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Effects of Public Spending on Primary Education: Insights from Select Indian States

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Pradyut Guha#

Abstract

Using secondary data, the present study examines the effectiveness of public spending on primary school education in India. The regression results, employing the GMM model, demonstrate that public spending still has a positive impact on the transition rate, though not very significantly. When we calculate the effects of the enrolment rate in public schools separately, it appears to have a negligible impact on transition rates. But private school enrolment has skyrocketed in recent decades, and its performance appears to have overshadowed that of public schools. This has a negative impact on low-income families since wealthier children have migrated to private schools, causing the public-funded schools to diseconomies of scale. As a result, public schools must be redesigned by increasing financing and implementing new ideas.

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Introduction

In India, primary education has long been neglected, which has led to both poor improvement in its results and the deprivation of universal elementary education for many children (De & Endow, 2008). This requires special attention, and investing in it is paramount. A study conducted by Senadza & Hodey (2015) indicated that a one per cent increase in public expenditure on primary education leads to a rise in net enrolment rate by 11.4 per cent. However, India has consistently failed to raise the much-targeted education spending to at least six per cent[1] of its gross domestic product (GDP) for quite a long time (Govinda & Bandyopadhyay, 2011). It hovered around three per cent until 2019-20 (Khaitan, 2021). In 1950-51, the share of primary education expenditure in India to its GDP was extremely low, estimated at 0.64 per cent, but it slightly rose to about 1.7 per cent in 1989-90 (Tilak, 1995). In the 2019-20 budget estimate, the expenditure on primary education was around 1.89 per cent of GDP, the highest among all education sub-sectors. It was followed by secondary education spending, which accounted for 1.03 per cent of GDP (GoI, 2022). In terms of government expenditure per primary school student as a percentage of its GDP per capita, India stands far below other high-income countries, with 9.8 per cent compared to 19.7 per cent in the United States, 23.1 per cent in the United Kingdom, and 23 per cent in Japan in 2013 (The World Bank, 2020). Therefore, many scholars (e.g., Bordoloi *et al.*, 2020; Srivastava, 2014; Gupta *et al.*, 2002; Tilak, 1995) have lamented the underfunding of primary education in India and its long-term adverse effect on its performance.

However, a study by Iyer (2009) discovered that public funding has little effect on primary school outcomes. Instead, it found that investing solely in private schools was highly effective. Nevertheless, the Union Budget 2020 has proposed an increase in the allocation of the education budget to at least six per cent, and the same recommendation was also given by the NITI Aayog for improving primary education quality (*Business Today*, 2020). Of course, in the recent past, there was a slight increase in the average per-student public spending at the primary level. In this case, however, Bordoloi *et al* (2020) argued that the modest increase in public spending on primary education was owing to an increase in overall state expenditure as well as a decrease in government school enrolment rate, and they continued to say that in real terms, public spending on primary education in India remained low.

When one looks at the inter-state analysis in India, interestingly, the economically better-off states of the country, measured by the per-capita income, like Goa, Tamil Nadu and Maharashtra, were found to be spending considerably less on school education, estimated at around one to two per cent of their gross state domestic product (GSDP). In contrast, Bihar, the poorest state, spent the highest share on school education, estimated at 4.3 per cent of its GSDP in 2017-18 (Bordoloi *et al.*, 2020). However, the corresponding performances, as measured by the transition rate and enrolment rate, for the aforementioned states were found to be quite contrasting, indicating that the states spending the highest share of their GSDP on primary education performed the worst (SRC, 2000-17), while the economically better-off states performed well (Sivakumar & Vijay, 2012). Despite higher spending on primary education as a percentage of GSDP, the transition rate from primary to upper primary level in

[1] The 6 per cent of GDP target for education is a recommendation made by several committees in India, including the Kothari Commission, the National Policy on Education, and the National Education Policy.

Bihar was 77.3 per cent in 2018-19, compared to 90.5 per cent nationally and 100 per cent in Kerala (GoI, 2018-19). This indicates that the relationship between public spending on primary education and its corresponding performance appears to vary among states/regions for a variety of reasons (Chatterji *et al.*, 2015; De & Endow, 2008).

On the other hand, when the Government of India (GoI) was striving for the development of elementary education and trying its level best to achieve the target of universalisation of elementary education by introducing many programmes,[2] the number of private schools was growing relatively at a rapid rate in the recent past (Venkatanarayanan, 2015; Srivastava, 2014). The share of students enrolled in private unaided schools has gone up significantly in the last four decades, increasing from hardly three per cent in the early 1980s to 35 per cent in 2018-19 (CSF, 2020). Between 2007 and 2016, the private primary school enrolment rate increased to over three per cent, while the government school enrolment rate decreased to roughly one per cent (SRC, 2000-17; MHRD, 2000-20). As a result, there has been a serious debate among academia, political leaders, and policymakers about whether to prioritise public funding or adopt a market-based privatisation approach for school education development, particularly at the primary level.

Having witnessed the above contradiction and inconclusive findings in terms of public spending on primary education and its impact on performance, this paper attempts to address three basic research questions: 1) Has public funding for primary education been ineffective in India? 2) What factors, other than public spending, may have the greatest influence on primary education performance in India? 3) What caused a rapid increase in enrolment and the number of private schools when the country started raising public spending on education?

Brief Literature Review

Most countries in the world today, especially the lower and upper-middle income countries, have started working towards a society in which every child gets a complete primary education at a minimum by combining international development frameworks such as the Millennium Development Goals, World Fit for Children, and Education for All, among others (UNICEF, 2012). The formal and effective education system in the world is a complementarity of three levels, which are sequentially connected in a bottom-up manner (Singha *et al.*, 2019; Agarwal & Ramesh, 2013; Hoxby, 2004). No effective higher education may be obtained without first completing a primary level. As a result, primary education is critical to a society's educational progress.

In lower-middle-income countries like India, bringing more children into the classrooms at the primary level, in terms of the enrolment rate, is more important than giving special attention to higher and technical education (De & Endow, 2008; Gupta *et al.*, 2002). Once the children are ensconced in the school classrooms, they will undoubtedly go to higher levels of education, provided the schools function properly with the support of the professional teacher labour force and high-quality infrastructure (Adamson, 2016; Nilekani & Lewis, 2009).

[2] Some of the recent important programmes implemented by the government to develop and expand school education in India include the Vidyanjali Yojana (2021), Pradhan Mantri Poshan Shakti Nirman (2021), Samagra Shiksha Abhiyan (2018), Digital Infrastructure for Knowledge Sharing (2017), and so on.

There is also no denying the fact that considerable investment is necessary to achieve this equitable primary education for all children.

