Universal Secondary Education in the Telugu-Speaking States: Prospects and Challenges

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1 Introduction

Universal Education implies creating universal access and opportunity for all children to receive education. Secondary education spreads over the ages of 15 and 16 years, and senior secondary over the ages 17 and 18 years. It serves as a link between the elementary and higher education, thus playing an important role. GOI's Central Advisory Board of Education (CABE) committee on Universalisation of Secondary Education (2005) recommends universal secondary education by 2015. As per the report, the projection of enrolment, transition rate indicates full possibility of universal enrolment in secondary education by 2015. By 2020, the target should be universal enrolment, full retention and mastery of learning in all kinds of learning tasks by more than 60% learners.

The government of India has launched a national drive to universalise secondary education by 2020. The 12th five-year Plan approach contemplates "faster, sustainable and more inclusive growth", implying universal access for children to school, increased access to higher education and improved standards of education, including skill development. Rashtriya Madhyamik Shiksha Abhiyan (RMSA) is an initiative of the Government of India, in partnership with State governments, which seeks to universalise enrolment in Grades 9 and 10 across the country. The goal is to universalise entry into secondary school by the end of 2017 and achieve universal

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completion of Grade 10 by 2020. Now the question is whether Sustainable Development Goal-4 (SDG), i.e. '*ensure inclusive and equitable quality education and promote lifelong learning opportunities for all'* is achievable in India by 2030?

It is true that India has achieved considerable growth in economic development in the recent past, but it is not free from criticism. This is because the growth has not narrowed down the gap between the rich and the poor and rather widened the gap contrary to the 11th five-year Plan approach, i.e. 'towards inclusive growth'. If we examine the progress in different components of Education for All (EFA), India has made remarkable improvements in enrolment. Despite these attainments, there are areas of apprehension which are acting as hurdles to achieve the goals of universal literacy and univeral school education. Existing literature shows that special emphasis on the education of women is crucial for universalising school education as it is vital to the improvement of the health practices of its community apart from human capital development. In addition to overall low levels of literacy at the national level, disparities across regions, genders, social groups, etc., are of serious concern.

UNESCO's new Global Education Monitoring (GEM) reports (2015) and 2016 reveal that India is expected to achieve universal primary education by 2050, universal lower secondary education by 2060 and universal upper secondary education by 2085. In other words, India would be more than half a century late for the 2030 SDGs deadline (IndianExpress.com 2015). The report further suggested that the government take inequalities in education seriously by getting information directly from families. International Institute for Educational Planning, under UNESCO, reports that more than 50% of secondary schools in India have enrolments below 50 in Grades 9 and 10. The report further states that financing universal secondary education, at current cost structures, could require more than 2% of State Gross Domestic Product which is unsustainable and requires greater efficiency. It is suggested that those worse-off among the marginalised groups need to be given preference over the better-off to achieve equity in education. Basing on UNESCO data, IndiaSpend reports (2016) reveal that there is still large disparity in the achievement of basic skills, such as reading and mathematics, where there has been a decline in learning outcomes.

Within South India, progress in education is not satisfactory in Telugu-speaking States, i.e. Telangana and Andhra Pradesh. Perhaps this might have prompted the Telangana State government to announce free education from Kindergarten (KG) to Postgraduate (PG). A study undertaken by CESS (2016), on Millennium Development Goals (MDGs), clearly indicates the presence of intra-State variations in both the Telugu-speaking States with regard to school enrolment and in youth literacy. Young lives, a longitudinal survey in Telugu-speaking States shows that 91% of 15-year-old children were enrolled in secondary schools in 2016, up from 78% in 2009. However, the study reveals a decline in the performance of mathematics in 2016 compared to 2009 (Galab and Reddy 2017a, b; https://www.younglives.org.uk).

Table 1 Literacy rates of 7+ population in united Andhra Pradesh and all India

Year	United Andhra Pradesh				All India			
	Person literacy rate	Male literacy rate	Female literacy rate	Gender gap	Person literacy rate	Male literacy rate	Female literacy rate	Gender gap
1961	21	30	12	18	28	40	15	25
1971	25	33	16	17	34	46	22	24
1981	30	39	20	19	44	56	30	26
1991	44	55	33	22	52	64	39	25
2001	61	70	51	19	65	75	54	21
2011	68	76	60	16	74	82	66	16

Source Census data

2 Growth in Population

The growth in population has implications for universalising the secondary education. The share of the population of Telangana State in the total Telugu-speaking States was 39.2% in 1991 and increased to 41.8% by 2011. The population growth rates of Telangana and Andhra Pradesh during 1991–2011 were 35.2 and 22.1 respectively. We find relatively high growth in population during 1991–2011 in Southern Telangana zone (42.2%) in Telangana State comprising Mahabubnagar, Rangareddy, Hyderabad, Nalgonda and Khammam districts, and Rayalaseema zone (29.9%) in Andhra Pradesh State consisting of Ananthapur, Cuddapah, Kurnool and Chittoor districts.[1] Given the existing structural barriers and the policy approach towards encouraging private players in education, it is of interest to examine the status of literacy of 7+ populations at disaggregated levels as it may help the policy-makers take suitable actions in the required areas.

3 Literacy Rates in United Andhra Pradesh and All India

Like growth in population, literacy rate among 7+ population also plays an important role in the universalisation of secondary education. The literacy rate in Andhra Pradesh and Telangana States, together, was always lower than the all-India average (Table 1). The combined State of Andhra Pradesh has made substantial progress during the two decades, i.e. 1981–2001, but the results of the 2011 Census figures do not reveal an encouraging picture. It is important to observe that the number of literates is increasing considerably but, at the same time, population is also increasing.

