rate*. The student flow analysis assumes that high dropout reflects unwillingness of children to continue education. This is shown in Table-4 given below.

Table- 4, Adaptability-DISE

	Indicators of Adaptability	
1.		Enrolment by Social Group
	i	% SC Enrolment in primary by % SC population
	ii	% SC girls to SC enrolment in primary by sex ratio
	iii	% ST enrolment in primary by ST population
	iv	% ST girls to ST enrolment in primary by sex ratio
	v	% Muslim enrolment by % Muslim population
	vi	% Muslim girls to Muslim enrolment by sex ratio
	vii	% girls by sex ratio
2.		Gender Parity Index
3.		Dropout Rate

Source: Indicators Chosen by Author from DISE

Composite Access Index and Comparison with EDI

National University of Educational Planning and Administration (NUEPA) and the Government of India (MHRD, Department of School Education and Literacy) have attempted to calculate *Educational Development Index (EDI)*, which is exclusively based on DISE data. The basic purpose of computing an EDI is to know the position of a state vis-à-vis other states. The EDI is computed at different levels of education, such as, primary, upper primary, elementary and other levels of education. It basically measures the level of educational development of the country through four broad indicators i.e., access, infrastructure, teachers and outcomes, which are further, divided into 23 sub-indicators (given in Table-8 in appendix).

The main vision of developing EDI is to measure the level of educational development of the country and it is not at all intended towards measuring the extent of access to primary education. Though EDI uses the term ‘access’, it defines the same in a very narrow purview. It measures access mainly in terms of percentage of un-served habitations and availability of schools per thousand child population while ignoring other demand and supply side aspects influencing access. Most of the indicators taken in the computation of EDI either depict inputs or outcomes. These outcome measures in no way endeavour to estimate the attitude of teachers or the willingness of children towards continuing/accessing education. In fact, EDI overshadows the subjective issues like, acceptability & adaptability and follows a one-sided approach considering only availability and no attempt has been made by EDI to calculate the economic as well as opportunity cost of education. It is this shortcoming of the EDI that has encouraged the present authors to come up with a broader perspective of access by focusing on cost of education, attitude of providers and recipients as well instead of estimating the progress only in terms of enrolment/infrastructure/outcome. The methodology of computation of this index is explained below-

Methodology of Computation of Comprehensive Access Index- With a broad conceptualisation of access as based on the four A’s as discussed above we first normalise the indicators. Normalised values range between 0 and 1 and it indicates the relative position of state with reference to a selected indicator. For normalisation, first the best value and the worst value has been identified which is further kept in the following formula of transforming sub-indices.

$$NV_{ij} = 1 - \left(\frac{\{\text{Best } X_i - \text{Observed } X_{ij}\}}{\{\text{Best } X_i - \text{Worst } X_i\}} \right)$$

Upon receiving the Normalised Values for all the indicators across States, the next step is to assign factor loadings and weights. Principal Component Analysis (PCA) is used to compute the Factor Loading and Weights of these indicators. Thus, by calculating indices for all the four types of indicators (4A’s), the composite Access Index has been finally computed for Primary education. The following formula is used to determine the Index-

$$I = \frac{\sum_{i=1}^n X_i \left[\sum_{j=1}^n |L_{ij}| \cdot E_j \right]}{\sum_{i=1}^n \left[\sum_{j=1}^n |L_{ij}| \cdot E_j \right]}$$

Where I is the Index, X_i is the i_{th} Indicator; L_{ij} is the factor loading value of the i_{th} variable on the j_{th} factor; E_j is the Eigen value of the j_{th} factor.

Based on the above methodology, first the group index of 4A’s have been calculated and thereafter PCA has been applied to aggregate 4A’s for arriving at composite index of access for different states of India. This is depicted in Table-5. This table shows the relative position of different states in terms of access to primary education. Based on total span and equal (class interval), we have classified different states into three categories: top performer, medium performer and low performer.

