

Towards Reforming the Education System in India

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Abstract

Education is a major determinant of human resource development which enables people to get better insights into the complex world they inhabit, enabling them to harness and experience their potential capabilities. This paper scrutinises the performance of the entire gamut of the education sector of India. To weigh this performance with some yardstick, the study makes a comparison of India's performance with that of other BRICS countries. The study focuses on governance structure, quality of educational standards, and inequality issues, and addresses the issues relating to increasing prominence of privatization at all levels of education and its consequences on efficiency and equity in educational facilities. Overall, the study stresses the importance of "more and better education" including high levels of technical knowledge and skill formation. It highlights the possible impact of the COVID-19 pandemic on the education sector in India. Finally, it identifies the emerging challenges in higher education and suggests reforms for achieving efficiency with equity which is the sine qua non for building a better and advanced society.

JEL: I20, I24, I28

Key Words: Education Sector, Governance, Quality, Inequality, BRICS, COVID-19.

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I. Introduction

Education is a key component and major determinant of human resource development. It enables social transformation and economic well-being both at individual and national levels. According to Noble Laureate Amartya Sen, education is both a constituent and instrument of well-being. “Universal primary education” was one of the eight UN Millennium Development Goals (MDGs); and “quality education” is the fourth in the seventeen Sustainable Development Goals (SDGs) adopted by the UN in 2015–successor to the MDGs. The SDG for education aims to (i) provide equal access to affordable vocational training, (ii) eliminate gender disparities in education, and (iii) achieve universal access to quality higher education. India has been a signatory to these UN efforts to bring about concerted socio-economic improvements in its member societies.

It is widely recognised that the progress of a country depends on the quality of its manpower in terms of knowledge, skills, competencies, and related attributes. Skill development and knowledge enhancement of the workforce are vital for promoting economic growth. Education has positive externalities as well. People using new technology and methods can spread the same to others around them.

The relationship between educational inequality and economic equality is interactive and mutually reinforcing. Persons from wealthier sections of society have access to better schools and higher educational institutions, while those from the deprived sections settle for lower quality of education. In the process, educational inequality widens resulting in the preponderance of poorly educated persons in low paying jobs and better educated persons in highly paying jobs. It is argued that equal educational opportunities can neutralize adverse consequences of family circumstances and help in reducing the inequalities (OECD, 2012). According to the Nobel Laureate Stiglitz, the existing educational system is one of the major institutions perpetuating inequality, especially in less developed countries.

Policies focussing on equity in education can promote inter-generational improvement in earnings and reduce income inequalities. For developing countries, expanding quality education and reducing inequality in education have been major challenges.

How is India confronting these challenges? The next section dwells upon this issue further.

II School Education

The Department of Education was set up under the Central Ministry to expand educational facilities after India’s independence. Since 1960, the focus on access has been gradually moving towards improved quality. Consistent with this vision, the National Policy on Education was formulated in 1968. The 1990s saw several policy initiatives and programmes, following ‘The World Declaration in Education for All’, adopted in 1990 by the international community including India. Programmes such as *Operation Black Board* for improving primary education and *District Primary Education Programme* were introduced.¹

In 2000-01, the country launched the major programme, *Sarva Shiksha Abhiyan* (SSA), for universalising elementary education, improving elementary education and reducing gender and social gaps. Thereafter, a constitutional amendment was passed by the Parliament in 2002 making education a Fundamental Right of every child in the age group 6-14 years. This culminated in the launch of the Right to Education (RTE) Act 2009, which has been in operation since 2010 and which provides free and compulsory education to children in the age group 6-14 years.²

The most recent Draft Education Policy suggests mainstreaming pre-primary education in the age group of 3-6 years by extending the RTE Act 2009 (Government of India, 2019a). This is a very positive

measure since it is believed that a major part of the brain develops before 6 years of age, helping to induce children to continue education.

Literacy

The literacy rate in India improved from 52 per cent in 1991 to 74 per cent in 2011 and the gap between male and female literacy rates is on the decline since 1981 (Figure 1).

