Educational Development Index of Bihar

Towards a Better Tomorrow

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Abstract

The study was designed to compute district-wise educational development index of Bihar. At the same time, an attempt was made to assess the trend of improvement in elementary education for the last few years. U-DISE data for the last two years (2014–15 and 2015–16) was analysed and compared with the baseline data. Bihar showed significant improvement on many parameters of elementary education. Despite the fact that Bihar is yet to achieve the desirable level but the progress is evident. Other than learning achievement, in terms of quality Bihar has shown her firm determination to change the gloomy picture of elementary education. The findings reflect a positive trend of upward movement. Right from access to teachers in school, Bihar has made progress in the light of RTE Act, 2009.

Introduction

The study conducted by Bihar Education Project Council, Patna (2015–16) on U-DISE (unified district information of school education) and later on, compiled by National University of Education and Planning, New Delhi (2016) for generating composite scenario of elementary education in India gives rise to two distinct patterns of data of school education — within the state and between states. BEPC (2015–16) presents scenario of elementary education of 38 districts of Bihar. These two analyses generate time series data for understanding the effectiveness of Sarva Shiksha

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Abhiyan (SSA) within the state and between the states. Bihar when compared with other states, trails on many educational parameters. But the reality is something else. Within the state of Bihar some districts have indeed, performed well and have consistently maintained their rank while some of them have improved gradually. Hence, it is too early to conclude that Bihar accounts for poor performance on the elementary education front. For the last one decade the Government of Bihar (GoB) has initiated a plethora of interventions to improve the status of elementary education. It has made some significant effects on school education. This paper examines the extent of effect of various educational programmes on elementary education in Bihar in terms of Educational Development Index (EDI) designed by NUEPA. Based on the U-DISE data an effort was made to compute an Educational Development Index (EDI) separately for each parameter – access, infrastructure, teachers and outcomes and also a composite index for the state. The basic purpose of EDI was to get a relative position of a district vis-à-vis other districts of Bihar on each parameter. EDI can be applied to bring about variation in interventions and make categorical treatment of the performing districts. It is desirable to analyse district-wise educational development with reference to access, infrastructure, teachers and outcome.

Objectives of the Study

The objectives of the study are to

(i) assess universal access, enrolment and retention in Bihar,

(ii) map out availability of infrastructure and teachers and

(iii) compute Educational Development Index (EDI) of each district.

Methodology

Design of the Study

The study examined U-DISE data (2014–15 and 2015–16) available at www.udise.in and www.bepcssa.in for educational development index (EDI). For baseline the data of 2005–06 was taken into consideration. The basic aim was to ascertain the trend of progression in elementary education after interventions. The core parameters — access, infrastructure, teachers and outcomes designed by National Institute of Educational Planning and Administration (NIEPA) were included in the study. On each parameter there existed a set of sub-parameters (22 variables). For each sub-parameter the baseline data was decided. Some other sources of data, such as All India Educational Survey (AIES 2002, 2009) and Annual Work Plan and Budget (AWP & B 2015–16, 2016–17) of SSA in Bihar were taken into consideration. It was a time series data based on U-DISE data capture format (DCF).

Tool Used

The study followed the tool suggested by NUEPA for computing Educational Development Index (EDI) for two separate years (2014–15 and 2015–16). Variables (n=22) used by NIEPA for analysis were taken into consideration while computing EDI. Composite weightage score on each parameter for each district was computed.

Result

(a) Access: Bihar witnessed a significant expansion of schools for the last few years. About 98 per cent habitations had elementary schools. The analysis suggested that upper primary schools were more equitably distributed among 38 districts. The SSA had substantially strengthened primary as well as upper primary schools (Figure 1). The total enrolment at upper primary level was consistently increasing for the past several years. An overall increase at primary level was 5.4 per cent (about 8.3 lakh) from the previous year (2014–15). The enrolment at upper primary classes had increased significantly (7 per cent) in the state during the same period. While enrolment for primary classes increased by 43.94 per cent from 2005–06 to 2015–16, it climbed up to 235.65 per cent for upper primary classes. Out of 234.32 lakh, 214.73 (91.64 per cent) lakh students were in the government managed schools and the remaining 19.59 lakh (8.36 per cent) in private managed schools. There existed 4.60 upper primary schools or sections to serve per one thousand population of age group 11–13+. Despite a significant achievement on access parameter, a number of habitations remained deprived of primary schooling facilities within one kilometer and upper primary schools within a distance of three kilometers. Nevertheless, access to elementary education in tune with the increased Gross Enrolment Ratio (GER) required many more school buildings both for primary and upper primary levels. It was evident that the Department of Education (the GoB) was the main provider of