Table-5, State Level Access Index & Comparison with EDI

Category	States	Availability Index*	Affordability Index*	Acceptability Index*	Adaptability Index*	Access Index*	Rank	EDI#	Rank
Top Performer <0.53	Kerala	0.601	1.000	0.232	0.697	0.633	1	0.680	3
	Tamil Nadu	0.686	0.545	0.409	0.691	0.561	2	0.712	1
	Madhya Pradesh	0.650	0.485	0.549	0.577	0.556	3	0.559	13
	Chhattisgarh	0.572	0.273	0.684	0.686	0.531	4	0.575	11
Medium Performer 0.43-0.52	Odisha	0.547	0.394	0.521	0.648	0.509	5	0.583	10
	Gujarat	0.577	0.242	0.657	0.617	0.503	6	0.678	4
	Maharashtra	0.538	0.303	0.579	0.692	0.503	7	0.634	7
	Punjab	0.715	0.273	0.546	0.533	0.495	8	0.674	5
	Assam	0.407	0.455	0.376	0.766	0.474	9	0.490	17
	Andhra Pradesh	0.303	0.394	0.499	0.692	0.456	10	0.564	12
	Karnataka	0.579	0.152	0.498	0.704	0.443	11	0.705	2
	Jharkhand	0.539	0.030	0.647	0.664	0.433	12	0.502	16
Low Performer >0.42	Haryana	0.524	0.242	0.448	0.605	0.427	13	0.616	8
	Uttarakhand	0.497	0.152	0.501	0.675	0.420	14	0.664	6
	Uttar Pradesh	0.493	0.242	0.442	0.606	0.419	15	0.554	14
	Rajasthan	0.414	0.303	0.374	0.434	0.371	16	0.587	9
	West Bengal	0.589	0.000	0.390	0.711	0.367	17	0.550	15
	Bihar	0.353	0.030	0.457	0.516	0.310	18	0.444	18
	All States	0.532	0.306	0.489	0.640	0.467		0.598	

Source: *Authors' Calculation from DISE Data

Elementary Education in India: Progress Towards UEE, DISE 2013-14: Flash Statistics

The evolved factor structure of the 4A's of access to primary education that are interconnected based on the Kaiser criterion of Eigen value is presented in Table-6.

Table 6, Total Variance Explained

Com- ponent	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.547	38.672	38.672	1.547	38.672	38.672	1.492	37.305	37.305
2	1.157	28.929	67.600	1.157	28.929	67.600	1.212	30.295	67.600
3	0.908	22.712	90.312						
4	0.388	9.688	100.000						
Extraction Method: Principal Component Analysis.									

Source: Authors' Calculation from DISE Data

The initial Eigen Values which are more than one have been identified from the data set. After this the same number of components has been extracted for each variable as shown in Rotational Component Matrix column in Table-7. In the present data set, since two Eigen values (for indicators namely, availability index and affordability index) are above 1 (as depicted in Table 6), two components have been extracted. This shows that out of four indicators the above two indicators are significant in affecting the access to primary education. Availability of infrastructural facilities, economic as well as opportunity cost of education especially for the weaker section determine whether primary education would be actually demanded by the targeted section or not.

Table 7, Factor Loadings of 4A's Indices

Rotated Component Matrix			Eigen Values		Weights
Indicators	Components		1	2	
	1	2	1.546864	1.157154	
Availability Index	0.146	0.839	0.226	0.971	1.197
Affordability Index	-0.795	0.405	1.229	0.468	1.698
Acceptability Index	0.898	0.183	1.389	0.212	1.601
Adaptability Index	-0.180	0.558	0.279	0.645	0.924
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.					5.420
a. Rotation converged in 3 iterations.					