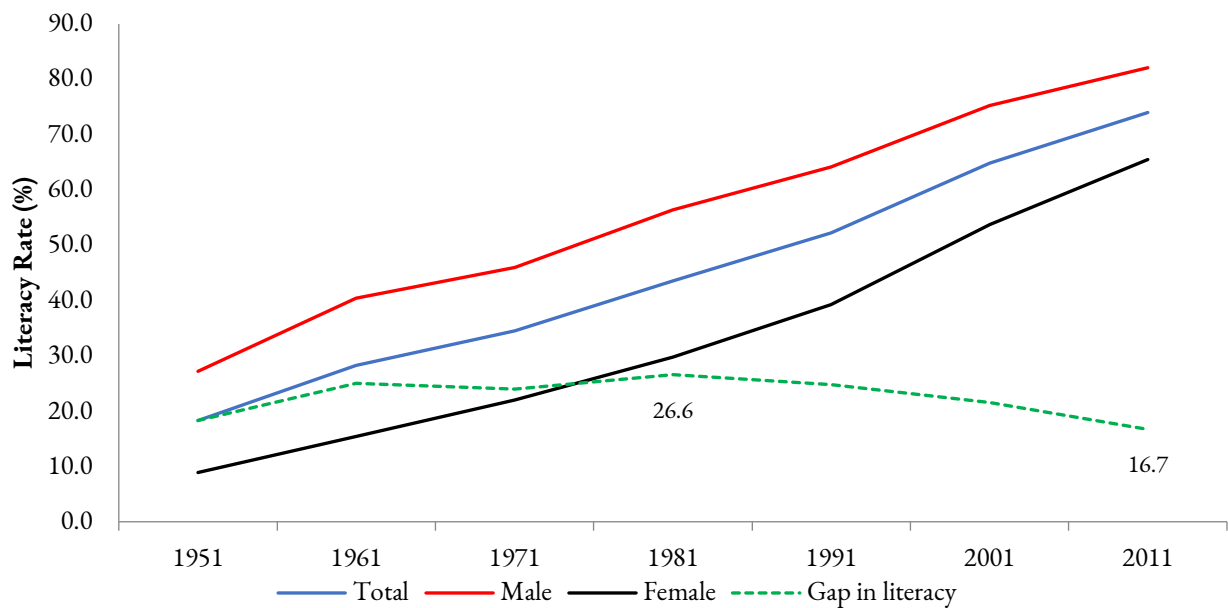
However, it is worth noting that India lags other BRICS countries in terms of literacy rates. The adult literacy rate in India was lower than that of Brazil, China, Russia and South Africa (Table 1). Further, India also lags in mean years of schooling. Thus, there is a huge challenge in bridging this gap.

Table 1: Social Sector Development Indicators in BRICS

Indicator	Brazil	Russia	India	China	South Africa
Adult Literacy Rate (Male), 15 year+ (%) 2010-19	93	100	82	98	88
Male population with at least Secondary Education, % (ages 25 and older), 2010-18	57.7	95.7	63.5	83.0	78.2
Gross Tertiary Enrolment Ratio, 2013-18	51.3	81.9	28.1	50.6	22.4
Pupil-Teacher Ratio in secondary education, 2018	17	--	29	13	28
Public Expenditure on Education as a % of GDP, 2017	6.2	3.8	3.0	--	6.1
Researchers in R&D per million people, 2010–18	888	2822	253	1225	492
Expenditure on R&D as a % of GDP, 2010–18	1.26	1.11	0.6	2.15	0.82
High-technology Exports as a % of Manufactured Exports, 2018	13.0	11.0	9.0	31.4	5.3

Source: World Development Indicators, World Bank, 2020; UNDP (Human Development Report 2019)

Much depends on how India can improve the performance of economically weaker states such as Bihar, Jharkhand, Uttar Pradesh, and Madhya Pradesh where literacy rates are relatively low. At the same time, it is interesting and worth observing that north-eastern states, other than Assam, could achieve high levels of literacy though their per capita GSDP is low; this could be attributed to the initiatives of voluntary and religious organisations operating in that region.

Figure 1: Literacy Rate in India and Gender Gap in Literacy (%)

Source: Census of India

Elementary Education

In India, there has been a substantial quantitative expansion of school education in both the public and private sectors. One key accomplishment has been the presence of a school in every village. The number of primary schools increased from 5.6 million in 1990-91 to 8.5 million in 2014-15, whereas upper primary schools increased from 1.5 million to 4.3 million (Government of India, 2016a).

The near universal enrolment of children of school-going age has been achieved and the rural-urban differences and gender gaps have been narrowing.³ SSA 2001 and RTE ACT in 2009 have resulted in phenomenal improvements in educational performance. Schemes such as ‘mid-day meal’ and targeting eight years of compulsory education helped enrolments and reduced drop-out rates. The Gross Enrolment Ratio (GER) in primary education increased from 83.8 in 1990-91 to about 100 in 2014-15 and GER in upper primary increased from 66.7 to 91.2 during the same period. For a nation of a billion plus population, these have been significant accomplishments. However, field studies concerning primary education have revealed discrimination on lines of caste, community, and gender despite enacting the RTE ACT and rising GER.

Yet, one must not lose sight of the fact those aspirational levels of even the lower income groups have improved and do struggle to earn some extra incomes to provide for better private education for their children. At the same time, central and state governments are making earnest attempts to improve the standards of education in Government schools.

Secondary School Education

Several studies emphasise the importance of secondary education in developing countries for the following reasons: i) demand for secondary education has been growing fast due to significant expansion of primary education, which has since become universal; ii) economic growth requires highly skilled manpower, which is more in the domain of secondary rather than primary education; and iii) it serves as

a vital foundation to promote communication and analytical capabilities and critical thinking. In this context, it is worth noting that the early expansion of secondary education and public investment in secondary education benefited East Asia (Birdsall, Campos, Kim, Corden, & MacDonald, 1993). The increase in public spending in most of Latin America, as well as in Korea, Malaysia and to a lesser extent in Thailand, appears to have generated a 'quantity effect' (a more egalitarian distribution of human capital and a drop in the ratio of skilled to unskilled wages) which helped in equalising the wage distribution (Cornia, 2014).