While investigating the choice of investment (public or private), Adamson (2016) discovered that a public investment model that focuses on equity of student outcomes is better suited to the primary school education system than a market-based competition approach that creates winners and losers. Private investment in school education is made to improve measurable outcomes to attract consumers (students and families) and promote competition among them. In 2019, on average in OECD countries, 83 per cent of the funding for educational institutions (primary to tertiary level) came directly from public sources (OECD, 2022). However, Iyer's (2009) study of 115 districts in three Indian states (Andhra Pradesh, Karnataka, and Uttar Pradesh) found that public spending has little effect on enrolment, primary school transition rates, or exam performance. Instead, districts with a higher proportion of private schools appeared to do better on all performance parameters than public schools in these states. An increase in public expenditure per primary school student does not provide a blanket guarantee of higher enrolment, transition rate, or other performance indicators without taking other socioeconomic factors into account. Similarly, Chatterji *et al.* (2015) investigated how, even if wealthier Indian states spend more on public school education than poorer states, this does not guarantee effective child/student education outcomes. According to the study findings of De & Endow (2008), while there has been significant evidence of improvement in terms of access to primary education due to increased public spending in India's less developed states, the retention rate is high and overall learning outcomes are very low. A World Bank study conducted by Raikumar & Swaroop (2002) discovered that merely increasing public spending is less likely to result in improved educational outcomes if countries have weak governance. Interestingly, per capita GDP appears to have a greater influence on primary school attainment. Slightly in a similar vein, according to Alcott & Rose (2017), the family's socioeconomic condition was the major factor for learning disparity in primary education in India.

However, a study by Gupta *et al.* (2002) found that increased public spending on primary education would result in an increase in enrolment, more demand for primary education, and, as a result, improved children's performance. Tilak (1995) was also quite optimistic about primary education spending in India, stating that the country's primary education crisis would not have occurred if public spending had been as liberal as it was during the early plan periods. Similarly, some other studies (e.g., Wijsman *et al.*, 2016; Carsamer, 2015) have also found a positive effect of public spending on students' performance and school enrolment/transition rate. Using longitudinal data from 1970 to 2010, Jackson *et al* (2016) in the United States of America estimated the long-term effects of public spending on school education and discovered that a 10 per cent increase in per-pupil spending results in 0.31 more completed years of education, approximately 7 per cent higher wages, and a 3.2 percentage point reduction in the annual incidence of adult poverty. The effects are much more pronounced for children from low-income families.

Although the majority of the studies included in this paper indicated a positive relationship between public spending and primary school education outcomes, the link between public education spending and measurable outcomes provides mixed evidence, especially in lower-middle-income countries. Therefore, in India, the effect of public spending on primary education requires a thorough re-examination.

Data and Methods

To address the research questions set above, the primary level of school education transition rate[3] (primary to upper primary level) is considered a performance indicator as it determines the real outcome of the school education (Roser, 2018; Raikumar & Swaroop, 2002). As classified by the District Information System for Education (DISE), the level of education from I-V is also considered "primary education" in this study (GoI, 2018-19). While, as defined by the World Bank (2020), government expenditure on primary education (public and private schools) is also considered "public financing/spending/expenditure" in this paper.

The present study depends solely upon the secondary data, collected from different sources, viz. 1) the Reserve Bank of India, 2) the Annual Status of Education Report (ASER) published by the Pratham Education Foundation, 3) reports on the Analysis of Budgeted Expenditure on Education published by the Ministry of Human Resource Development, and 4) the Elementary State Report Card (U-DISE) maintained by the National University of Educational Planning and Administration. The income and investment-related data used in this paper were obtained from the first and third sources mentioned above. Further, performance-related data such as enrolment, primary to upper primary level pass-out/transition rate, public and private school arithmetic, and reading ability statistics were collected from the second and fourth sources listed above.

To maintain consistency and parity, most of the data (not all) included in this study have been converted into ratios, percentages and shares. The study uses longitudinal data, covering a period from 2007 to 2016, and the variables of interest for 28 states[4] of India. The study period and states were chosen on the basis of the availability of consistent and accurate data. Because of the uniform and consistent data constraints, the "plan and non-plan expenditure on elementary education" as a percentage of overall education expenditure (revenue account) is proxied as "public expenditure" on primary education in this study. The first and second research questions were answered using regression estimates generated by E-views 12 and STATA 11.2 software, whereas the third research question was answered using descriptive statistics.

As the dataset incorporates 28 states and 10-year periods, a panel regression model seems to be more suitable (Novignon *et al.*, 2012). The model formulated for the purpose is as follows:

$$TR_{jt} = \delta Z_{jt} + \qquad (1)$$

$$\varepsilon_t = \partial Q + \mu \qquad (2)$$

Here, TR_{jt} is the outcome variable (i.e., the transition rate from primary or fifth standard to the upper primary or sixth standard of school education) in the j^{th} state of India for the

3 The transition rate is the number of students admitted to the next higher level of education in a given year, divided by the number of students in the final grade of the lower level of education in the previous year.

4 These states are Bihar, Chhattisgarh, Jharkhand, Odisha, West Bengal, Goa, Gujarat, Madhya Pradesh, Maharashtra, Rajasthan, Andhra Pradesh, Karnataka, Tamil Nadu, Kerala, Haryana, Himachal Pradesh, Jammu Kashmir, Punjab, Uttar Pradesh, Uttarakhand, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura.

t^{th} year, where *t* represents the ten-year study period from 2007 to 2016, and *j* represents India's 28 states. On the right-hand side, Z is a vector of explanatory variables and constant, δ is a vector of coefficients, and ε is a vector of error terms. Further, the error term has two components, the time-variant and the remainder error term, as proposed by Baltagi *et al.* (2007). Thus, Q and *∂* denote the spatial weights matrix and the spatial autocorrelation parameter, respectively, while μ represents the remainder error term. For the set of explanatory variables, the panel regression model can be re-formatted as follows:

$$\ln TR_{jt} = \delta_0 + \delta_1 \ln PCI_{jt} + \delta_2 \ln PG_{jt} + \delta_3 \ln EG_{jt} + \delta_4 \ln EP_{jt} + \delta_5 \ln GR_{jt} + T_j + \varepsilon_{jt} \qquad (3)$$

Here PCI, PG, EG, EP and GR imply per capita NSDP, public expenditure on primary education as a percentage of total education expenditure under revenue account, enrolment rate in government primary schools, enrolment rate in private primary schools, and girls' enrolment rate in primary schools, respectively. T_j indicates time or year dummies, δ is the coefficient of the independent variables, and *ln* is the natural logarithm. To successfully convert the relations from a unit-level change to a percentage change (linearise the relations), the variables used in this regression analysis have been converted to natural log forms (*ln*).

Before proceeding to the estimation of the fitted panel regression model, initially, the panel unit root test was conducted to examine if the variables were stationary or not at the level. In particular, we performed the most commonly used panel unit root test, the Levin-Lin-Chu (LLC) test (Levin *et al.*, 2002). The test results are reported in Appendix 1. As per the LLC test results, the study rejects the null hypothesis of the unit root for all variables, barring PG, indicating that the variables under consideration are stationary, and they are used in our regression models in their level forms. The first differencing was performed on the PG variable before proceeding with the regression estimation.

Fixed and random effect estimates may misinterpret the results when the lagged values of endogenous variables are associated with the error term (Greene, 2003). In such instances, the dynamic models are often estimated with instrumental variables and the panel Generalised Method of Moments (GMM) estimator. Based on Arellano & Bond's (1991) concept, panel GMM estimation was used in this paper/study to eliminate heterogeneity and biases produced by lagged dependent variables. Furthermore, their (Arellano & Bond, 1991) technique tests for the hypothesis of no serial correlation, and the standard errors of the estimates are robust to heteroscedasticity.