Source: Author's Calculation from DISE Data

Table-5 shows the ranking of states of India in terms of access to primary education. There are some important observations to be made – First, the overall achievement of the states in terms of access to primary education is not satisfactory. The average index score of all states is found to be only 0.467. In an era in which the importance of education is supposedly appreciated by all and ensuring universalization of primary education is regarded as one of the goal of MDG, the figure

is really dismal. Second, the states like, Kerala, Tamil Nadu, Madhya Pradesh and Chhattisgarh fall in the category of top performer states in access index. This is quite obvious as these states are also having highest literacy rate. This shows that people are more aware about the importance of education and they prefer to invest in children's education despite having its long term returns. That is why the demand for education in the four states is also high with scores 0.697, 0.691, 0.577 and 0.686, respectively. Third, if we closely analyse the states which are low performers and are placed in the bottom of access index, we notice that Haryana, Uttar Pradesh, Uttarakhand, Rajasthan, West Bengal and Bihar have very high cost of education (as the affordability index is below 0.3). This shows that the affordability of primary education among these states is very low. This highlights that the typical attitude of parents which gives preference to immediate returns by engaging children in earning activities rather than sending wards to schools which gives returns only after a long period of time. Fourth, Along with this, the acceptability index is also not very encouraging among these states. This is so because teachers mostly remain busy in non-teaching activities during school hours and rarely pay attention to the first generation learners. This unfortunately forces teachers to drift away from their commitment level and makes them resistant to accept their roles of imparting education to the weaker sections. Fifth, the nature of medium performer states is a mixed one. While Punjab has a high literacy rate i.e., 74.04% which is also proved in our calculation of availability index (i.e., 0.715 in terms of well-equipped infrastructure and facilities), it lags behind in terms of the motivation and will of teachers to teach the weaker sections (0.546). Moreover, the fruits of educational development do not reach the targeted sections which are why they remain unaware about the productivity of education. This ultimately depresses demand for education (with a low value, 0.533). On the other hand, states like, Jharkhand, Karnataka, Punjab, Gujarat and Maharashtra show a discouraging affordability index regardless of having a considerable infrastructure at school. This reveals that in spite of all the free bees distributed in government schools, parents consider such system as 'anarchic' and prefer to send their wards to private schools. And since education in private school involves cost of fees, textbooks, uniform, stationary, transport, etc. the cost of education is high in these states and therefore affordability is low.

DISTRICT WISE ACCESS INDEX FOR JHARKHAND

There exists wide interstate and intrastate disparity in economic as well as human development in India, something that is not only putting question about the reliability of the growth process but, at the same time resulting in growing discontent and disillusionment among the masses. The inequalities in education among states and among different regions/districts of one of the state like Jharkhand, remains a matter of deep concern.

Keeping this inter-district variation in mind, it is widely acknowledged that different districts of Jharkhand are not on the same plane rather a huge variation even in access to primary education is common among the regions. It is due to this fact that the present section of the paper is focused on developing a composite index of access for 24 districts of Jharkhand so as to know the relative position of different districts in access to primary education. For this, the study has used DISE data from District Report Card for the period 2013-14 and the methodology for computing access index is same as discussed in the previous section.

Table-8 shows different districts of Jharkhand in terms of access index. The data reveals certain glaring points– First; the overall achievement of the state in terms of access to primary education is not satisfactory. The average index score of all states is found to be only 0.484. As Census-2011 suggests, the literacy rates across the districts of Jharkhand range from a low of 49 per cent in Pakur to 76 per cent in Ranchi, the capital of Jharkhand. Due to this large inter-district variation in literacy,

the overall access index is showing a low value. As a matter of fact, this low achievement is also accounted to a low affordability of weaker sections to send children to schools corresponding to high opportunity cost.