Though India launched the *Rashtriya Madhyamik Shiksha Abhiyan* (RMSA) in March 2009 as a centrally sponsored scheme for improving access and quality of secondary education, the country was at a huge disadvantage with regard to pupil-teacher ratio in comparison to Brazil and China in 2018 (Table 1). It was also at a disadvantage in terms of male population with at least secondary education in the ages 25 years and older (Table 1).

Though vocationalisation of education was enunciated in the National Policy of Education (1986), and the Central Government has been giving grants to states to implement the programme, vocational training has not been included in the higher secondary curriculum. The rate of vocational training barely increased between 2004-05 and 2011-12. This reflects low skills of the Indian manpower.

Skills in demand must form an integral part of the general education curriculum. The funds available under Corporate Social Responsibility (CSR) can be utilised for skill development.

Quality of Education

Lack of quality education at primary and secondary levels, especially in government schools, is the basic malady that persists in India today. The Annual Survey of Education Report (ASER, 2018) shows that only 42.2 per cent of children in Standard V in government schools in rural areas can read just standard II level text and about 22.7 per cent can do only simple divisions whereas the corresponding figures in private rural schools are 65.1 and 40.0 percent, respectively.

Infrastructure is grossly inadequate in government schools in rural areas. According to the Report of the Committee for Evolution of the New Education Policy (2016), teacher absenteeism, which was estimated at over 25 per cent every day, has been one of the main reasons for the poor quality of student learning outcomes (Government of India, 2016b).

It has been estimated that in Andhra Pradesh, about 85 per cent of the scheduled caste children study in government secondary schools. The Centre for Economic and Social Studies (CESS) case study on ninth grade children in 15 schools with varying management systems across three districts of Andhra Pradesh shows that the average test scores in mathematics and English in residential schools managed by Social Welfare Departments, which are meant exclusively for the scheduled caste children, were the lowest (Vepa & Raghupati, 2018). It is unfortunate that the existing affirmative action for the poor and disadvantaged has been perpetuating the inequality of opportunity.

Privatisation and Unequal Opportunity

The percentage of students in government primary schools declined from 73 in 2007 to 62 in 2014-15; in upper-primary from 70 to 66; and in secondary from 61 to 56. On the other hand, at the primary level, the percentage of children in private unaided schools increased from 13 to 30; in upper primary from 9 to 23 and in secondary from 8 to 25 over the same period. Clearly, there is increasing privatisation of school education.

Private schools are more likely to exist in villages where teachers' absenteeism in public schools is high (Kramer et.al, 2005). A Public Report on Basic Education (PROBE report) attributes the increasing popularity of private schools to the breakdown of government schools as compared to parents' ability to pay. It is not that the pay of teachers is lower in government schools. Also, job security is higher in government schools.

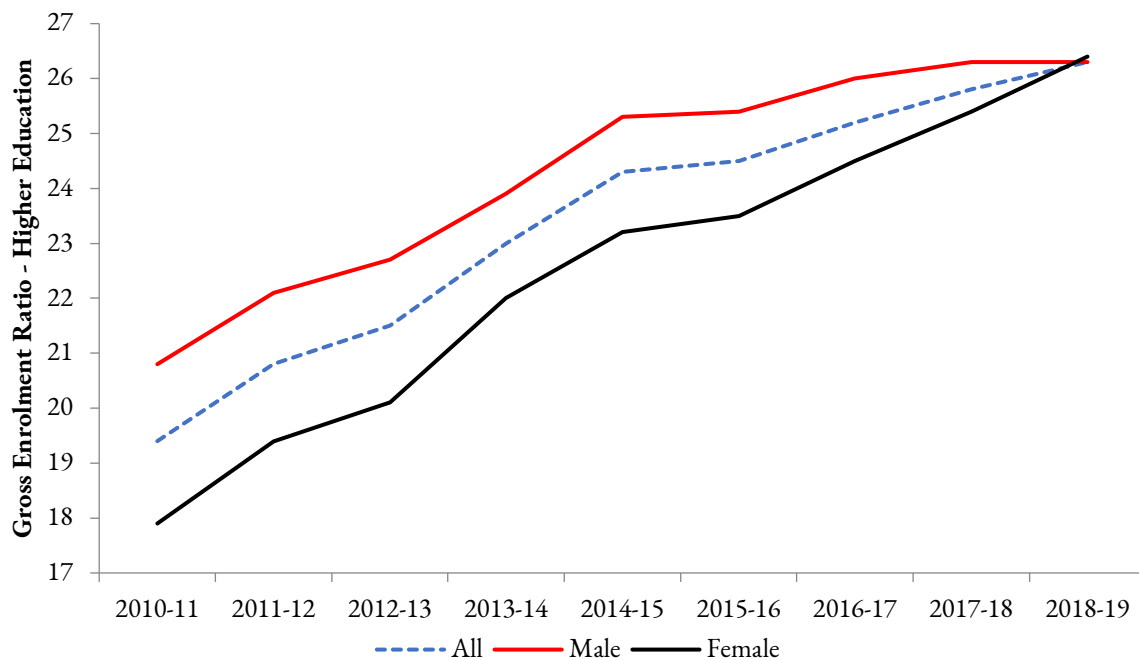
The 71st Round of NSSO Survey found that about four-fifths of rural students and one-third of urban students at the primary level were attending government institutions in 2014. As per the survey, per person per annum expenditure incurred by a household at the primary level during a session in private unaided institutions was several times higher than the expenditure in government institutions. Thus, private educational institutions are not accessible to the children of the lower income and marginalised groups. This contributes to inequality *in opportunity* when they enter the job market as adults. As a result, they are excluded from assessing in the gains of the growth process. Moreover, it marginalises the role of education as a public good.