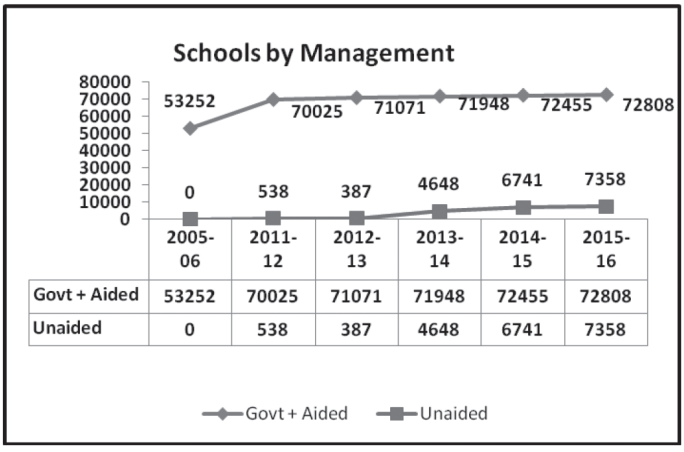

Figure 1. School by management (in %)

elementary education followed by the government-aided schools (Figure 1).

(b) Infrastructure: The basic infrastructure facilities, such as classrooms, toilets, drinking water, etc., help improve attendance, retention and facilitate learning processes. The RTE Act, 2009, lays down the minimum physical and academic infrastructure for a school. Strangely, most of the government schools did not fulfill the norms as prescribed by the RTE Act. Of 70,860 government schools, only 9,505 (13 per cent) complied with RTE norms for teachers. Around 34,337 (82 per cent) primary schools did not comply with RTE norms for PTR while it was 27,018 (about 93 per cent) in case of upper primary/secondary/higher secondary schools. Similarly, only 16,973 (24 per cent) schools complied with RTE norms for classrooms. In case of upper primary/secondary/higher secondary schools it was about 86 per cent. A large number of primary schools (opened after 2006–07) did not have their own school buildings and other teaching learning facilities. It was important to highlight that Bihar was facing acute shortage of the government as well as the donated land for construction of new school buildings (NSBs). However, the state was making sincere efforts to make land available for NSBs. The situational analysis further revealed that student classroom ratio (92:1) was dense in 2005–06. However, it got reduced to 57:1 in 2015–16. A large number of schools (2.76 lakh) got additional classrooms till 2015–16. In case of middle schools the existing infrastructure was certainly better. But, some essential facilities lacked in many of these schools. It was important to mention that as per U-DISE data 2014–15, there existed a huge requirement of additional classrooms (approximately, 2.14 lakh) in the state. The pace of completion of the sanctioned additional classrooms (ACR) as well school buildings was relatively slow. Though the state had been able to provide basic amenities like toilet separately for boys and girls and drinking water facilities for many elementary schools, a real challenge revolved around maintaining toilets and making it usable for the children. Opening new schools would merely not serve the purpose. The infrastructure of elementary education in Bihar painted a disappointing picture. Facilities available in schools revealed that Bihar was below the national average. About 10 per cent primary schools had no drinking water facility. Separate girls' toilet facilities were still inadequate. Only 46.62 per cent schools had a boundary wall.

About 37.51 per cent schools did not have a kitchen shed. About 64.70 per cent schools had no playground. Two-third schools had no electricity connection.

(c) Teacher: Bihar had a large number of teaching forces making the schooling system more vibrant. At the state level, only 12 per cent primary schools (all management) existed which had more than five teachers (U-DISE 2015–16). However, only 9 per cent (the government management) primary schools had more than five teachers. About 28 per cent primary schools had four-five teachers. Around 54 per cent primary schools had two-three teachers. On an average the number of teachers in all categories of schools was 5.39 in 2015–16 which was only 3.86 in 2005–06. The situational analysis further indicated that pupil teacher ratio (PTR) was 64.82 in 2005–06. This got reduced to 56.20 in 2015–16. There existed some schools which did not have adequate number of teachers (Figure 2). In 2005–06 about 26 per cent female teachers were deployed in the schools. It rose up to 40 per cent in 2015–16. Still it was far away from satisfactory inclusion of female teachers in the schooling system. Female teachers were the best option for primary level education. Many schools run without a Head Master (HM) and the graduate trained teachers. Upper Primary teachers faced difficulties in teaching science and mathematics as they did not have science teachers.