Further, in the basic macroeconomic theory, expectations form an important basis of economic models of the dynamic process. A useful economic theory for such a purpose is the adaptive expectation hypothesis, which states that individuals form their expectations about the future based on the recent past. Suppose, if we assume (in the context of the present study) that the targeted transition rate from primary to the upper primary level of schooling (TR*) at period t depends upon public spending (PG) is given in the form of the following equation:

$$TR_t^* = \phi_0 + \phi_1 PG_t + \eta_t \qquad (4)$$

Here, ϕ_1 is the ratio of TR as a percentage of PG. Under the assumption that states spend less than this ratio, the goal is to attain the target over time with a pace of adjustment as follows:

$$TR_t - TR_{(t-1)} = \delta [TR_t^* - TR_{(t-1)}]$$

$$\therefore TR_t = (1-\delta) TR_{(t-1)} + \delta TR_t^* \quad (5)$$

Replacing (4) in (5), and solving for TR_t as:

$$TR_t = (1-\delta) TR_{(t-1)} + \delta [\phi_0 + \phi_1 PG_t + \eta_t]$$

$$\therefore TR_t = \delta \phi_0 + \delta \phi_1 PG_t + \delta \eta_t + (1-\delta) TR_{(t-1)} \quad (6)$$

By considering $\delta\phi_0$ as β_0, $\delta\phi_1$ as β_1, and $(1-\delta)$ as β_2, the equation (3) can be written as:

$$TR_t = \beta_0 + \beta_1 PG_t + \beta_2 TR_{(t-1)} + \varepsilon_t \quad (7)$$

Equation (7) is a dynamic panel model. By including other control variables, it can be re-formulated as follows:

$$\ln TR_{jt} = \beta_0 + \beta_1 \ln PG_{jt} + \beta_2 \ln TR_{j(t-1)} + \sum_i \beta_i \ln Z_{ijt} + T_j + \varepsilon_{jt} \quad (8)$$

Here, Z is a vector of control variables such as PCI, EG, EP and GR; $i = 3,4,5,6$. TR is the transition rate from primary to upper primary level, PG is the public spending, T_j represents time/year dummies, and ε represents δη. From equation (8), we can arrive at the elasticity figure as $\beta_1/(1-\beta_2)$. Here, elasticity signifies the target of PG, which should be spent for the transition rate. Before proceeding to GMM, a panel unit root test and endogeneity test were performed, and the results are reported in Appendices 1 and 2.

Effects of Public Spending and Factors Affecting Primary Education

Before proceeding with the econometric (regression) analysis to determine the efficacy of public spending on primary education performance, Table 1 provides summary statistics for the variables of interest included in the regression analysis.

The mean value of per capita NSDP at 2004-05 constant prices (PCI) is INR 64432.50 for the 10 years of the study period from 2007-08 to 2016-17. During the same reference period, the transition rate (TR) of students from the primary to the upper primary level on average was 90.13 per cent. Plan and non-plan expenditure on primary education as a percentage of total education expenditure under revenue account (PG) was accounted as 49.37 per cent. Across the 28 states under consideration, the mean enrolment rate in government primary schools (EG) was 79.20, while it was 20.80 in private primary schools (EP) during the period under consideration. The girls' enrolment rate (GR) in primary education was 49.56 per cent on average across the states.

TABLE 1
Summary Statistics

Variables	*Unit*	*Mean*	*SD*	*Min*	*Max*
TR	Percentage	90.13	7.90	61.50	100.00
PCI	INR	64432.50	45539.12	9070.00	305875.00
PG	Percentage	49.37	33.01	0.03	98.40
EG	Percentage	79.20	18.07	29.17	100.00
EP	Percentage	20.80	18.07	0.02	70.80
GR	Percentage	49.56	2.40	39.42	61.10

Sources: Authors' estimation from GoI (2014; 2018); RBI (2020); MHRD (2000-20); SRC (2000-17)

The Hausman test confirmed that the Random Effect Estimate (REE) values were appropriate for the fitted regression (Equation 3), and the results are consistent with the pooled OLS regression (PLS) results. The REE and PLS regression findings are shown in Table 2, Models I (with time dummy) and II (without time dummy). The PLS results show that public spending (PG), NSDP per capita (PCI), and enrolment rate in private primary schools (EP) all have a positive and statistically significant impact on the transition rate (TR). Thus, controlling for other factors, a percentage increase in PG was associated with a 0.03 per cent increase in TR. Normally, greater public expenditure towards schooling in terms of improvement of infrastructure, manpower, and quality education might have translated into better educational outcomes and higher transition rates (Murtin, 2013; Chapman *et al.*, 2005).

TABLE 2
Determinants of Transition Rate (TR) from Primary to Upper Primary

Models	*I*		*II*		*III*	*IV*
Variables/ Constant	*PLS*	*REE*	*PLS*	*REE*	*GMM*	*GMM*
lnΔPG	0.047**	0.034***	0.047***	0.034***	0.033**	0.143**
	(0.016)	(0.012)	(0.016)	(0.012)	(0.012)	(0.056)
lnPCI	0.002**	0.023**	0.011**	0.008**	0.007**	0.015**
	(0.048)	(0.035)	(0.026)	(0.014)	(0.011)	(0.027)
$lnTR_{(t-1)}$					0.267***	0.263***
					(0.031)	(0.042)
lnEG	0.001	0.033	0.001	0.037	0.019	0.038
	(0.021)	(0.038)	(0.021)	(0.039)	(0.068)	(0.07)
lnEP	0.021***	0.020***	0.021***	0.019**	0.015**	0.013**
	(0.006)	(0.007)	(0.006)	(0.007)	(0.006)	(0.005)
lnGR	0.038	0.111	0.025	0.025	0.006	0.039
	(0.076)	(0.083)	(0.073)	(0.077)	(0.060)	(0.081)
T	Yes	Yes	No	No	No	Yes
Constant	4.67***	4.68***	4.69***	4.62***		
	(0.469)	(0.362)	(0.326)	(0.349)		

Cont...

Diagnostics Test						
F	0.47***		12.81***		26.81***	37.07***
Wald χ2		80.05***		52.74***		
R^2	0.21	0.20	0.19	0.18		
BP/CW Test χ2 (1)	10.99***		7.64**			
Mean VIF	2.51		1.46			
Hausman Test χ2		0.70		0.80		
Ni					12	20
Ng					28	28
AR (2) p > Z					0.120	0.221
Sargan Test χ2(6)					17.56 [0.11]	7.44 [0.282]
Hansan Test χ2(6)					11.29 [0.12]	9.98 [0.126]
N	**252**	**252**	**252**	**252**	**224**	**224**

Sources: Authors' estimation from GoI (2014; 2018); RBI (2020); MHRD (2000-20); SRC (2000-17)

Notes: *** $p < 0.00$; ** $p < 0.05$; * $p < 0.10$; T stands for Year Dummy; Ni stands for Number of Instruments; Ng stands for Number of Group; Robust SE values are given in ( ); p values are reflected in [ ]; $TR_{(t-1)}$ represents the lagged value of the transition rate; PLS stands for Pooled Ordinary Least Square; REE stands for Random Effect Estimates; BP/CW stands for Breusch-Pagan/Cook-Weisberg; VIF stands for Variance Inflation Factors; R^2 reported for REE is the overall R^2; AR stands for Auto Regressive process.