[1]North Telangana comprises Medak, Warangal, Karimnagar, Nizamabad and Adilabad districts in Telangana state. North Coastal Andhra covers Srikakulam, Vizianagaram and Visakhapatnam districts in Andhra Pradesh; South Coastal Andhra zone comprises East Godavari, West Godavari, Krishna, Guntur, Prakasam and Nellore districts in Andhra Pradesh.

If we neglect this, then there will be a danger of accumulation of more and more illiterates in these States. Thus, there is need for overall improvement in the literacy rates, irrespective of social category, gender and geographical areas.[2] The combined State of Andhra Pradesh, with a person or total literacy rate of 67.7, is among the four least literate States in India. The other three least literate States are Bihar (63.8), Rajasthan (67.1) and Jharkhand (67.6). In terms of male literacy, combined Andhra Pradesh (75.6) is just only above Bihar (73.4). While the overall literacy rate has increased from about 44% in 1991–68 in 2011; the male literacy rate has increased from 55% to 76%.[3] What is encouraging is that the female literacy rate has improved substantially from 33 in 1991–60 in 2011. The ratio of female literacy to male literacy has exhibited increasing trend after 1981, both for the united Andhra Pradesh and for all India, thus revealing the narrowing of gender gap in the literacy in both the cases, which is a welcome sign (Table 1).

At the disaggregate level, in Telangana State, only Hyderabad district, with literacy rate of 83.2 and gender disparity in literacy of about seven points, has reached the 11th Plan literacy targets. Apart from Hyderabad, the other district which has literacy rate higher than the all-India literacy rate of 74 is Rangareddy (76). Not only are the literacy rates of all the other districts in Telangana less than 74 (the literacy rate at all-India level), but the gender disparities in literacy are also substantially higher than 16.6 (the gender disparity in literacy at all-India level) except in Khammam (14.9) and Rangareddy (12.7). We find that Mahabubnagar (55.0) is the least literate district in Telangana State. All the districts in Telangana State have rural literacy rates lower than the all-India rural literacy rate of 67.8. It is highly disheartening to note that the urban–rural gap in literacy rates in all the districts in Telangana State is substantially higher than that of the all-India urban-rural literacy gaps for both the males and the females and also in case of all persons (Reddy et al. 2017).

In the new State of Andhra Pradesh, the only districts that are closer to the All-India literacy rate of 74% are Krishna (73.7%) and West Godavari (74.6%). Further, the female literacy rates of these two districts (69.2 and 71.4, respectively) and East Godavari (67.5) are higher than the all-India female literacy rate of 65.5%. We find the districts Vizianagaram (58.9) and Kurnool (60.0) are low literate districts (also in terms of both the male and the female literacy rates as well). It is also worth noting that the male literacy rates of all the districts in Andhra Pradesh are lower than the all-India male literacy rate of 82.1%.

To sum up, the low literacy rate districts and districts with high gender gap in literacy rates need adequate attention. Some of the low literate (FLR, MLR and PLR) districts, such as Kurnool in Andhra Pradesh and erstwhile Mahabubnagar

[2]Study by Galab et al. (2013) on primary education in Andhra Pradesh reveals that education officers in the state perceived that there is no gender discrimination in education but children of tribal communities and migrating labour are facing problems in having access to education. The officers observed that teacher absenteeism is higher in tribal areas and special training is needed for teachers in tribal areas. Vacant posts and inadequate support are the reasons for lack of monitoring mechanism affecting the governance.

[3]Dixon's study (2010) revealed that generally private-unaided schools are contributing significantly to India, achieving the target of education for all.

in Telangana, are also having relatively high gender differences in literacy rates (GDLR), and relatively high MLR districts, such as Cuddapah in AP and erstwhile Nalgonda in TS, are also having high GDLR values. Thus, there is need to give more thrust in these areas to improve equity in literacy which is essential to achieve universalisation of secondary education. The results, flowing from the analysis of sex ratio, strongly recommend that the rural mandals, with child sex ratio less than 950, need special attention, since adverse child sex ratio will have implications on gender equity and literacy of the future generation.

4 Universalising Secondary Education—All India

4.1 Data Sources and Methodology

This study used four rounds of data collected by National Sample Survey Organisation (NSSO), i.e. 50th (1993–94), 61st (2004–05), 66th (2009–10) and 68th round (2011–12). The data collected relate to school attendance rates, educational status (never attended, drop-out, currently attending) and educational levels of children in the specified age groups. This facilitates estimating trend growth rates (annual compound growth rates) in the above specified variables along with its precision levels and estimating their values for the specified future years. The study also estimates probit models to find out the factors impacting the completion rates and the net enrolment ratios by location and by different social groups. For assessing the status of universalising secondary education, we confined ourselves to the net enrolment rates (NER), never-enrolled, and drop-out rates from school in the age groups 14–15 years and 16–17 years at all-India level.