Table-8, Access Index for Districts of Jharkhand

Category	District	Availability Index	Affordability Index	Acceptability Index	Adaptability Index	Access Index	Rank
Top Performer <0.53	Bokaro	0.336	1.000	0.415	0.721	0.623	1
	Godda	0.573	0.867	0.332	0.632	0.593	2
	Ranchi	0.607	0.633	0.479	0.625	0.581	3
	Pashchimi Singhbhum	0.597	0.900	0.422	0.420	0.580	4
	Dhanbad	0.587	0.500	0.412	0.750	0.555	5
	Deoghar	0.537	0.700	0.263	0.735	0.549	6
	Kodarma	0.375	0.700	0.431	0.610	0.532	7
Medium Performer 0.43-0.52	Jamtara	0.619	0.233	0.490	0.711	0.507	8
	Khunti	0.766	0.300	0.630	0.356	0.506	9
	Dumka	0.610	0.400	0.429	0.565	0.494	10
	Garhwa	0.503	0.433	0.540	0.474	0.489	11
	Lohardagga	0.454	0.267	0.522	0.597	0.461	12
	Gumla	0.614	0.300	0.537	0.406	0.460	13
	Palamu	0.616	0.100	0.513	0.626	0.458	14
	Sahibganj	0.569	0.367	0.382	0.534	0.455	15
	Giridih	0.411	0.400	0.365	0.645	0.453	16
	Chatra	0.716	0.133	0.425	0.576	0.449	17
	Hazaribag	0.295	0.133	0.554	0.773	0.447	18
	Latehar	0.709	0.000	0.605	0.462	0.437	19
	Purbi Singhbhum	0.485	0.133	0.519	0.594	0.432	20
Low Performers > 0.42	Simdega	0.729	0.033	0.703	0.265	0.429	21
	Saraikela-Kharsawan	0.266	0.433	0.456	0.440	0.406	22
	Pakaur	0.333	0.367	0.381	0.515	0.401	23
	Ramgarh	0.512	0.000	0.467	0.324	0.322	24
	All Districts	0.534	0.389	0.470	0.557	0.484	

Source: Authors' Calculation from DISE Data

Second, the top performer districts like, Bokaro, Ranchi, Dhanbad and Kodarma are the one which are the most industrialized zones of India and are also home to the largest steel plant and several other large, medium and small industries. This simultaneously raises the level of development in

these districts which concurrently makes people conscious towards their well-being. This could be seen in terms of high adaptability score signifying high demand for primary education across these districts. This means that the weaker sections like, SC and ST consider education as an economic good. For these districts affordability is not at all a problem. Parents not only afford rather they desire to educate their wards. However, a more effort is needed on the part of commitment level of teachers as well as the quality of infrastructure which ultimately boosts the learner's achievement and motivates them towards continuance in studies. Third, among the medium performer districts, the districts which have low literacy rates are also those with lower enrolments and participation, higher dropouts and out of school children as well as poor learner achievement levels. The involvement of teachers in non-teaching work is one of the major factors that hinder improvement in the access to education. As regards the low performer districts, cost of education is found to be the striking factor which adversely affects access. Low affordability forces the parents to make a choice either to send children to schools or engage them in some earning activities. Here access becomes selective.

In general the situation of rural Jharkhand, which comprises a bulk of the population with only 22 per cent urbanization, is particularly backward in terms of most educational indicators. This is so remarkable that even the urban girls are better than the rural boys in an otherwise gender disparate society. Apart from the social group variations, differences across the districts of this educationally backward state are also striking. The recent efforts to enrol all children in the elementary school going ages has shot up the enrolment rates and also increased literacy rates in the few years' time. But this has not as yet substantially changed the scenario among rural areas, with lack of motivation among students and teachers being irresponsible towards their job.

CONCLUSION

The measurement of access on the basis of the 'Four A' concept as discussed above shows that the task of universalization of primary education cannot be approached from the perspective of ensuring availability of infrastructure and we cannot sit comfortable patting our back looking at the net enrolment ratios and other quantifiable indicators. It is true that the available DISE data do not provide us with very suitable indicators of acceptability and adaptability and we are able to make only vague estimates from the available data (the present authors have attempted to develop a set of broad based sub-indicators for acceptability and adaptability and have conducted primary survey for the district of Varanasi in order to comprehensively measure access. The paper is under consideration for publication), still it provides sufficient encouragement to draw two conclusions-

First, there is need to broaden our purview and include the acceptability and adaptability aspect as well. Unless this is done achievement on the front of primary education cannot be measured.