Similarly, a one per cent increase in PCI was associated with a 0.02 per cent increase in transition rate from primary to upper primary level. It is also quite apparent that an enhanced PCI allows people to prioritise their quality of life through a stronger emphasis on educational upliftment, which may have aided in the transition rate from lower to higher levels of schooling. Studies by Barro (1996), Easterly (1999) and Deininger (2003) also echoed the importance of per capita income on average schooling years. The enrolment rate in private primary schools and the total student enrolment in primary education were also found to be positively significant. Thus, considering other factors constant, a one per cent increase in enrolment rate in private primary schools was associated with a 0.02 per cent increase in transition rate. With rising family incomes, particularly among middle and lower-middle-income families, private school education has become more popular in both urban and rural areas of Indian states over the past three decades, which might have helped in improving the transition rate from primary to upper-primary level.

The estimated regression gives a good fit to the data /model so far as the value of F statistic and R^2 are concerned. The results seem to be free from the problem of multicollinearity as indicated by the values of mean VIF. Given the presence of heteroscedasticity in the data, the heteroscedasticity-consistent robust standard error (SE) is being reported for estimated coefficients of the regression model. (Figures in parentheses are the robust SE given in Table 2.)

In terms of the panel GMM estimates of the fitted regression model, the coefficients of PG, PCI, EP, and $TR_{(t-1)}$ are found to be statistically and positively significant (Table 2, Model III

without time dummy and IV with time dummy). Thus, controlling for other factors, a one per cent change in PG across the 28 Indian states was associated with a 0.033 per cent increase in TR in the short run. Hence, TR and PG exhibit an inelastic relation, implying that increased educational spending is necessary in Indian states. The findings also reveal some intriguing facts, such as the income elasticity of education expenditure appearing to be less than unity. The estimated coefficient of $TR_{(t-1)}$ implies that a one per cent increase in the transition rate in the previous period is associated with a 0.267 per cent increase in the transition rate in the short run. Chang & Kim (2021) found that a good track record of students in previous grades was positively correlated with a high pass-out rate in secondary schooling in Korea. The value of elasticity shows that the government should have a targeted spending of 0.19 per cent of PG towards primary education (model IV). Achieving such a goal may require an increase in budget allocation by the state government towards primary education in India. It seems to be very ambitious given the current level of outlay, and to achieve this, the government needs to prioritise educational spending with structural reform. This is especially crucial since for every one per cent rise in PG, the TR increases by 0.034 per cent. However, regardless of public spending, a one per cent increase in EP was related to a 0.015 per cent increase in TR throughout the 28 Indian states in the short run. Josephine (1999) also argued that greater enrolment in private schools was associated with higher responsibility and accountability of those schools for students, translating into better educational outcomes and pass percentages than those of government and aided schools in Mysore. The results were found to be consistent across models in the current study as well after the inclusion of the year dummies. However, the country's modest increase in primary school education appears to be related to private school enrolment and outcomes.

The diagnostics test results of GMM suggest the robustness of the results from serial correlation. The selection of the instrument is appropriate as indicated by the Sargan statistic test results in this study. Further, the *AR*(*2*) result suggests that there is no second-order serial correlation, which implies that the lags of the dependent variable used as instruments are not endogenous (refer to Table 2). In a nutshell, the present estimated results are free from the problems of endogeneity (refer to Appendix 2).

Socio-Economic Status and Private Education Growth

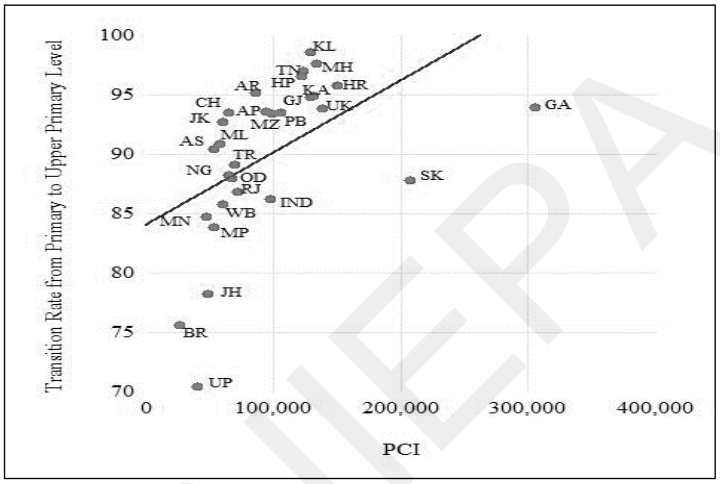
As stated above, what has caused a significant increase in enrolment and demand for private schools in recent decades necessitates further examination. According to Micklewright (1999), a considerable increase in the share of private sector expenditure in education in most countries in recent years, with households in higher income groups increasingly shifting their focus towards private schooling with the anticipation of better learning for their wards. Without a doubt, public investment plays a critical role in the development of the education sector, particularly at the school level. However, merely increasing public investment without good policies and robust socioeconomic foundations, in addition to physical infrastructure, is worthless for inclusive and long-term primary education growth.

Figure 1 depicts the relationship between per capita NSDP and the transition rate from primary to upper primary schooling in 28 selected Indian states (2026-17). States with low NSDP per capita, such as Bihar, Uttar Pradesh, Madhya Pradesh, and Jharkhand, have a lower transition rate from the primary to the upper primary level. However, the transition rate from primary to upper primary schooling is higher in states with high NSDP per capita (PCI), such

as Punjab, Gujarat, Uttarakhand, Karnataka, Himachal Pradesh, Tamil Nadu, Haryana, Maharashtra, Kerala, Sikkim, and Goa. From this graph, we can infer that primary education performance or transition rate is connected with economically better-off states and vice versa. The graph also shows that a large number of states are found to be above the country's mean transition line, and the transition rate is rising at a quicker rate as the mean transition line progresses along the wealthier states.

FIGURE 1

PCI and TR among Indian States (2016-17)



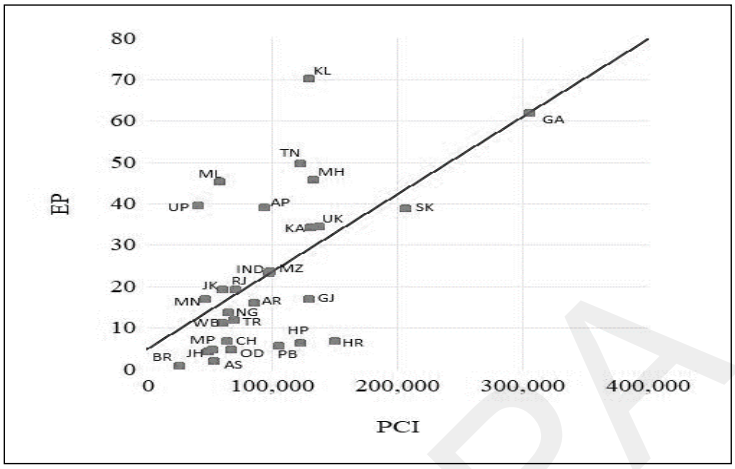
Sources: RBI (2020); MHRD (2000-20); SRC (2000-17)

Notes: Bihar (BR), Chhattisgarh (CH), Jharkhand (JH), Odisha (OD), West Bengal (WB), Goa (GA), Gujarat (GJ), Madhya Pradesh (MP), Maharashtra (MH), Rajasthan (RJ), Andhra Pradesh (AP), Karnataka (KA), Kerala (KL), Tamil Nadu (TN), Haryana (HR), Himachal Pradesh (HP), Jammu Kashmir (JK), Punjab (PB), Uttar Pradesh (UP), Uttarakhand (UK), Arunachal Pradesh (AR), Assam (AS), Manipur (MN), Meghalaya (ML), Mizoram (MZ), Nagaland (NG), Sikkim (SK), Tripura (TR), India (IND).