Almost all DIETs, PTECs and B.Ed. colleges in Bihar were gasping by the end of 2005–06. They were dysfunctional because of poor infrastructure facilities, stagnated human resources and predominating restraining forces in the institutions. Right now, the State Council of Educational Research and Training (SCERT) in Bihar has made almost all DIETS functional as the untrained teachers were being trained under Open Distance Learning (ODL) Programme. Though

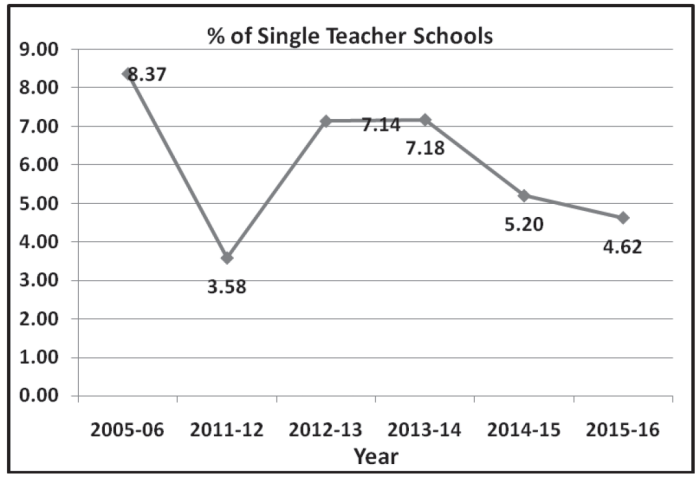

Figure 2. Single teacher schools (in %)

facilities available for pre-service and in-service training of teachers were inadequate in the state, they had delivered tangible results. The SCERT by its innovative practices played an important role in capacity building programme of newly appointed teachers (BEPC 2015–16). It showed an affirmative action aimed at revamping the existing training institutions and setting-up of new institutions. Block Resource Centre (BRCs), Cluster Resource Centre (CRCs) and School Management Committee (SMC) were constituted in all districts. Though these bodies provided a little academic support to teachers as well as schools, they could not be cornered in school education.

(d) Enrolment and Out of School Children (OOSC): The Gross Enrolment Ratio (GER) at the primary level was consistent over the years (108 per cent, 2016). The same trend for Net Enrolment Ratio (NER) was observed (104 per cent, 2016). No major gender gap was recorded in the GER and NER (<5 per cent). Further the district-wise analysis revealed that the GER of girls was higher than their counterpart in many districts. The data disclosed a substantial increase in GER at upper primary level over the years. The NER at the primary level continued increasing over the years since 2005–06. There was an increase of one per cent point during 2015–16 as compared to the previous year (2014–15). The NER at the primary level required further improvement. The NER of girls was better than that of boys over the years. The Gross Enrolment Ratio at upper primary level had increased by 16 per cent from the previous year. The GER and NER had a difference of about 4 percentage point indicating an inclusion of about 4 per cent underage and overage children at upper primary level. A large number of children left the school before completing the elementary education cycle. It seemed that the existing primary education system transited every fourth or fifth child to upper primary cycle.

It was heartening to note that the transition rate of girl children was better than that of boys. If a child continued up to Class III, the probability of completing the primary cycle was high.

The dropout rate at upper primary level was not very high. The out of school children (OOSC) of SC category was 18.45 per cent in 2006–07 where as, it was 1.77 per cent in 2015–16. The trend of ST and minority children was also encouraging. But more efforts were required to bring them to a minimum level. Although the number of out-of-school children came down to about one per cent, it required a contextual strategy to bring them back to school (Figure 3). Continuous awareness campaign has already been initiated to narrow the gender and social gaps at elementary level. In the light of RTE Act, every

elementary school was supposed to prepare School Development Plans (SDP). Although this bottom-up approach to planning was a kind of democratic engagement, there existed non-readiness to school development plan by the stakeholders.