III Higher Education

In India, there has been a significant expansion of higher education over the past 60 years: the number of universities and deemed universities increased from 30 to 845, and colleges from 750 to about 40,000.

Total enrolment in higher education has been estimated to be 33 million. The GER has shown significant improvement, i.e., from 19 per cent in 2010-11 to 26.3 per cent most recently. Yet, it is lower compared to some of the BRICS countries other than South Africa (Table 1) and Western Countries (US: 89, Canada: 88). The target is to raise GER to 30 per cent by now and keep the upward march.

Figure 2: Gross Enrolment Ratio of Higher Education in India (18-23 yrs.)



Source: Government of India, MHRD (2019b)

At the All India level, the gender gap has narrowed down over time (Figure 2). In 2018-19, while there was no gender gap in the gross enrolment rate at the national level, it was worse in Andhra Pradesh, Bihar, Gujarat, Maharashtra, Odisha and Tripura (Table 3). It is worth noting that in the Southern States of Goa, Kerala and Pondicherry and North Western States of Punjab, Haryana and Himachal Pradesh, higher education seems to be more advantageous for females as the gross enrolment ratio in higher education for them was far higher. Southern States had also better pupil-teacher ratio (Table 4).

Privatization

There has been a rapid increase in privatisation of higher education in India. State universities are passing through a period of stunted growth and uncertain future. The void created by them is being filled by the private deemed to be universities, and more recently, by private universities. Initially, the Ministry of Human Resource Development (MHRD), on the recommendations by the UGC, has accorded deemed to be university status to leading institutions like the Tata Institute of Fundamental Research, Mumbai, Gokhale Institute of Politics and Economics, Pune and a few others.

In the year 2000, with the UGC liberalising the guidelines for granting deemed university status, many private institutions got deemed to be university status. As the MHRD stopped granting permission to any new institutions since 2009, private universities were launched under the State Private University Act. As per the Central and State Acts, private universities and deemed to be universities should not be profit-making institutions. They must be registered as societies or trusts under relevant Acts.

Among the Regular and Deemed universities, about 45 per cent of the universities (384) are privately managed. Further, 78 per cent of colleges are privately managed, while 64 per cent are private unaided colleges. Thus, private players account for more than 60 per cent of the total institutions and of total enrolment.

Rajasthan followed by Gujarat, Madhya Pradesh and Uttar Pradesh have the largest number of private universities that outnumber the public universities (Table 2). It is a puzzle that the number of private and public universities is the largest in economically weaker states of Rajasthan, Uttar Pradesh, and Madhya Pradesh (Table 2). Yet their GER and pupil-teacher ratios are worse. It is worth examining how privatisation is impacting higher education in these states.

Table 2: Number of Universities by Type in Major States, and Union Territories of Goa and Pondicherry (2018-19)

Sl. No	State/UTs	Central University	Deemed University-			State University		Total
			Government	Government Aided	Private	Public	Private	
1	Andhra Pradesh	1	1		4	22	3	31
2	Assam	2				10	6	18
3	Bihar	4	1			17	4	26
4	Chhattisgarh	1				13	9	23
5	Goa					1		1
6	Gujarat	1	1	1	1	28	34	66
7	Haryana	1	3		3	16	22	45
8	Himachal Pradesh	1				4	17	22
9	Jammu and Kashmir	2				9		11
10	Jharkhand	1			1	10	9	21
11	Karnataka	1	4		11	28	16	60
12	Kerala	1	2		1	13		17
13	Madhya Pradesh	2	1			22	31	56
14	Maharashtra	1	7	2	12	22	11	55
15	Odisha	1			2	15	4	22
16	Puducherry	1			1			2
17	Punjab	1	1		1	9	15	27
18	Rajasthan	1			8	23	45	77
19	Tamil Nadu	2		2	26	21		51
20	Telangana	3			2	15		20
21	Uttar Pradesh	4	2	3	4	27	28	68
22	Uttarakhand	1	1	1	1	10	17	31
23	West Bengal	1			1	25	10	37
	India	46	34	10	80	371	304	845

Note: These figures do not include one Central Open University, 127 Institute of National Importance, five Institutes under State University Act, 14 State Open Universities, and one State Private Open University.