Figure 2 exhibits the association between PCI and private school enrolment rates in 28 Indian states in 2016-17. States with low PCI, such as Bihar, Jharkhand, Assam, Odisha, Chhattisgarh, West Bengal, Tripura, Nagaland, Arunachal Pradesh, and Manipur, have low enrolment rates in private schools. However, high enrolment rates in private schools are observed in states with higher per capita NSDP, such as Kerala, Tamil Nadu, Maharashtra, Uttarakhand, Karnataka, Sikkim, and Goa. Some states, such as Uttar Pradesh, Meghalaya, and Andhra Pradesh, have a greater enrolment rate in private schools, despite the fact that their per capita incomes are lower than those of the country's wealthier states.

FIGURE 2

PCI and Private School Enrolment Rate (2016-17)

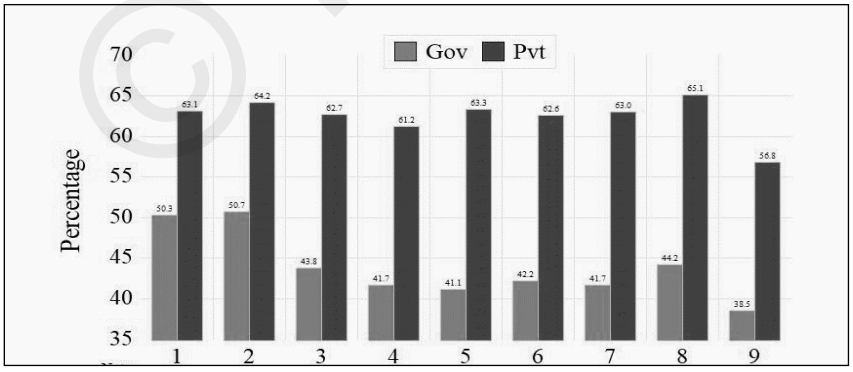


Sources: RBI (2020); MHRD (2000-20); SRC (2000-17)

According to Adamson (2016), private school education is a market-based competition approach that enhances marketable and measurable educational outcomes, which are then acquired by the highest bidder. Though public investment in primary education has gradually increased, the enrolment rate in private schools has skyrocketed as people's incomes have risen, as have quantifiable education learning outcomes in private schools. Figure 3 depicts the reading proficiency of primary school children in rural India from 2009 to 2022.

FIGURE 3

Percentage of Std V Students who can read Std II Level Text (Rural India)



Source: ASER Report (2009-2022)

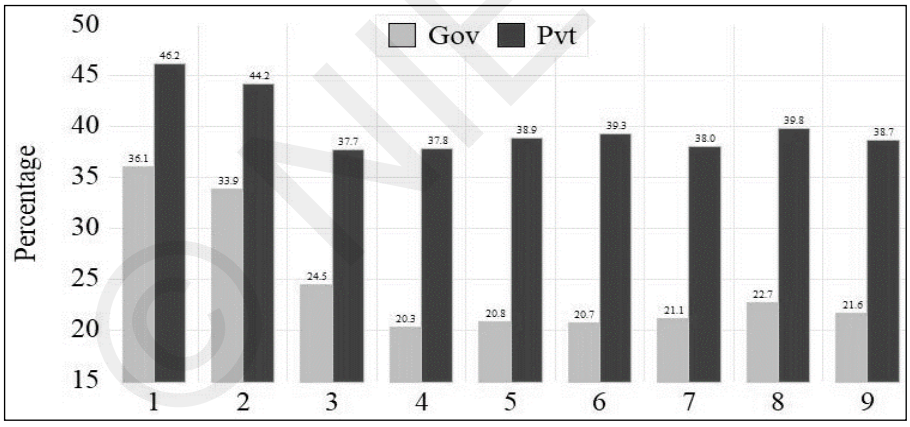
Notes: 1,2,3,4,5,6,7,8,9 stand for 2009, 2010, 2011, 2012, 2013, 2014, 2016, 2018, and 2022, respectively.

Private school students have consistently outperformed their government school counterparts in rural India. In 2009, the percentage of standard V children with standard II level text reading competency was 50.3 per cent in government schools, compared to 63.1 per cent in private schools. In 2018, it increased to 65.1 per cent for private schools compared to 44.2 for public. Though text reading proficiency has slightly declined in both government and private schools, most likely due to COVID-19, standard V students in private schools had higher text reading proficiency in 2022, with 56.8 per cent compared to 38.5 per cent in government schools.

Figure 4 displays the percentage of children in standard V who have arithmetic proficiency (who can do "division" exercises in this context) in both government and private schools in rural India. Students in private schools have consistently outperformed those in government schools. In 2009, 36.1 per cent of standard V children in government schools were proficient in doing standard II division, compared to 46.2 per cent in private schools. Though there was a slight drop in arithmetic proficiency among students in both government and private schools in 2010, the performance of the private schools has been consistently rising throughout the study period after 2010, and on average, it is around 39-40 per cent, whereas the public school lingers around at 20-21-22 per cent.

FIGURE 4

Percentage of Std V who can do Std II level division (rural India)



Source: ASER Report (2009-2022)
Notes: 1,2,3,4,5,6,7,8,9 stand for 2009, 2010, 2011, 2012, 2013, 2014, 2016, 2018, and 2022, respectively.

Conclusion and Recommendations

For a long time, public funding for education, particularly at the primary level, has been a matter of concern in India. Of course, the government of India has recently made its utmost effort to increase public expenditure on school education. As a result, public spending on primary school education in India has been increasing in recent years, albeit slowly. When examined across the states, the economically weaker states, as measured by PCI, have begun

to increase public spending on primary education. However, performance as measured by the transition rate appears to be contradictory, meaning that economically poorer states that spend more perform poorer than wealthy ones, and vice versa. It is most likely because their performance levels were far below that of the better-off states until recently. Therefore, they should continue to invest and enhance the investment rate even if the education outcomes are unsatisfactory in the short term.

When we examine the impact of public funding, there is no doubt that it promotes long-term inclusive and equitable growth in education, particularly in primary school. As revealed by the regression results, the degree of private school enrolment has a positive association with the overall transition rate. Private school performance appeared to be improving faster than public schools, at least in terms of measurable and marketable outcomes. This has a negative impact on low-income families since wealthier children have migrated (and/or new enrolments, mainly from the economically better-off families, go to the private schools) to private schools, causing the public-funded schools to diseconomies of scale. With the rapid rise in private school performance outcomes, coupled with the improvement of household socioeconomic conditions, families prefer to enrol their children in private schools, which increases the number of private schools and the competition among these schools to market their educational performance outcomes.

As public spending strives to promote equity education, greater emphasis on strengthening and investing in government schools is expected to increase enrolment and improve educational performance for sections of society who are excluded by private education/investment. As stated in the literature review and the final section of the study, more emphasis must be placed on enhancing teacher quality and institutional accountability. Given the lack of trustworthy data on multiple inputs, one of the limitations of the current study is that it focuses on a small number of confounding factors influencing transition rates among pupils in Indian school-level education. Furthermore, because of a lack of up-to-date data, this study is unable to draw a conclusion regarding the current state of primary education performance in India.