For the model Log Y_t = a + b t, the compound annual growth rate (CAGR) is $(e^b - 1)100$

5 Probit Model

$$Y = a + b_1x_1 + b_2x_2, \ldots, b_nx_{n+e}$$

where $Y = 1$ if the student completes secondary education, and $= 0$ otherwise

X_1 father's education
X_2 mother's education
X_3 share of education expenditure in total expenditure
X_4 enrolment in government school $= 1$, and $= 0$ otherwise and $e =$ error term

6 Net Enrolment Rates (NER) in the Age Group 14–15 and 16–17 Years at All-India Level

Net enrolment rate is the number of pupils who are enrolled in school as a percentage of the total children in the specified age group of the population. This is important in the context of universalising secondary education. At all-India level, the data on the percentage of children in the age group 14–15 years who are enrolled in the educational institutions reveals an increase from 32.2 in 1993–94 to 51.7 by 2011–12. The estimated trend growth rate in the percentage of children in the age group 14–15 years, enrolled in educational institutions, is 2.7, and it is significant. At this growth rate of 2.7, we expect that only 62.1% of children in the age group of 14–15 years would be enrolled in the educational institutions by 2020 whereas CABE report contemplated universal enrolment in secondary education by 2015. However, around three-fourths of the children from economically rich households (top quintile) would be net enrolled in schools by 2020 (Table 2). In contrast, little over half of the children (55.3%) alone from the poor households (lowest quintile) are expected to be enrolled by 2020. Urban children would also be lagging behind in net enrolment. It is interesting to note that the projected values for 2020 show that the difference between other castes (OCs) and other marginalised groups is narrowing though we

Table 2 All-India: net enrolment rates (NER) of children in the age group 14–15 years across socio-economic categories during different NSSO rounds—trend growth rates and predicted values of NER

Population groups	Rounds of NSSO				Growth rate	Predicted values of NER		Significance
	50th	61st	66th	68th		By 2015	By 2020	
Scheduled Tribes (ST)	22.2	25.8	39.8	47.8	4.5	48.9	60.8	*
Scheduled Castes (SC)	21.6	31.8	40.9	44.9	4.4	50.4	62.5	***
Other Castes (OC)	35.7	44.8	49.2	54.1	2.4	56.7	63.7	***
Boys	35.4	43.5	49.7	52.8	2.4	55.9	62.8	***
Girls	28.2	37.3	42.8	50.4	3.2	52.5	61.6	**
Poor	18.1	22.7	36.6	40.0	4.8	43.6	55.3	*
Rich	53.3	73.2	59.8	66.5	1.0	69.3	73.0	
Rural	27.0	35.8	44.5	50.0	3.6	53.6	63.9	***
Urban	47.0	55.1	53.0	56.3	1.0	57.7	60.5	
All	32.2	40.6	46.6	51.7	2.7	54.3	62.1	***

Source Different rounds of NSSO; Rich = top quintile, Poor = lowest quintile
Note *Significant to 10% level
**Significant to 5% level
***Significant to 1% level

Table 3 All-India: net enrolment rates (NER) of children in the age group 16–17 years across socio-economic groups during different NSSO rounds—trend growth rates and predicted values of NER

Population groups	Rounds of NSSO				Growth rate	Predicted values of NER		Significance
	50th	61st	66th	68th		By 2015	By 2020	
ST	18.8	30.2	22.1	31.0	2.2	30.7	34.1	
SC	21.2	32.7	27.8	31.2	2.0	33.8	37.4	
OC	33.5	43.7	35.7	42.1	1.0	42.1	44.2	
Boys	35.9	45.1	34.6	40.8	0.3	40.1	40.7	
Girls	23.6	35.2	30.8	37.1	2.3	38.8	43.4	
Poor	17.0	21.2	16.8	22.3	0.9	21.0	22.0	
Rich	44.9	66.6	57.2	58.9	1.5	65.2	70.3	
Rural	25.4	36.1	28.6	36.0	1.5	36.0	38.8	
Urban	42.7	52.0	44.0	47.1	0.4	48.0	48.9	
All	30.3	40.5	32.9	39.1	1.1	39.3	41.5	

Source Different rounds of NSSO; Rich = top quintile, Poor = lowest quintile

observe considerable differences in 1993–94 and 2011–12. It is due to higher rate of growth in net enrolment among Scheduled Castes (SCs) and Scheduled Tribes (STs). However, we should note that given the rate of growth, 100% net enrolment of children in the age group 14–15 years would be achieved only by 2038.

For universalising secondary education, net enrolment rates of children aged 16–17 years also play a pivotal role. At all-India level, around 30% of the children in this age group alone were enrolled in schools as on 1993–94 and it has increased to 39.1% by 2011–12 with a growth rate of 1.1% (Table 3).

At this rate of growth, 41.5% of children alone would be enrolled in school by 2020. Children from poor households and ST households are the most deprived ones and they need special attention. Even from economically rich, 70% of the children alone are likely to be in the schools by 2020. However, disparities between social groups and gender are narrowing over time, and more so, in the case of gender. It will take about 80 years beyond 2020, to achieve 100% net enrolment of children in the age group 16–17 years.

The school attendance status of children in the age group 14–15 years, which is also important in achieving the universalisation of secondary education, varies with the socio-economic groups. For instance, rural SC boys would be reaching 100% target by 2022; rural children in the poor households would be reaching 100% target by 2019; and it is very difficult for ST and SC children in the urban areas to reach the target even after 2020.[4] The gender disparity in the attendance rates (GDIA) and the urban–rural gap in attendance rates are decreasing over time. In fact, the GDIA

[4]Results available with authors and will be shared on request.