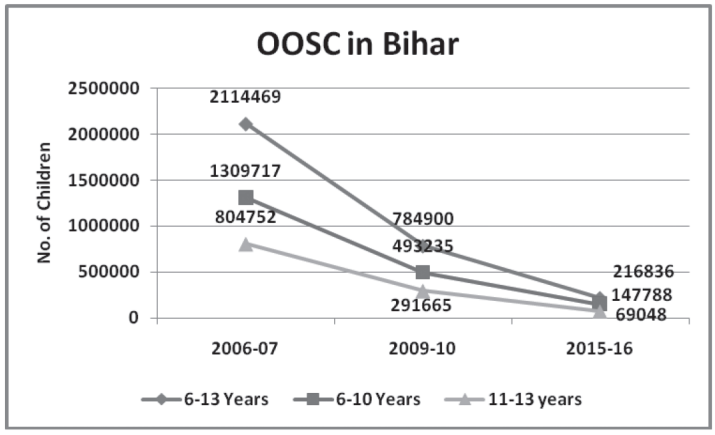

Figure 3. Status of OOSC in Bihar by age

(e) Learning Outcomes: Despite improvement in access and retention, the learning outcomes of children continued to be a serious concern. Studies (NAS 2012) confirmed that the children were far away from basic learning skills during their schooling. Many children reaching up to Class V could not read a simple sentence and failed to work out numerical problems (NAS 2012, SCERT 2017). Students especially girls studying in Class III, V and VIII secured less than 50 per cent marks in Hindi language (NAS 2012). The state mean percentage of KGBV students was around 40 with Standard Deviation 20.57. Of 10 districts where the study was conducted, Nalanda and Jamui secured 54 per cent and 55 per cent, respectively, while Kishanganj and West Champaran underscored by obtaining only 25 per cent and 29 per cent (SCERT 2017). Bhagalpur had 36 per cent, showing 4 per cent below the state mean per cent. Madhepura and Madhubani secured 37 per cent and 38 per cent which was about 23 per cent less than the state mean per cent. The results further, revealed substantial differences in learning outcomes between the highest performing districts (Nalanda followed by Jamui) and the lowest performing districts (Kishanganj followed by West Champaran). A large scale assessment exercise could not ensure quality improvement in learning unless the system was ready to reflect on the findings and use them for improving the quality of teaching and learning processes.

(f) Composite EDI: Analysis of composite elementary education index (EDI) made it apparent that Siwan, Nalanda, Patna, Begusarai and Muzaffarpur were top five districts in the year 2014–15 while Kishanganj, Arwal, Nawada, Purnea and Araria were at the

bottom of ranking (Table 1). In year 2015–16 Siwan and Nalanda rejoined in top five but three new districts — Aurangabad, Vaishali and Jamui were included in top five districts from 11th, 7th and 9th rank, respectively. It was due to providing access to new primary schools in the uncovered habitation, appointment of teachers and construction of new buildings or classrooms. The state average of composite EDI for the year 2014–15 and 2015–16 was almost same (0.516 and 0.502, respectively). Keeping the base figure of composite EDI to year 2014–15 (0.516), the number of districts above the state average (0.516) were 13, and below it were 25. In year 2015–16 a total number of districts above the state average (0.502) were 15, and below it were 23. Several districts had improved their relative position on various parameters of Composite EDI.

Table 1
Indices and Ranking at Elementary Level: All Districts (2015–16)