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APPENDIX 1

Panel Unit Root Test

Test	***LLC Test***	
Variables in the Test Equation	*Intercept Only*	*Intercept & Trend*
lnTR	-9.78 (0.000)	-8.03 (0.000)
lnPCI	-6.80 (0.000)	-2.12 (0.020)
lnPG	3.4e+14 (1.000)	2.0e+14 (1.000)
lnEG	-6.46 (0.000)	-6.46 (0.000)
lnEG	-12.96 (0.000)	-8.42 (0.000)
lnGR	-1.92 (0.028)	0.088 (0.535)

Source: Authors' estimation from GoI (2014; 2018); RBI (2020); MHRD (2000-20); SRC (2000-17)
Notes: Figures in parentheses are the corresponding p-values of the estimates.

APPENDIX 2

Test of Endogeneity

	GMM	
Diagnostics Test	*Model III*	*Model IV*
Durbin score $\chi 2(1)$	0.042 [0.838]	0.031 [0.861]
Wu-Hausman F	0.41 [0.41]	0.029 [0.866]

Figures in parentheses represent the p-value.

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Sustainable Development Goals and Vocational Skill Policy: India vis-à-vis Global Scenario

Jeebanlata Salam*

Abstract

India has historically lagged in providing Technical Vocational Education and Training (TVET) within school education. Enhancing opportunities for imparting relevant vocational skills to school-going adolescents is crucial. Currently, India is on the brink of a demographic dividend, yet fully harnessing this potential remains a significant challenge. According to a World Bank report (2006), only about 5 per cent of India's workforce aged 20-24 are formally skilled, compared to 60-90 per cent in developed countries. By global standards, India is falling short of the Sustainable Development Goals (SDGs). Global experiences indicate that countries with a highly skilled labour force prioritise integrating vocational skill education and vocational career guidance into the regular school curriculum. The work-related based training or vocational education within general educational structure not only reduces dropout rates among vulnerable students but also enhances future career pathways and employment opportunities, fostering inclusive growth and sustainable livelihoods. In India, dropout rates are high at secondary-level, a crucial stage for preparing for higher education or/ and the world of work. Aligning school education with effective vocational skill development programme is vital for addressing dropout challenges among disadvantaged students. It equips the adolescent youth with workforce-ready skills, enhances employability, fosters inclusive growth, and promotes sustainable livelihoods. This approach also plays a pivotal role in supporting the nation's socio-economic development. By 2030, India must expand access to quality education, foster lifelong learning, equip young students with vocational skills and align with global standards to achieve the SDGs. By effectively leveraging India's extensive education system, India can significantly expand the reach of TVET programme, align with global standards, and make significant progress toward achieving SDG goals. This also ensures that India fully prepares to reap its demographic dividend while driving inclusive and sustainable growth.

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The Brundtland Report, published by the World Commission on Environment and Development, defines sustainable development as a framework that meets the needs of the present without jeopardising the ability of future generations to meet their own needs. The report highlights sustainable development as the intersection of three core objectives — environmental protection, economic growth, and social equity (United Nations, 1987). This concept laid the foundation for the Sustainable Development Goals (SDGs), framing sustainable development as a key global policy. Among the SDGs, Goal 4 focusses on ensuring technical and vocational education and training (TVET) or vocational education and training (VET) or vocational education, with an emphasis on equipping adolescent students with the knowledge and practical skills needed for employment in the job market and social inclusion.

UNESCO defines Technical and Vocational Education and Training (TVET) as encompassing education, training, and skills development across a broad spectrum of occupational fields, including production, services, and livelihoods TVET refers to the aspects of education that go beyond general academic instruction to include the study of technologies, related sciences, and the acquisition of practical skills, attitudes, and knowledge relevant to various occupations in economic and social sectors (UNESCO, 2016) This makes TVET a critical bridge between education and the world of work, and an integral part of lifelong learning. In the context of school education, TVET represents a diversified curriculum that combines both vocational and academic content. This curriculum covers a wide range of skill areas such as ICT, electronics, electrical work, craftsmanship, technical labour, agriculture, banking and insurance, food processing, healthcare, beauty and wellness, paramedical services, media and entertainment, tourism, green jobs, and other emerging sectors driven by the service economy. The goal of vocational education (TVET) is to facilitate quick entry into the labour market as a skilled workforce, supporting sustainable livelihoods and promoting economic self-reliance. Most countries, particularly industrialised ones, recognise the importance of technical and vocational education and training (TVET) and its integration with academic curricula. Many of these countries adopt a dual system of education, allowing students at an early age to choose and pursue specific courses and career paths in various fields (Dyanako, 1996).

India is among 196 countries that adopted SDGs at the UN General Assembly. There are altogether 17 SDGs addressing economic, social, and environmental dimensions. These SDGs are indivisible in nature and interrelated. By 2030, member countries are expected to achieve greater access to quality education, promote lifelong learning opportunities, and foster equity, all of which are crucial to sustainable development and reducing global inequalities.

India, having played an important role in shaping the SDG agenda, is expected to play an active role in their effective implementation. The UN identified an indicative set of 232 distinct global indicators for monitoring the SDGs. In this direction, the Government of India, under the Ministry of Statistics and Programme Implementation, developed a National Indicator Framework (NIF) comprising about 300 national indicators of the performance and progress on the SDGs both at the national and state levels.

The 2030 Agenda, among others, underlined the need for inclusive quality education, which is comprehensively addressed under Goal No. 4 of SDGs. The agenda asserts that providing quality education for all is fundamental to creating a peaceful and prosperous world. It is education that ensures people get the knowledge and desired skills needed to get employment, stay healthy, and foster tolerance for all. Crucial to the provisioning of TVET, the agenda of SDG goal 4 has the following salient features achievable by 2030:

- Target 4.3: Ensure equal access to affordable and quality technical, vocational, and tertiary education, including university education for all women and men.
- Target 4.4: Substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.
- Target 4.5: End gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples, and children in vulnerable situations.
- Target 4.7: Ensure that all learners acquire the knowledge and skills needed to promote sustainable development through education for sustainable development and lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development.

India's new National Education Policy (NEP) 2020 reaffirms its commitment to quality, inclusive education, and technical and vocational education and training (TVET). Unlike previous policies, NEP 2020 emphasises integrating vocational education at all levels, aiming to transform the skills landscape and align with Sustainable Development Goals (SDG) 2030. A key goal is to have 50 per cent of secondary students' exposure to vocational education by 2025, reducing divisions between academic and vocational streams. The policy encourages state schools to adopt a hub-and-spoke model, integrating skill labs to enhance youth employability. The chapter "Re-imagining Vocational Education" underscores its critical role in sustainable livelihoods (Government of India, 2020). The policy recognises that one vital role of formal education is to impart gainful skills to enable students earn decent income for sustainable livelihood when they enter adulthood. Along with this chapter, several parts of the policy also refer to vocational education. NEP 2020, in line with the SDG 2030 agenda, has committed to significantly expand TVET to promote livelihoods and social justice for all through quality lifelong learning opportunities.