Table 4 All-India: never-enrolled rates of children in the age group 14–15 years across socio-economic groups during different NSSO rounds—trend growth rates and predicted values of never-enrolled children in the age group 14–15 and 16–17 years at all-India level

Population groups	Rounds of NSSO				Growth rate	Predicted values of never-enrolled rates		Significance
	50th	61st	66th	68th		By 2015	By 2020	
ST	38.7	19.0	8.9	4.5	−11.0	4.3	2.4	**
SC	33.4	12.4	6.9	6.3	−9.6	4.5	2.7	***
OC	19.6	8.3	5.3	3.8	−8.9	3.1	2.0	***
Boys	17.8	7.0	4.6	3.7	−8.8	2.8	1.8	***
Girls	30.4	13.5	7.7	5.2	−9.5	4.4	2.7	**
Poor	38.9	19.5	11.0	8.4	−8.5	7.0	4.5	**
Rich	9.2	1.8	0.8	0.6	−15.0	0.4	0.2	***
Rural	28.0	11.4	6.4	4.7	−9.8	3.7	2.2	***
Urban	10.4	5.8	4.5	3.6	−5.9	3.1	2.3	***
All	23.5	10.0	5.9	4.4	−9.2	3.5	2.2	***

Source Different rounds of NSSO; Rich = top quintile, Poor = lowest quintile
Note *Significant to 10% level
**Significant to 5% level
***Significant to 1% level

Table 5 All-India: never-enrolled rates of children in the age group 16–17 years across socio-economic groups during different NSSO rounds—trend growth rates and predicted values of never-enrolled

Population groups	Rounds of NSSO				Growth rate	Predicted values of never-enrolled rates		Significance
	50th	61st	66th	68th		By 2015	By 2020	
ST	43.8	22.3	8.5	5.8	−11.0	4.9	2.7	**
SC	36.8	13.5	6.5	5.8	−10.6	4.0	2.3	***
OC	20.6	10.0	5.1	4.2	−9.0	3.4	2.1	**
Boys	18.0	8.6	4.4	3.8	−8.9	2.9	1.8	***
Girls	33.7	15.1	7.2	5.7	−9.9	4.5	2.6	**
Poor	42.3	22.6	12.2	10.2	−8.1	8.3	5.5	**
Rich	11.5	2.0	0.6	0.6	−16.9	0.3	0.1	***
Rural	30.5	13.8	6.3	5.2	−10.0	4.0	2.4	**
Urban	11.5	6.0	4.0	3.2	−7.1	2.7	1.9	***
All	25.1	11.6	5.7	4.6	−9.5	3.6	2.2	**

Source Different rounds of NSSO; Rich = top quintile, Poor = lowest quintile
Note *Significant to 10% level
**Significant to 5% level
***Significant to 1% level

Table 6 All-India: school drop-out rates in the age group 14–15 years across socio-economic groups during different NSSO rounds—trend growth rates and predicted values of drop-out rates

Population groups	Rounds of NSSO				Growth rate	Predicted values of drop-out rates		Significance
	50th	61st	66th	68th		By 2015	By 2020	
ST	18.6	25.8	19.1	14.4	−1.0	17.4	16.5	
SC	20.7	25.3	18.4	15.1	−1.5	16.8	15.6	
OC	19.5	19.1	12.2	9.7	−3.8	10.1	8.3	
Boys	17.7	18.8	11.7	10.1	−3.2	10.4	8.9	
Girls	22.1	23.2	17.1	12.5	−2.8	14.0	12.2	
Poor	19.5	27.7	20.3	16.2	−0.7	19.2	18.6	
Rich	14.0	6.3	3.1	4.1	−8.0	2.6	1.7	**
Rural	20.6	22.1	15.3	12.0	−2.8	13.0	11.3	
Urban	17.0	17.3	10.5	8.9	−3.6	9.1	7.6	
All	19.7	20.9	14.1	11.2	−2.9	12.0	10.4	

Source Different rounds of NSSO; Rich = top quintile, Poor = lowest quintile
Note *Significant to 10% level
**Significant to 5% level
***Significant to 1% level

Table 7 All-India: School drop-out rates in the age group 16–17 years across socio-economic groups during different NSSO rounds—trend growth rates and predicted values of drop-out rates

Population groups	Rounds of NSSO				Growth rate	Predicted values of drop-out rates		Significance
	50th	61th	66th	68th		By 2015	By 2020	
ST	27.6	37.1	38.1	33.1	1.4	38.6	41.5	
SC	31.6	41.6	33.0	28.7	−0.3	32.4	31.9	
OC	32.8	35.5	26.8	22.2	−2.0	23.9	21.6	
Boys	31.5	34.8	26.6	21.9	−1.8	23.8	21.7	
Girls	33.0	39.2	32.0	27.3	−0.8	30.1	28.8	
Poor	31.0	46.9	40.3	34.6	1.0	41.4	43.5	
Rich	26.2	16.5	9.5	8.3	−6.6	7.1	5.0	**
Rural	33.2	39.6	32.1	26.5	−1.0	29.6	28.2	
Urban	29.6	29.8	21.2	18.9	−2.5	19.1	16.8	
All	32.2	36.8	29.0	24.4	−1.3	26.6	24.9	

Source Different rounds of NSSO; Rich = top quintile, Poor = lowest quintile
Note *Significant to 10% level
**Significant to 5% level
***Significant to 1% level

Table 8 All-India: Secondary completion rates of 17-year-olds (SCR17) across socio-economic groups during different NSSO rounds—trend growth rates and predicted values of SCR17

Population groups	NSSO rounds				Growth rate	Predicted values of SCR17		Significance
	50th	61st	66th	68th		By 2015	By 2020	
ST	28.1	27.6	42.8	48.4	3.2	48.0	56.1	
SC	25.2	34.6	46.3	53.8	4.4	58.0	72.1	**
OC	43.4	49.9	59.4	66.6	2.4	67.9	76.5	**
Boys	40.2	46.2	55.7	63.7	2.6	64.5	73.2	**
Girls	39.6	45.1	55.1	62.2	2.6	63.2	71.7	*
Poor	23.0	25.2	36.5	42.7	3.6	43.0	51.2	*
Rich	56.7	72.7	81.3	83.9	2.4	91.0	100.0	***
Rural	33.1	40.4	49.3	59.1	3.2	60.0	70.3	**
Urban	52.1	56.8	70.0	71.7	2.0	74.7	82.3	*
All	40.0	45.8	55.4	63.1	2.6	63.9	72.5	*

Source Different rounds of NSSO; Rich = top quintile, Poor = lowest quintile
Note *Significant to 10% level
**Significant to 5% level
***Significant to 1% level

among children in the age group 14–15 years during 2011–12 in rural, urban and all areas at all-India level are 5.2, 3.1 and 4.6, respectively. GDIA among children in OCs and STs are relatively higher compared to that of the SCs in both the rural and the urban areas at all-India level.