Source: Government of India, Ministry of Human Resource Development, (2019b)

Quality of Higher Education

The quality of higher education leaves much to be desired. For instance, a National Association of Software and Service Companies (NASSCOM) Survey (2011) reported that only 25 per cent of the graduates working in the IT sector have the required skills. Moreover, there is a significant imbalance between supply and demand in the higher education sector. Of the total intake capacity of 1.6 million seats in 3,365 engineering colleges in India, half have remained vacant in 2016. Many IT companies were

compelled to recruit diploma holders and general stream graduates and give them rigorous training, incurring thereby huge costs. There is also an associated problem of lack of quality teachers as the market has been driving out some of the best talents from academic pursuits to IT industry and other greener pastures abroad. This has accentuated the problem for the next generation.

The quality of education imparted, and research produced in Indian universities are far below the standards in developed countries and in some developing countries like China as well. None of the Indian universities including Indian Institute of Science and IITs, figured among the top 100 universities list of the Times Higher Education World University Rankings 2018; two universities of China could find a place among the top 25 universities. It is reported that in 2010, India's share in the world's scientific output was 3.5 per cent while that of China was 11.7 per cent⁴.

India is often referred to as the big place next to USA, for computer sciences. But the figures on research are abysmally low. Only 2.4 per cent of global research in computer sciences in 2010 was from India while the share was higher in three emerging economies - China (15%), South Korea (6.3%) and Taiwan (5.7%).

A few private institutions are undertaking significant educational innovations and experiments. However, this does not mean that all private institutions are necessarily good. Several are highly commercial and exploitative, even though they are labelled as "not for profit" institutions⁵. Moreover, the private sector in higher education has not promoted research.

Internationalisation of courses is taking place in private universities. There has been considerable expansion of high level professional and technical courses to meet the needs of industry for engineering and other graduates. Primarily students belonging to advanced socio-economic groups are found in these courses. The issue of equal access to all social groups remains unaddressed.

The Indian Government at various points expressed the intention of spending 6 per cent of the GNP (Centre + States) on the education sector. However, the Centre and state's share on spending has gone up to about 2.8 to 3.0 per cent of GDP during the years 2016-17 to 2018-19 [Govt. of India's Economic Survey 2018-19 (Volume 2), p.257]. Public spending on R&D in India was 0.82 per cent of the GDP while that of China was 2.02 per cent.

IV Emerging Challenges in Higher Education

The demand for higher education is likely to increase considerably due to the rise in the population in the age group of 17-23 years. Moreover, the perception among the economically weaker communities that higher education is the pathway to upward mobility, may also contribute to the growing demand. Overall, demand would not be a constraint for the expansion of higher education.

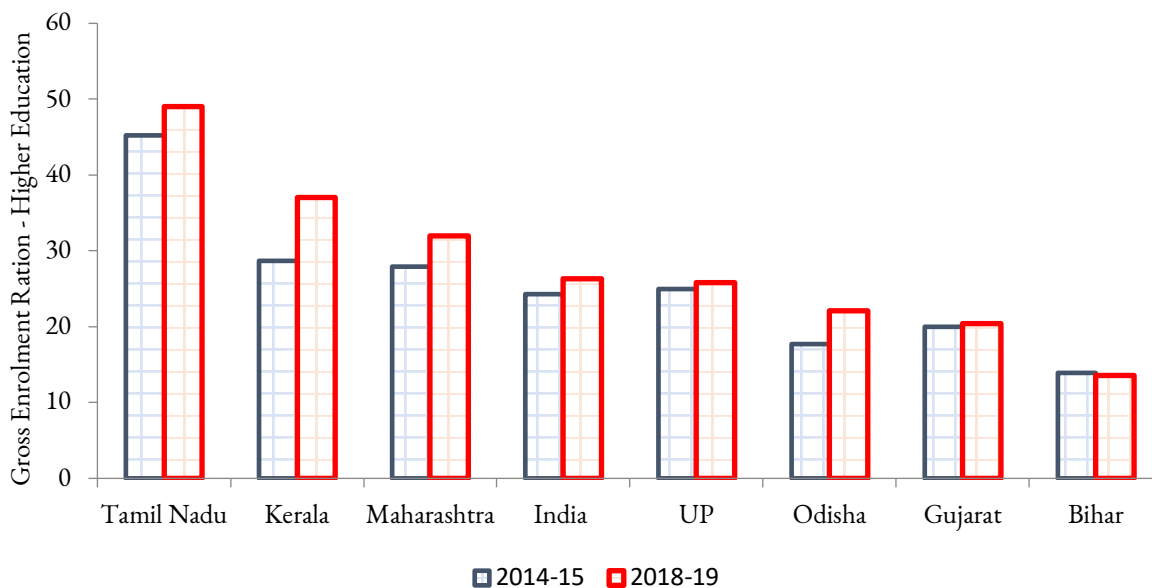
However, the supply side constraints are severe, though higher education policy aims to improve the enrolment rate and eliminate social and gender gaps. The supply constraints are associated with poor college densities and shortage of qualified faculty. Colleges and universities, particularly in state managed institutions, are ill-equipped with infrastructure facilities. There has also been a spurt in the number of colleges and universities without proper planning. Moreover, the governance of State Universities leaves much to be desired. This sad is reflected in the very low ranking of Indian universities in world university rankings.