Second, We cannot adopt 'ensure availability raise access and achievement' approach to handle the specific problems of different regions. We need to identify why a particular region is not doing well in achievement of primary education targets. We can find whether the problem is from the side of availability of infrastructure or low commitment or low demand. It can be easily seen and proved that for certain section of the society e.g. gypsies and deprived section, the problem is not so much of availability as of demand for education. This section keeps roaming, knows that children can at the most get primary education and this education is not productive and has a very high opportunity cost of education. Quite obviously there problem needs to be tackled from the demand side and the side of affordability. Looking at the access index of Jharkhand, we could notice that though overall also the state is not doing well, the problem is more acute in the area of affordability. The affordability index for the state returns a figure of 0.389 only with some districts like Latehar, Simdega, Chatra, Hazaribagh having very low figure. These districts have very high tribal population. Poverty here is

very high and so is unemployment. The poor section is not finding primary education productive at all and we have not been able to convince them, that after completing primary education the children and go on and get a higher education degree and good job. The guardians prefer sending children to earn some money for the family. In these districts there is no shortage of infrastructure as compared to other districts. Obviously here demand side interventions are required to boost achievement in the field of primary education. One can suggest policies like developing tailor made education system, compensating the guardians for the monetary loss etc. (Sulochana & Raman, 2014). In the similar vein we can give some suggestions for other districts of Jharkhand state as well.

Third, It is high time we stop giving importance to only quantitative factors like enrolment ratios or drop-out rates etc. And turn our attention to the qualitative factors. If we want to universalise education, then obviously the return on education has to be improved. This requires among other things- first, improving the curriculum and providing some kind of vocation training even at the primary level. The best way to come up with some training programmes for primary school going children so that after passing this level the children are assured of some income, second, making the human resource planning in the country more broad based so that it takes care of even the primary pass-outs, third, evolving a better system of regulation and quality control for government schools. The Kendriya Vidyalayas could be taken as role models for state run primary schools. It is high time that the states where achievement is low take inspiration from KVs and schools of better performing states and adopt the system prevalent there.

We can end up saying that the job of universalization of quality primary education is onerous. It requires reconceptualising access and redefining achievement in the field of primary education. We need to identify the specific problems faced by different states and their regions and identify the problem area first and then take appropriate steps. The interventions required can vary from changing the attitude of teachers and providers to creating demand for education and not necessarily expanding the facilities.

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Appendix-1
Indicators Used in Computing Educational Development Index

Component	Indicator
Access	Density of Schools per 10 Sq. Km.
	Availability of Schools per 1000 Child Population
	Ratio of Primary to Upper Primary Schools/Sections
Infrastruc- ture	% of Schools with Student-Classroom Ratio : Primary > 30 & Upper Primary > 35
	Percentage Schools with 1:1 Classroom-Teacher Ratio
	Percentage of Schools with Drinking Water Facility
	Percentage of Schools with Boys' Toilet
	Percentage of Schools with Girl's Toilet
	Percentage of Schools Required and have Ramp
	Percentage of Schools with Kitchen-shed (Government and Aided Schools)
Teachers	Percentage of Schools with Female Teachers (In schools with 2 and more teachers)
	Percentage of Schools with Pupil-Teacher Ratio : Primary > 30 & Upper Primary > 35
	Percentage of Single-Teacher Schools
	Teachers without Professional Qualification
Outcome	Average Number of Instructional Days
	Average Working Hours for Teachers
	Percentage Change in Enrolment in Government Schools over the previous year
	Gross Enrolment Ratio
	Participation of Scheduled Castes Children: Percentage SC Population (2011 Census) - Percentage SC Enrolment
	Participation of Scheduled Tribes Children : Percentage ST Population (2011 Census) - Percentage ST Enrolment
	Participation of Muslim Children : Percentage Muslim Population (2001 Census) - Percentage Muslim Enrolment
	Ratio of Girls' Enrolment to Boys Enrolment (GPI)
	Drop-out Rate
	Transition Rate from Primary to Upper Primary level

Source: Elementary Education in India: Progress Towards UEE, DISE 2013-14: Flash Statistics