The NEP 2020 pays considerable attention to vocational programme integration in all educational institutions such as schools, colleges, and universities to bring a sea change in skill landscape and help leverage its multiple benefits to individuals and society. The salient provisions of NEP 2020 on TVET provisioning are delineated below:

- 50 per cent of secondary students to have exposure to vocational education and to be achieved by 2025. Hence NEP 2020, surpassing targets of previous policies, promotes a broad-based liberal education at school and higher levels, integrating vocational subjects to minimise rigid separations between academic and vocational streams, thus fostering equal learning opportunities
- The NEP promotes a broad based liberal education at school level and continues to higher education, while allowing students access to vocational subjects; thereby reducing hierarchies among different areas of learning opportunities at all levels.
- The NEP emphasises the incorporation of physical education, arts, crafts, and vocational skills throughout the school curriculum. For students in Grades 6-8, the policy introduces engaging vocational courses designed to provide hands-on experience in crafts relevant to local community needs and demands. This approach

aims to strengthen students' connection to their communities and equip them to address local challenges.

- The NEP supports secondary students of Grades 9-12 to take up at least one vocational course covering NSQF levels (1-4).
- The NEP also recommended that all students participate in a 10-days bagless period during which the students intern with local vocational expert.
- To support the effective implementation of vocational education, the NEP proposes hiring local experts as master instructors through short-term training programme.
- The policy promotes integration of vocational education into secondary schools in phases, with collaborations involving ITIs, polytechnics, and local industries. Higher education institutions are also expected to offer vocational courses independently or in partnership with industries and NGOs.
- Under the NEP 2020 framework, higher education institutions are encouraged to offer vocational education either independently or in collaboration with industries, NGOs, and other relevant stakeholders. This initiative aims to dispel the misconception that vocational education is inferior to traditional academic education or is only suited for students with lower academic performance. By integrating vocational training into higher education, the policy seeks to promote its value as an essential component of skill development and career readiness, thereby fostering a more inclusive and equitable education system.
- Additionally, short-term certificate courses, including training in soft skills, will be conducted to enhance employability. These measures collectively aim to bridge the gap between academic education and practical skills, preparing students for diverse career pathways.

The NEP 2020, with its ambitious goal of providing quality vocational education to 50 per cent of India's secondary learners, emphasises the integration of vocational programme in state schools. To achieve this, the policy directs the establishment of skill labs using a hub-and-spoke model, aimed at enhancing skill development and creating employment opportunities for adolescent skilling and employment opportunity of adolescent youth.

Global Scenario & India

Industrialised countries such as Germany, Australia, Switzerland, Finland, Austria, Denmark, Norway, Japan, South Korea, Singapore, Japan, China and so on supported vocational education at the school level on a large scale since the 1970s. These countries have different types of vocational education systems at the school level, for example, Germany has dual system of vocational education that encompasses school education with apprenticeship training (Hoffman and Schwartz, 2015), Singapore's success story of 'experiential learning programme' (Tucker, 2012), China's model 'factories in schools' or 'schools in factories' (Ministry of Education, People's Republic of China, 2019) etc. What's more, in these countries with high skilled labour force, there is substantial convergence of vocational skill education component with regular curriculum in schools and serve multiple purposes — prevention of student dropout tendencies, student exposure to holistic career guidance programme, career

goal setting, readiness for school-to-work transition and so on. Studies by Rumberger (1987); Spence (1986); Pittman (1991); Dynarski, *et al* (2008) found that successful prevention of student dropout resulted from a mix of academic and vocational programmes and inspire learners to experiential learning method.

This is a significant observation especially for students of higher grades whose dropout tendency increases. For example, India registers high student dropout rate, particularly at secondary stages. The data from the Unified District Information System (UDISE), NIEPA, Ministry of Education, Government of India reveal that the gross enrolment rates at the primary level during 2018-19 and 2020-21 were 101.3 per cent and 103.3 per cent respectively. During the same period, the corresponding figures for upper primary level were 87.4 per cent and 92.3 per cent while these figures were 76.9 per cent and 79.8 per cent for secondary grade and 50.14 per cent and 53.8 per cent for higher secondary grade. The data trend depicts low transition as students enter higher grades, and disproportionate dropout rates at the secondary and higher secondary stages.

Adolescent students dropping out of school often occurs after they have successfully gained access, but leaving school mid-way limits their future employment opportunities. Without further education or skill training, most dropouts face challenges securing steady work and a decent income. This challenge is heightened by the evolving economy, where technology and changing job structures demand adaptable skills. In India, secondary education shows a particularly high dropout rate, a critical stage for preparing students for higher education or employment. Connecting these at-risk students to career-oriented programme, vocational courses, and school-to-work opportunities could help them stay in school longer and improve sustainable livelihood opportunities. Research supports the potential of vocational education at the school level to improve student outcomes. For instance, Pavlova and Maclean (2013) highlight that vocationalisation enhances social inclusion for disadvantaged groups by reducing educational gaps. Vocational education is also seen as an effective means to integrate economically marginalised groups into the mainstream, as noted by Weisberg (1983). Lills and Hogan (1983) maintain that vocational education aims to alleviate unemployment by transmitting skills and attitudes useful in employment. According to Tilak (2007), vocational education promotes equity with a rural slant and serves the need of the relatively poor. Vocationalisation of school education promotes unity of theoretical knowledge with practical skills, promotes rural socio-economic prosperity, and reduces the spectre of youth unemployment. Lauglo (2005) suggests that countries with democratic policies often include vocational training in schools to promote social inclusion and reduce class divide.

Status of Provisioning of TVET at School Level: International Perspectives

Countries with successful vocational education programme utilise a dual system that integrates school-based and work-based learning through strong industry partnerships. In these nations, policies promote collaboration between industries, skill providers, and schools, ensuring vocational training is both practical and effective. In most of these countries, the government doles out favourable schemes and policies for school going adolescent youth. For instance, over 90 per cent of students in China's secondary vocational schools receive

tuition exemptions, which increases enrolment and builds a skilled labour force (Yuan & Wang, 2021). China's success stems from integrated industry-school partnerships, collaboration with international vocational providers, and a disciplined, skilled teaching workforce. Similarly, Mexico's vocational system draws heavily from Germany's dual approach, combining employer-based training with school education (Vogelsang *et al*, 2022). A key feature across these models is industry involvement, from training provision and costs to placement and employment opportunities. Additionally, direct pathways from vocational programme to higher education support student career progression. Japan exemplifies this with 98 per cent of upper secondary students in vocational tracks having direct access to tertiary education (OECD, 2020), setting a high standard for vocational programme effectiveness.

In South Asia, including India, vocational education receives lower priority compared to the emphasis on preparing students for higher general education. This creates a clear divide between vocational and general education streams. Many South Asian countries face challenges in implementing effective vocational policies, struggling to turn plans into practical outcomes. Table 1 shows the enrolment percentages in vocational education at the secondary level across developed and South Asian countries from 2016 to 2020, highlighting the significant gaps. Developed countries consistently outperform South Asian countries in vocational enrolment. For instance, Finland had 47.8 per cent of secondary students in vocational programme in 2016, slightly declining to 43.1 per cent by 2020. In South Asia, the Maldives leads in vocational enrolment, while Nepal had the lowest percentage throughout 2017–2020. Data also shows slight increase in vocational enrolment in Bangladesh, Bhutan, Pakistan and Nepal from 2016 to 2020, with India's rate growing by only 1.8 per cent during this period.