Every child in the age group 14–17 years must be in school to achieve the goal of universalising secondary education. Taking the clue from the previous years, it is estimated that by 2020, around 2.2% of children in the above-said age group would be never-enrolled. It is true that there is substantial improvement in the enrolment across various socio-economic groups (Tables 4 and 5). For instance, 23.5% were never-enrolled in the year 1993–94, and it reduced to 4.4% of children in 2011–12 in case of children aged 14–15 years and, with the rate of growth, never-enrolled would be 2.2% by 2020. Despite improvement in enrolment, there are huge differences in the never-enrolled between children from poor and rich households. Similar results hold good in the case of children aged 16–17 years (Table 5). Higher percentage of girls compared to boys are likely to be never-enrolled.

7 Drop-Out Children in the Age Groups 14–15 and 16–17 Years at All-India Level

It is all the more imperative to arrest the drop-outs from schools in the said age groups of children to achieve universalisation of secondary education. It is true that there is a drastic decline in the drop-out rates among the school-going children in the age groups 14–15 and 16–17 years (Tables 6 and 7). There is nearly 8.5% points of decline from 1993 to 94 and 2011 to 12 among the school-going children aged 14–15 years (Table 6). At the given rate of decline, nearly one-tenth of children would be dropping out by 2020 which would pose a hurdle in achieving the universalisation of secondary education. In case of children in the age group of 16–17 years, around one-fourth of children are likely to drop out of school by 2020 (Table 7). There are huge differences in the school drop-outs. For instance, one-third of children dropped out in 2011–12 and this would increase to 41.5% by 2020. We also observed gender differences and differences between poor and rich in drop-outs.

8 Secondary Completion Rates (SCR17) at All-India Level

We noticed that some children may complete secondary education only after 16th year due to late entry to schools. Hence, we examined the status of Secondary Completion Rate (SCR) of 17-year-old children and factors affecting SCR of children. Thus, we expect all children to complete secondary level by the time they reach the age of 17 years. The data on the SCR of children at the age of 17 years indicates that it has increased from around 40.0 in 1993–94 to 63.1 in 2011–12. The estimated trend growth rate in the SCR of children at age 17 years is 2.6, and it is significant. At this growth rate of 2.6, we expect that about 65.2% of the 17-year-old children would be completing secondary level during 2016, and only about 72.5% of the 17-year-old children would be completing secondary level during 2020. The SCR of girls is higher than that of the SCR of boys in the urban areas, and it is simply the reverse in the case of rural areas. The same holds across all the social categories. We find that the SCR of children in the rich households reaches 100 by the year 2019, whereas the picture is gloomy in the case of the children belonging to the poorer households. Overall, it will take 13 years beyond 2020, to achieve 100% in completion rates of 17-year-olds in secondary education. Children from poor households would achieve 100% only by 2039 and children from ST households by 2038. From this perspective, it may be noted that universalising secondary education is only a distant dream.

9 Determinants of Secondary Completion Rates (SCR17)

Probit analysis is used to find out the factors determining the secondary completion rates by location and by different social groups. The salient findings are given in Table 9, and the details are as follows:

- Father's education has significant positive impact on the SCR17 of OC children (except rural boys), whereas it has no impact on the SCRs of SC and ST children in both the rural and urban areas.

Table 9 Signs and significant levels of the coefficients of the estimated probit model: secondary completion rate (SCR) of 17-year-old children

Independent variables	All	Rural	Urban	Boys	Girls
SCR of 17 year all children: Signs and significance levels of the estimated coefficients					
Education of father	+ve**	+ve**	+ve**	+ve**	+ve**
Education of mother	+ve**	+ve**	+ve*	+ve**	+ve*
Education expenses share	+ve**	+ve**	+ve**	+ve**	+ve**
Monthly per-capita expenditure	+ve**	+ve**	+ve**	+ve**	+ve**
Enrolment in Govt = 1 and = 0 otherwise	NS	−ve*	+ve**	NS	NS
SCR of 17-year-old OC children					
Education of father	+ve**	+ve*	+ve**	+ve*	+ve**
Education of mother	+ve**	+ve**	+ve[a]	+ve**	+ve**
Education expenses share	+ve**	+ve**	+ve**	+ve**	+ve**
Monthly per-capita expenditure	+ve**	+ve**	+ve**	+ve**	+ve**
Enrolment in Govt = 1 and = 0 otherwise	+ve*	NS	+ve**	NS	+ve*
SCR of 17-year-old SC children					
Education of father	+ve[a]	+ve[a]	NS	NS	NS
Education of mother	+ve*	NS	+ve[a]	NS	NS
Education expenses share	+ve**	+ve**	+ve*	+ve**	+ve**
Monthly per-capita expenditure	NS	NS	NS	NS	NS
Enrolment in Govt = 1 and = 0 otherwise	NS	−ve**	NS	NS	−ve**
SCR of 17-year-old ST children					
Education of father	+ve*	+ve*	NS	+ve*	NS
Education of mother	NS	NS	NS	NS	NS
Education expenses share	+ve[a]	NS	+ve[a]	+ve[a]	NS
Monthly per-capita expenditure	NS	NS	NS	NS	NS
Enrolment in Govt = 1 and = 0 otherwise	NS	−ve *	NS	NS	NS