The equity issue is also a challenge. This is reflected in the inequalities between income and social groups, rural and urban areas and across states. In 2014, the GER of the top decile was about seven times of that of the bottom decile (Thorat & Khan, 2017). In 2017-18, GER was 25.8 for all social groups whereas it was lower at 21.8 for SCs and 15.9 for STs. What is more glaring are the inter-state variations in

GER. In 2018-19, the GER was lower in economically weaker states at 13.6 in Bihar, 19.1 in Jharkhand and 18.6 in Chhattisgarh as compared to those in better performing states with 49.0 in Tamil Nadu, 46.4 in Puducherry and 39.6 in Himachal Pradesh (Table 3 and Figure 3).

There is significant variation in the pupil-teacher ratio in universities and colleges in regular mode; in 2018-19, it was higher in Bihar (66), Jharkhand (73) and Uttar Pradesh (55) as compared to Puducherry (15), Kerala (16), Andhra Pradesh (18),Telangana(18) and Tamil Nadu(18). (Table 4). Even in states with a lower pupil-teacher ratio, it was higher than the desirable norm of 10. It remains a challenge to reduce the pupil-teacher ratio from the high figure of 29 and to reduce the inter-state variations.

Figure 3: Gross Enrolment Ratio in Higher Education in Major States and All India



Source: Government of India, MHRD (2019b)

Table 3: Gross Enrolment Ratio in Higher Education (18-23 yrs.) in India (2018-19)

Sl. No	State	Male	Female	Both
1	Andaman and Nicobar Islands	20.3	26.1	23.2
2	Andhra Pradesh	35.8	29.0	32.4
3	Arunachal Pradesh	29.9	29.5	29.7
4	Assam	19.1	18.3	18.7
5	Bihar	15.1	12.0	13.6
6	Chandigarh	41.6	63.9	50.6
7	Chhattisgarh	18.1	19.2	18.6
8	Dadra and Nagar Haveli	7.4	12.6	9.3
9	Daman and Diu	4.2	9.8	5.5
10	Delhi	43.2	50.0	46.3
11	Goa	26.4	35.0	30.1
12	Gujarat	22.0	18.7	20.4
13	Haryana	26.5	32.4	29.2
14	Himachal Pradesh	34.7	44.9	39.6
15	Jammu and Kashmir	29.6	32.2	30.9
16	Jharkhand	19.5	18.7	19.1
17	Karnataka	28.2	29.4	28.8
18	Kerala	30.8	43.2	37.0
19	Lakshadweep	3.4	11.6	7.4
20	Madhya Pradesh	21.8	21.2	21.5
21	Maharashtra	33.5	30.3	32.0
22	Manipur	33.6	33.8	33.7
23	Meghalaya	23.8	27.7	25.8
24	Mizoram	26.5	24.8	25.7
25	Nagaland	17.8	19.7	18.7
26	Odisha	24.2	20.0	22.1
27	Puducherry	41.7	51.6	46.4
28	Punjab	25.5	34.3	29.5
29	Rajasthan	23.1	23.0	23.0
30	Sikkim	54.0	53.9	53.9
31	Tamil Nadu	49.8	48.3	49.0
32	Telangana	35.8	36.5	36.2
33	Tripura	21.1	17.4	19.2
34	Uttar Pradesh	24.2	27.5	25.8
35	Uttarakhand	39.2	39.1	39.1
36	West Bengal	20.0	18.7	19.3
	All India	26.3	26.4	26.3

Source: Government of India, Ministry of Human Resource Development, (2019b)

Table 4: Pupil -Teacher Ratio in Universities and Colleges under Regular Mode (2018-19)

Sl. No	State	Pupil-Teacher Ratio
1	Andaman and Nicobar Islands	17
2	Andhra Pradesh	18
3	Arunachal Pradesh	45
4	Assam	31
5	Bihar	66
6	Chandigarh	38
7	Chhattisgarh	27
8	Dadra and Nagar Haveli	29
9	Daman and Diu	14
10	Delhi	29
11	Goa	17
12	Gujarat	32
13	Haryana	30
14	Himachal Pradesh	36
15	Jammu and Kashmir	35
16	Jharkhand	73
17	Karnataka	17
18	Kerala	16
20	Madhya Pradesh	37
21	Maharashtra	28
22	Manipur	25
23	Meghalaya	37
24	Mizoram	18
25	Nagaland	22
26	Odisha	32
27	Puducherry	15
28	Punjab	24
29	Rajasthan	36
30	Sikkim	44
31	Tamil Nadu	18
32	Telangana	18
33	Tripura	36
34	Uttar Pradesh	55
35	Uttarakhand	40
36	West Bengal	38
	All India	29

Source: Government of India, Ministry of Human Resource Development, (2019b)