S. No.	District	Access		Infrastructure		Teacher		Outcome		All	
		Index	*Rank*	*Index*	*Rank*	*Index*	*Rank*	*Index*	*Rank*	*Index*	*Rank*
1.	Siwan	0.606	8	0.777	1	0.682	1	0.707	3	0.697	1
2.	Aurangabad	0.588	9	0.717	6	0.595	3	0.620	13	0.633	2
3.	Vaishali	0.583	10	0.718	4	0.590	4	0.522	23	0.613	3
4.	Nalanda	0.544	14	0.717	5	0.621	2	0.460	26	0.602	4
5.	Jamui	0.481	19	0.698	7	0.560	7	0.622	12	0.594	5
6.	Gopalganj	0.499	18	0.519	20	0.561	6	0.793	1	0.577	6
7.	Darbhanga	0.537	16	0.752	2	0.404	23	0.608	17	0.574	7
8.	Bhojpur	0.564	12	0.687	8	0.433	20	0.625	11	0.573	8
9.	Begusarai	0.453	23	0.633	12	0.577	5	0.614	15	0.571	9
10.	Patna	0.549	13	0.664	10	0.405	22	0.611	16	0.552	10
11.	Buxar	0.411	26	0.728	3	0.466	16	0.525	21	0.541	11
12.	Munger	0.610	5	0.631	13	0.297	32	0.651	6	0.533	12
13.	Jehanabad	0.474	21	0.645	11	0.379	27	0.616	14	0.523	13
14.	Sheohar	0.666	2	0.329	35	0.387	26	0.762	2	0.504	14
15.	Muzaffarpur	0.579	11	0.581	15	0.451	19	0.361	36	0.503	15
16.	Khagaria	0.399	27	0.584	14	0.470	15	0.525	22	0.497	16
17.	Kaimur	0.364	32	0.576	17	0.504	11	0.436	29	0.480	17
18.	Rohtas	0.364	32	0.576	17	0.504	11	0.436	29	0.480	17
19.	Madhubani	0.318	37	0.672	9	0.455	18	0.360	37	0.469	19
20.	Saran	0.504	17	0.414	29	0.387	24	0.641	8	0.469	20
21.	Sitamarhi	0.469	22	0.475	24	0.333	30	0.666	5	0.467	21
22.	Katihar	0.345	34	0.474	25	0.482	14	0.577	18	0.465	22

23.	Lakhisarai	0.396	29	0.530	19	0.419	21	0.503	24	0.461	23
24.	Arwal	0.632	4	0.506	21	0.309	31	0.391	34	0.457	24
25.	Sheikhpura	0.634	3	0.418	28	0.238	33	0.640	9	0.457	25
26.	E. Champaran	0.389	30	0.287	37	0.532	9	0.668	4	0.452	26
27.	Saharsa	0.426	24	0.379	30	0.523	10	0.451	27	0.445	27
28.	Nawada	0.384	31	0.466	26	0.387	25	0.572	19	0.443	28
29.	Bhagalpur	0.475	20	0.376	31	0.557	8	0.326	38	0.442	29
30.	Banka	0.610	6	0.481	22	0.197	35	0.469	25	0.427	30
31.	Gaya	0.608	7	0.346	34	0.231	34	0.632	10	0.426	31
32.	Kishanganj	0.723	1	0.581	16	0.053	38	0.371	35	0.422	32
33.	Madhepura	0.543	15	0.363	32	0.366	29	0.428	31	0.418	33
34.	Supaul	0.396	28	0.263	38	0.499	13	0.438	28	0.395	34
35.	W. Champaran	0.229	38	0.480	23	0.367	28	0.413	33	0.376	35
36.	Samastipur	0.331	36	0.301	36	0.458	17	0.416	32	0.374	36
37.	Purnia	0.413	25	0.441	27	0.087	37	0.547	20	0.351	37
38.	Araria	0.340	35	0.363	33	0.098	36	0.645	7	0.332	38
	Bihar	0.435		0.498		0.473		0.639		0.502	

Good Average Below average Poor

Discussion and Conclusion

Based on the situational analysis of elementary education in Bihar, one gets an impression that the state has gradually inched towards the goals of SSA. Right from DPEP (District Primary Education Programme) to SSA the state has stamped in some good learning experiences. Though the journey to universalisation of elementary education (UEE) was difficult and tiring, the state continued expanding her capacity for improving the relative status of elementary education. This was a result of aspiration, reflective conversion and understanding complexity. Aspiration referred to personal mastery on the programme. Reflective conversion dealt with mental models (maps of education) and dialogue with lower levels. Understanding complexity was systematic thinking (synergy in team). Taken together, it made a fifth discipline of elementary education. The state had meticulously customised her strategies to make contextually schooling system more relevant and sustainable from the view point of community-ownership programme. This became a point of reference for other states. Some good practices in the field of elementary education (EE) were definitely admirable. Despite some

positive signs of improvement in elementary education, a few grey areas still remain unaddressed for universalisation of elementary education. The Right of Children to Free and Compulsory Education Act, 2009, is a milestone in the history of EE. Strangely, six years have elapsed since its implementation; it has yet to get its effective edge in the state. Although the Government of Bihar, in view of obligations of RTE Act, 2009, has acted affirmative and has introduced some important measures to facilitate enforcement of the RTE Act, 2009, many schools have yet to comply with RTE norms.

Acknowledgements

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