**, * and "a" denote significance levels of the coefficients at 1%, 5% and 10%, respectively
NS not significant

- Similarly, mother's education has significant positive impact on the SCRs of OC children in the rural areas only, and it has no significant impact on the SCRs of SC and ST children in both the rural and the urban areas.
- The share of household expenditure on education of children has a significant positive impact on the SCRs of all the OC children and all the SC children (except urban boys) and on ST urban boys only.
- Per-capita monthly consumer expenditure has a significant positive impact on the SCRs of all the OC children only.
- The SCR of the children studying in government and private-aided schools is significantly higher than the SCR of children studying in private-unaided schools in the case of OC urban boys only and whereas it is in the reverse direction in the cases of rural SC girls and rural ST boys.
- There are no significant differences in all the other cases.

10 Prospects of Universalising the Secondary Education in Telugu States

An attempt is made to assess the prospects of universalising the secondary education using NSSO data and Young Lives panel data in Andhra Pradesh and Telangana States. We also reflect on the results of the recent related research studies in the States handled by the authors. Due to time constraints, we used 50th and 68th rounds of NSSO for the Telugu-speaking States, and that too for net enrolment of 6–14 years, for the assessment.

The NSSO data reveals that there is substantial improvement in the net enrolment rates in both the States, viz. Telangana and new Andhra Pradesh. For instance, in Telangana, NER was 52% in 1993–94 and increased to 78% in 2011–12, registering a growth rate of 2.2%. At this rate, NER of 6–14 years would be 95% by 2020 (Table 10). Within the State, erstwhile Hyderabad district, followed by Karimnagar, Nizamabad, Warangal and Adilabad are laggard districts by 2020 and there is need to pay attention on these erstwhile districts. We observe substantial improvement in enrolment by 2011–12 in most laggard districts such as erstwhile Mahabubnagar and Nalgonda that would be likely to achieve 100% enrolment before 2020. However, one needs to be cautious in interpretation as this is due to higher rate of growth owing to low base value. Telangana State will achieve 100% enrolment of children aged 6–14 years by 2022 at this growth rate, erstwhile Karimnagar by 2049 and Hyderabad, not in the near future.

In the case of new Andhra Pradesh, like Telangana, 95% of the children in the age group 6–14 years are likely to be enrolled by 2020, an increase of 41% points over 1993–94. The State would achieve 100% NER by 2023, Visakhapatnam district by 2059, Cuddaph district by 2036 and Srikakulam by 2030. Thus, there is need to concentrate on these laggard districts to achieve the goal of universalisation of secondary education in the near future.

Table 10 Net enrolment rates (NER) of children aged 6–14 years in the Telugu-speaking States

District/State	NSSO 50th round	NSSO 68th round	CAGR	Projection	
				2015	2020
Adilabad	56.27	78.16	1.74	85.0	91.8
Nizamabad	52.79	73.95	1.79	80.6	87.2
Karimnagar	65.17	75.07	0.75	77.9	80.7
Medak	48.99	75.16	2.28	83.7	92.3
Hyderabad	78.16	79.51	0.09	79.9	80.2
Rangareddi	54.85	87.62	2.50	98.6	100.0
Mahbubnagar	29.45	75.70	5.09	95.0	100.0
Nalgonda	34.60	78.26	4.39	95.4	100.0
Warangal	60.30	79.82	1.49	85.8	91.7
Khammam	49.24	76.91	2.37	86.0	95.2
Telangana State	**51.88**	**78.09**	**2.18**	**86.6**	**95.1**
Srikakulam	51.90	72.08	1.74	78.4	84.6
Vijayanagaram	52.85	82.28	2.36	92.0	100.0
Visakhapatnam	71.46	78.58	0.50	80.5	82.5
East Godavari	51.48	78.55	2.25	87.4	96.2
West Godavari	55.76	74.78	1.56	80.6	86.4
Krishna	56.03	84.31	2.17	93.5	100.0
Guntur	56.42	83.21	2.07	91.8	100.0
Prakasam	47.65	82.39	2.92	94.4	100.0
Nellore	55.11	80.76	2.03	89.0	97.2
Coastal Andhra	**55.65**	**79.89**	**1.92**	**87.6**	**95.2**
Cuddapah	56.67	72.32	1.29	77.0	81.7
Kurnool	38.70	83.05	4.10	100.1	100.0
Ananthapur	62.00	79.02	1.28	84.1	89.2
Chittoor	56.89	77.13	1.61	83.4	89.6
Rayalaseema	**53.83**	**78.75**	**2.02**	**86.7**	**94.7**
Andhra Pradesh	**53.86**	**78.91**	**2.03**	**86.9**	**94.9**

11 What Does the Young Lives Longitudinal Panel Study Reveal?

Young Lives (https://www.younglives.org.uk) is a longitudinal panel study in Andhra Pradesh and Telangana following the same children (3000) and their households since 2002 and, so far, five rounds of data collection have been completed. It is a two cohort study—younger cohort were one year old in 2002 and turned to 15 years by 2016 when the fifth round was completed; older cohort, who were eight-year-old in 2002, turned to 22 years by 2016. The study facilitates inter-cohort comparison on important