V Coping with Covid-19 and Other Shocks

The outbreak of novel corona virus disease (Covid-19), and its rapid transmission worldwide, has caused serious implications for educational institutions due to lockdown. Educational institutions remain closed to avoid the risk of contracting the virus. The situation is more complex for students who are in the process of completing their final year examination. Many Universities propose to cancel the final examinations and instead, give final results based on class performances or other ad hoc criteria. This will cause disruptions in the lives of students and their academic careers. Besides, the lockdown system would not only impact the learning process of the students but also lead to a cut in household expenditure on education owing to sharp reduction in incomes following sharp reductions in business activities amongst the self-employed and loss of employment amongst the regular full-time workers and more so amongst the contract and part-time labourers. Students of primary and secondary schools are not only missing opportunities for learning, but also have lost access to free meals under mid-day meal programme during this time (though some states have made some alternate arrangements delivering at home).

Some initiatives are being taken to minimise the disruption in school education. Online learning techniques are being adopted to complete the curricula; these methods are proving incredibly popular. However, only a handful of elite schools, particularly in the private sector, have been able to adopt online teaching methods. Most of their counterpart private and government schools, on the other hand, are completely shut-down for not having access to e-learning infrastructure. If this situation continues to persist, it may lead to educational inequality.

It is a challenge to track the impact of Covid-19 shock on education. Young Lives, an international longitudinal study of child development in a panel sample of 12,000 children in Ethiopia, India, Peru and Vietnam over 15 years, is conducting a phone survey to provide rapid new research and insights into Covid-19 impacts in these countries. The International Institute for Applied Systems Analysis (IIASA), an independent research institute, has national member organizations in Africa, America, Asia and Europe. It has 22 member countries representing 71% of the world's economy and 63% of the world's population. COVID-19. These studies will have policy insights for minimising risks from Covid-19, if it or any such pandemic occurs again in the future.

A positive contribution of Covid-19 is that it has led educational institutions across the world to adopt online teaching courses, entrance tests, online examinations, and assignments through email. It should form a component of school curriculum in India as well. Technology penetration in school education can be utilised as an instrument for the reduction of school dropouts and enhancement of quality education. It is a good opportunity to strengthen the internet connectivity across rural India and increase wider access to education. Institutes like, Indian Institute of Science, Tata Institute of Fundamental Research, IITs, IIMs and Indira Gandhi Open University, have infrastructures to connect students through internet. For a vast country like India, the existing infrastructure is not adequate. As per 2017-18 National Sample Survey, only 14.9% of rural households and 42 per cent of urban households have access to internet. To adapt to this system, adequate awareness is needed among the users. Capacity building among students is needed. It is essential to note that the transformation of education due to online teaching should not lead to educational inequality. India should develop an adequate and efficient infrastructure for online education like some of the advanced countries. Government support is needed for eliminating existing digital divide.

VI Concluding Observations

How do we achieve equality without sacrificing quality? How do we develop and regulate the private sector without curbing its creativity? These are some of the key challenges in reforming the higher education system.

The primary condition for high quality education is an environment conducive to academic pursuits. It can be ensured only by improving governance. Universities should enjoy a greater degree of autonomy. There is a need to minimise regulation. It is unfortunate that due to corruption, favouritism, and inefficiency, as also due to political objectives, relatively less competent are at the helm of the universities and research institutions.

Universities should be led by Vice-Chancellors with vision. Proper selection of teachers, the promotion of peer culture and a fair system of incentives and deterrents are equally important. Those selected on merit are more likely to contribute to the growth of the institutions in comparison to those who might enter from the back door.

It is high time that the country takes a critical look at the recruitment and promotion practices of top-ranking universities and tries to create premier institutions with identical practices. The UGC Regulation 2018, which gives more weightage to research performance and quality publications for faculty recruitment, if implemented in true spirit, will go a long way in improving standards of teaching and education. Generous research funding should be made available to research proposals certified by two eminent persons with at least one from a reputed foreign university which ranks high on the Times Ranking. This acts as a catalyst to provide a fillip to patents and India's share in world research output.

The contribution of the private sector to R&D in India is negligible⁶. What is worse, with the decline in the quality of faculty in many of the state universities, research has received a major setback and research-led-teaching leaves much to be desired. However, there has been an increase in the number of doctorate degrees awarded by the State universities. These degrees are of unknown quality. Regulations mandate course work and publication during the pursuit of Ph.D. Much depends on implementation.

The foundation for quality higher education lies in quality school education. The enactment of the Right to Education Act, 2009 is a progressive measure to improve school education. Its efficacy also depends on the political will of the Chief Ministers and motivations of the bureaucrats. When these are in deficit, active civil society can emerge as a pressure group. To achieve the goal of 'Education for All', decentralisation and convergence of school education has been emphasised with greater participation of Panchayat Raj Institutions and community. Undoubtedly, this is a pathway for achieving quality education for all. However, the implementation falls short. The active role played by Parent-Teacher Associations (PTAs) in the governance of primary and secondary schools in Kerala is worth emulating.