Table 11 Enrolment details from young lives—A longitudinal panel study in Telugu states

Population Groups	Enrolment of younger cohort (%)			Enrolment of older cohort (%)
	Age 8 in 2009	Age 12 in 2013	Age 15 in 2016	Age 15 in 2009
Male	99.40	97.42	92.54	82.65
Female	98.74	96.90	89.47	73.82
SC	98.83	97.97	91.10	77.20
ST	98.93	96.09	86.67	75.73
BC	98.85	96.44	90.62	75.83
OC	100.00	98.95	95.45	85.48
Poor	98.40	95.59	84.43	68.00
Rich	99.84	99.36	96.81	88.37
Urban	99.79	98.67	94.80	86.79
Rural	98.85	96.59	89.56	75.43
Govt. school	54.67	59.26	57.79	64.11
Andhra Pradesh	**99.24**	**97.66**	**90.78**	**79.35**
Telangana	**98.80**	**96.21**	**91.63**	**75.79**
Both the states	99.09	97.18	91.11	78.10

indicators, including education. There is a substantial improvement in enrolment of 15-year-olds in both the States. In fact, 79.35% of 15-year-olds were enrolled as on 2009 in A P and in seven years' time, i.e. by 2016, the enrolment of children aged 15 years increased to 90.8%, accounting for around 11% points increase in enrolment. We find much higher increase in the case of Telangana (Table 11).

Despite increase in enrolment of 15-year-olds in a seven-year period, there are differences in enrolment among socio-economic groups. For instance, around 12% points difference between poor and rich, around three percentage points between gender, and nearly nine percentage points of difference between other castes and ST children. These results, by and large, are in conformity with the predictions based on NSSO data presented earlier. There is a need to target the laggard sections to achieve universalisation of secondary education in both the States.

But the CABE under the Ministry of Human Resources, in its report, contemplates that by 2020, the target should be universal enrolment in secondary education, full retention and mastery learning in all kinds of learning tasks by more than 60% learners. Thus, universalisation is not merely enrolment but mastery learning by majority of students. Young Lives study results provide inter-cohort comparison in learning by 15-year-olds (i.e. 15-year-olds in 2009 and in 2016) by posing common mathematics questions. The questions posed and the learning outcomes of students are placed in Table 12.

The results reveal that a quarter of the 15-year-olds did not answer any comparable questions correctly in both the States, and more so in Telangana, either in 2009 or in 2016. Around 12% of the students answered all the comparable questions correctly in

Table 12 Learning outcomes of 15-year-old children in Telugu States—Evidence from panel study

Population Groups	Answered common mathematics questions correctly (%)						Answered all comparable mathematics questions correctly (%)		Did not answer any comparable mathematics questions correctly (%)	
	Solving addition 9.81 + 7.62		Reading a pie chart		Approximating annual sales from weekly data					
	2009	2016	2009	2016	2009	2016	2009	2016	2009	2016
Male	57.1	58.7	40.5	37.2	37.2	29.2	16.8	11.3	23.5	24.4
Female	50.1	58.7	35.1	38.4	24.6	24.4	7.1	8.6	29.6	24.0
SC	40.8	52.8	30.2	33.2	29.6	23.2	7.3	6.8	34.6	26.4
ST	50.5	50.7	24.7	36.1	28.9	23.4	7.2	6.9	34.0	27.4
BC	53.4	59.3	38.6	37.3	28.1	26.4	11.0	10.0	27.3	25.8
OC	68.0	68.6	50.3	44.2	38.7	34.3	20.4	15.2	13.3	16.5
Poor	42.9	50.3	27.1	32.8	27.1	22.1	6.2	6.0	35.2	30.8
Rich	62.9	67.9	45.9	41.7	35.4	31.9	16.0	13.8	17.7	17.0
Urban	59.5	66.7	46.3	40.2	34.6	30.1	14.2	13.3	18.5	20.0
Rural	51.6	56.1	35.0	37.0	29.5	26.0	11.1	9.0	29.2	25.6
Govt. school	51.8	54.5	33.9	37.9	29.4	25.4	9.7	9.0	26.3	25.8
Private school	74.9	74.3	55.1	43.2	40.9	31.9	20.2	14.0	8.9	13.2
Andhra Pradesh	55.8	63.7	40.0	40.4	30.4	29.3	11.9	11.6	25.2	21.3
Telangana	49.2	49.5	33.5	32.8	31.4	22.8	11.6	7.1	29.4	29.7
Both states	53.5	58.7	37.7	37.8	30.7	27.0	11.8	10.0	26.6	24.2

2009 and only 10% in 2016, i.e. a two percentage points decline in the performance. The decline in learning outcomes in Telangana is much more (4.5% points) compared to A P. There are huge socio-economic differences in the learning achievement and it is true in both the States. Thus, both the States are far away from the contemplated objective of CABE report in terms of learning achievement, though some sections are better placed in enrolment.

11.1 What the Recent Survey on Out-of-School Children in Telangana Reveal?

The authors were associated with the recent survey (2018), conducted by Centre for Economic and Social Studies (CESS), on out-of-school children in Telangana and present brief results that help in assessing the situation on universalisation of secondary education. As a part of the research, we conducted a listing survey,

Table 13 Out-of-school children in the age group 6–16 years in the State of Telangana

District	Total No. of Hhlds	Never attended	%	Drop-out	%	OoSC	%
Jogulamba Gadwal	544	25	4.6	92	16.9	117	21.5
Jayashankar Bhupalpally	398	10	2.5	31	7.8	41	10.3
Komaram Bheem	415	6	1.4	69	16.6	75	18.1
Hyderabad	592	17	2.9	81	13.7	98	16.6
Total	1949	58	3.0	273	14.0	331	17.0

Note OoSC = out-of-school children; Hhlds = Households having 6–16-year-old children
Source CESS field survey 2018

covering 3357 households spread over the four newly-formed districts in the State of Telangana. Out of 3357 listed, 1949 households reported the presence of 6–16-year-old children. The main objective of the study was to estimate the numbers of out-of-school children (OoSC) and ascertain the reasons for the out-of-school incidence.

The results reveal that 17% of 6–16-year-olds in the State (Telangana) are out-of-school, comprising 14% drop-outs and three percentage never-enrolled (Table 13). OoSC varies across districts, i.e. highest in Jogulamba Gadwal district (21.5%) and the lowest in Jayashankar Bhupalpalle district (10.3%). Within the social groups, STs recorded the highest with 18.8% of OoSC, followed by BCs (16.3%), SCs (15.4%) and OCs (14.1%). Thus, there are never-enrolled and drop-outs in the age group 6–16-years, irrespective of the district and social group, and the strategy must be to address the issue at micro level.

Among the drop-outs, it emerges that overall 41% of the children aged 6–16-years are dropping out in the primary classes, i.e. before reaching Grade-5. Another 42% are dropping out in the elementary classes, i.e. Grades-6, 7 and 8, and 16.6% in the secondary and higher secondary classes, i.e. Grades-9, 10 and 11 (Table 14). On an average, these children are completing only Grade-6. The drop-out rate by district,

Table 14 Caste-wise, grade-wise drop-out rates in Telangana

Caste	Up to primary	Grades 6 + 7 + 8	Grade 9	Grade 10	Grade 11	Average grade at which dropped out
SC	20.8	58.5	10.4	7.8	2.6	6.8
ST	63.3	29.9	5.1	1.7	0	4.4
BC	32.4	45.9	8.1	5.6	8.1	6.6
OC	50.0	16.7	8.3	8.3	16.7	6.4
All	41.3	42.1	7.6	4.8	4.2	5.9

caste and grade differs and there are huge variations. For instance, around 29% are dropping out by the time they complete primary classes in Jogulamba Gadwal district. This is 40% in the case of Jayashankar Bhupalpalli, 45% in the case of Komaram Bheem, and 50% in the case of Hyderabad. Given the trend, universalisation of enrolment in secondary schools is a distant dream and, as such, efforts have to made in mission mode to achieve universalisation of secondary education.

12 Summary and Conclusion

Central Advisory Board of Education (CABE) committee in 2005 recommended universalising of secondary education by 2015. The target envisaged universal enrolment, full retention and mastery learning in all kinds of learning tasks by more than 60% learners by 2020. RMSA, in partnership with State governments, seeks to universalise enrolment in Grades 9 and 10 across the country. The target is for universalising entry into secondary school by the end of 2017 and achieving universal completion of Grade 10 by 2020. SDG also contemplates to ensure *inclusive and equitable quality education and promote lifelong learning opportunities for all* in India by 2030. But the literature, including UNESCO reports, shows wide disparities in enrolment and in learning levels across socio-economic groups, while expressing concern on the possibilities of achieving universalisation of secondary education. With regard to literacy rate, the Telugu-speaking States (Andhra Pradesh and Telangana) together was always lower than the all-India average. The combined State of Andhra Pradesh, with a person or total literacy rate of 67.7, is among the four least literate States in India. The other three least literate States are Bihar (63.8), Rajasthan (67.1) and Jharkhand (67.6). Against this backdrop, the study attempts to assess the prospects and challenges in achieving the universalisation of secondary education in India and in the two Telugu-speaking states using NSSO data, and other surveys and reports.

At all-India level, the estimated trend growth rate in the percentage of children in the age group 14–15 years, enrolled in educational institutions, is 2.7 during 1993–94 and 2011–12 and it is significant. At this growth rate of 2.7, only 62.1% of children would be enrolled by 2020, whereas CABE report contemplated universal enrolment in secondary education by 2015. With the present rate of growth, 100% net enrolment of children in the age group 14–15 years would be achieved only by 2038. It will take 80 years beyond 2020, to achieve 100% net enrolment of children in the age group 16–17 years. It is more important to arrest the incidence of drop-outs from school in the said age group of children to achieve universalisation of secondary education. At the given rate of decline, nearly one-tenth of children in the age group 14–15 years and one-fourth in the age group 16–17 years would be dropping out from schools by 2020. Only about 65.2% of the 17-year-old children would be completing secondary level during 2016 and about 72.5% would be completing secondary level during 2020. Overall, it will take 13 years beyond 2020 to achieve 100% in secondary completion rates of 17-year-olds. Children from poor households would achieve 100% only by 2039 and children from ST households by 2038. From this perspective, we may note

that universalising secondary education is only a distant dream. Parental education and the share of expenditure on education are some of the factors that are determining the completion rates.

Similarly, Telangana State will achieve 100% enrolment of children aged 6–14 years only by 2022 and new Andhra Pradesh by 2023. Young lives, a panel and inter-cohort study, shows an increase of 11% points in enrolment of 15-year-olds from 2009 to 2016, i.e. around 91% of 15-year-olds were in schools in 2016. It is, by and large, true in both the States. In the case of 6–16 years, the out-of-school children are around 17% in Telangana, as per the research report 2018, and the average grade completed by those dropped out is only Grade-6. All these show that universalising the secondary education in the Telugu state is also a distant dream. Apart from the enrolment, the learning levels in both the States are declining which is a major concern that calls for the attention of the policy-makers.

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