Randomised experiments show that students in small-size classes perform better than those in regular class sizes; and further, those in regular classes with aides perform better than students in regular classes (Krueger & Lindahl, 1999). Their impact tends to be larger for students belonging to disadvantaged social backgrounds. Reducing the class size in the early school years appears to have long-run effects, especially in terms of reducing inequalities in performance and access to higher education (Carneiro & Heckman, 2003).

Randomised experiments conducted in the Government schools of Mumbai and Vadodara using remedial education programmes to a group of lagging children were effective. Remedial programmes utilised the services of young women belonging to the same community, and initially these women

received training for two weeks. The remedial classes had a significant impact on the performance of the lagging children (Banerjee, et.al. 2003). Some of these experiments can be replicated at scale.

Finally, one possible way to improve the standards of higher education in a state is to start one university of excellence under state legislation. Such university equipped with good infrastructure (library, labs, equipment and playing field) would offer undergraduate and post-graduate programmes in selected subject(s), recruits highly qualified faculty with good research capabilities. Jadavpur University, which ranked high among Indian universities on *Times* Higher Education World University Rankings 2018, stands testimony to this idea.

References

- ASER. (2019). *Annual Status of Education Report (Rural), 2018*. New Delhi: ASER Centre .
- Banerjee, A., Cole, S., Duflo, E., & Linden, L. (2003). *Remedying Education: Evidence from Two Randomized Experiments in India*. Massachusetts Institute of Technology: Cambridge, MA.
- Birdsall, N. M., Campos, J. E., Kim, C.-S., Corden, W. M., & MacDonald, L. (1993). *The East Asian Miracle: Economic Growth and Public Policy: Main Report*. New York: Oxford University Press.
- Carneiro, P. M., & Heckman, J. J. (2003). *Human Capital Policy*. Bonn, Germany: IZA Institute for the Study of Labour.
- Cornia, G. A. (2014). *The Role of Selected Policy Instruments in Reducing Income Inequality*. Background paper for WESS.
- Government of India. (2019a). *Draft Education Policy*. New Delhi: Ministry of Human Resource Development.
- Government of India. (2019b). *All India Survey of Higher Education 2018-19*. New Delhi: Ministry of Human Resource Development.
- Government of India. (2016a). *All India Survey of Higher Education 2015-16*. New Delhi: Ministry of Human Resource Development.
- Government of India. (2016b). *Educational Statistics at a Glance*. New Delhi: Ministry of Human Resource Development.
- Kremer, M., Muralidharan, K., Chaudhury, N., Hammer, J., & Rogers, F. H. (2005). Teacher Absence in India: A Snapshot. *Journal of the European Economic Association*, 3 (2-3), 658-667.
- Krueger, A. B., & Lindahl, M. (1999). *Education for Growth in Sweden and the World*. Cambridge, MA: National Bureau of Economic Research.
- OECD. (2012). *Reducing Income Inequality while Boosting Economic Growth: Can it be done?* Paris: OECD.
- Rao, G., & Sedwal, M. (2017). Introduction: Basic Education for All in India—Tracking Progress. In G. Rao, *India Education Report* (pp. 1-19). New Delhi: Oxford University Press.

Singh, M. (2017). Education and Development. *IASSI Quarterly*, 36 (2&3), 145-151.

The World Bank. (2020). *World Development Indicators*. Washington D.C.: The World Bank.

Thorat, S., & Khan, K. (2017). Private Sector and Equity in Higher Education: Challenges of Growing Unequal Access. In N. V. Varghese, N. S. Sabharwal, & C. M. Malish, *India Higher Education Report 2016*. New Delhi: Sage Publisher.

UNDP. (2019). *Human Development Report 2019*. New York: UNDP.

Vepa, S., & Raghupati, P. (2018). *Learning Outcomes of Ninth Grade Students across School types in Andhra Pradesh*. Hyderabad: Centre for Economic and Social Studies.

Notes

¹For a lucid presentation of the developments during the 1990s and 2000s, see Rao and Sedwal(2017).

²The expenditure on implementing the RTE Act 2009 was in the beginning shared in the ratio of 75:25 between the Central and State Governments and gradually changed to 50:50.

³Though gender gap has narrowed down in quantitative terms, it may still exist in terms of quality.

⁴In a weekly column in *The Hindu*, January 20, 2019, Anklesaria SwaminathanAiyer mentions that China has decent colleges in almost all provinces; and in 2008, it launched a Thousand Talent Scheme to attract top-quality overseas Chinese academics by providing with World Class facilities and salaries.

⁵The former Prime Minister, Dr. Manmohan Singh, in his inaugural address delivered on the occasion of 17th Annual Conference of Indian Association of Social Science Institutions (IASSI) in 2017 observed, “The new private providers which have come up are mostly ‘for profit’ institutions (and are not like previous non-profit, charitable private institutions). The profit motive may affect quality because of cost cutting imperatives. At the same time, it must, be admitted that some of the private providers have maintained high quality, but this is not the case with most of them”.

⁶Globally, the private sector supports around 40-45 per cent of scientific research, while in India the entire burden is to be borne by the government.