Figure1 depicts countries classified by level of student enrolment in vocational education. As is evident from Figure 1, South Asian countries have very low level of enrolment in vocational education at the secondary level. In contrast, Australia, Austria, China, Finland, Germany, Mexico, and Switzerland have high enrolment rate at more than 10 per cent. Additionally, it is noteworthy that countries with higher vocational enrolment rates also tend to promote and exhibit increased completion rates at the lower secondary education level. For example, in 2019, the secondary completion rates were 97.7 per cent in Austria, 95.6 per cent in Switzerland, and 90.7 per cent in Mexico.

TABLE 1

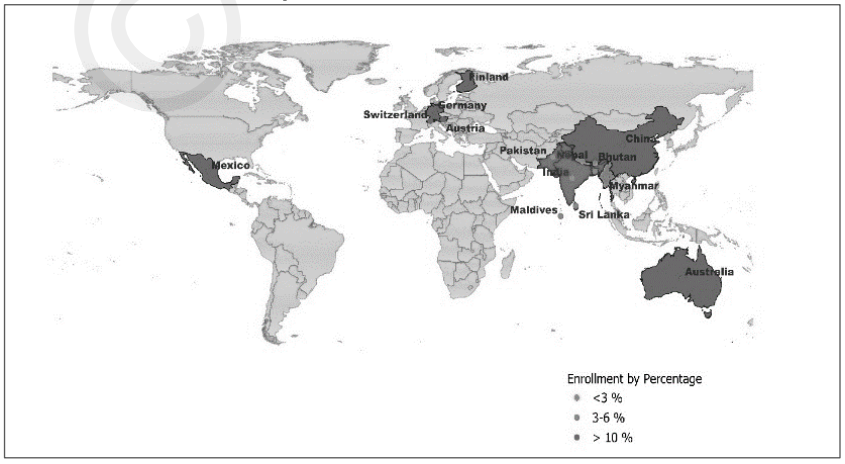
Share of All Students in Secondary Education Enrolled in Vocational Programme (2016-2020)

Country	*2016*	*2017*	*2018*	*2019*	*2020*
Australia	37.3	36.6	28.9	32.6	29.1
Austria	35.1	34.6	34.4	34.8	34.8
Bangladesh	3.9	4.0	4.7	4.0	5.0
Bhutan	1.9	2.0	2.0	..	..
China	19.7	19.1	18.8	18.0	17.8
Finland	47.8	48.1	47.8	44.0	43.1
Germany	19.1	19.1	19.1	19.4	19.4
India	1.3	1.7	1.3	1.3	3.1
Maldives	..	..	10.9	6.3	..
Mexico	27.5	26.7	27.6	28.0	26.7
Nepal	..	0.3	..	1.2	1.9
Pakistan	2.5	2.8	3.3	3.1	..
Sri Lanka	4.2	3.7	3.8	..	..
Switzerland	37.4	37.1	36.8	36.4	36.0

Source: http://data.uis.unesco.org

FIGURE 1

Countries Classified by Level of Enrolments in Vocational Education



Source: Based on Table 1

Status of Provisioning TVET at the School Level in India

India has a vocational and training education system that represents the single most significant area in which educational policy must attempt to make a breakthrough. In this direction, the policy trends and developments clearly reveal renewed commitment to integrate vocational programme in school education. Since the early 1990s, secondary schools (Grades XI and XII) in India have been engaged in the provision of vocational education. Of late, to scale up with speed in skilling youth in India, concerned departments and ministries of the Government of India have taken up programmes such as Pradhan Mantri Kaushal Vikas Yojana; SWADES; Seekho aur Kamao; Jan Shikshan Sansthan; Sankalp; Udaan; School Initiatives and Higher education; Craftsman Training Scheme; Vocational Training programme for Women; vocationalisation of school education, and so on. Some of these programmes and schemes are at the school level and some schemes/programmes are running as informal training schemes. For example, the aim of Jan Shikshan Sansthan scheme is to raise the efficiency, productive ability, and livelihood opportunity of the non/neo literates, school dropout learners and persons having rudimentary level of education up to Grade 8 through improving their occupational skills and technical knowledge.

These efforts have made notable progress in the skilling of workforce. As per the NSDC report (2022), there are 538 NSDC training partners and 10373 training centres offering 1500+ job roles. These training partners and centres are managed by 38 sector skill councils. As informed by the report, these centres trained 20.45 lakhs students, of which 1.86 lakhs students got placement or employed. These are noticeable efforts on the part of the government to build robust skill ecosystem.

These developments could be seen as a response to various socio political, and economic transformations. For example, after economic liberalisation, India's need for skilled workforce began to grow during the mid-1990s and the need for up-skilling its youth population in a variety of sectors including the service sector. During early 2000s, India set ambitious targets to mainly address demographic dividend by skilling 500 million youth by 2022; and address several other challenges including India's unprecedented growth of higher education and the spectre of youth unemployment.

Vocationalisation of school education is a leading initiative aimed at equipping adolescent students with essential and practical skills. This initiative is a part of the comprehensive education scheme, Samagra Shiksha Abhiyan. The aim of the scheme is to prepare educated, employable, and competitive human resources for various sectors of the economy, and global market by integrating vocational education with general academic education, especially at the school level. The vocational education component is available to students from Grade VI to XII. For students in Grades VI to VIII, the scheme provides exposure and orientation to vocational education, aiding them in making informed subject choices when they are transitioned in higher grades. At the secondary level (Grades IX and X), students can study vocational modules as an additional subject. In senior secondary levels (Grades XI and XII), vocational subjects become compulsory electives, ensuring students gain valuable vocational skills alongside their academic education. Table 2 and Table 3 outline optional skill subjects at the secondary level and elective skill subjects at senior secondary levels.

TABLE 2

Skill Subjects Offered at Secondary Levels

Sl. No.	*SUB CODE*	*COURSE NAME*	*JOB ROLES*
1	401	Retail	Store Operations Assistant
2	402	Information Technology	Domestic IT Executive/ Operator
3	403	Security	Unarmed Security Guard
4	404	Automotive	Automotive Service Technician
5	405	Introduction To Financial Markets	Business Correspondent
6	406	Introduction To Tourism	Assistant Tour Guide
7	407	Beauty & Wellness	Assistant Beauty Therapist
8	408	Agriculture	Solanaceous Crop Cultivator
9	409	Food Production	Assistant Chef (reg.)
10	410	Front Office Operations	Front Office Executive
11	411	Banking & Insurance	Field Executive
12	412	Marketing & Sales	Marketing Assistant
13	413	Health Care	General Duty Assistant
14	414	Apparel	Hand Embroider
15	415	Multi Media	Texture Artist
16	416	Multi Skill Foundation course	Multi Skill Assistant
17	417	Artificial Intelligence	
18	418	Physical Activity Trainer	Early Years Physical Activity Facilitator
19	419	Data Science	
20	420	Electronics & Hardware (NEW)	Field Technician – Other Home Appliances
21	421	Foundation Skills for Sciences (Pharmaceutical & Biotechnology) (NEW)	
22	422	Design Thinking & Innovation (NEW)	

Source: https://cbseacademic.nic.in/skill-education.html

TABLE 3

Skill Subjects Offered at Senior Secondary Levels

S. No.	*SUB. CODE*	*NAME*	*JOB ROLES*
1	801	Retail	Sales Associate
2	802	Information Technology	IT Helpdesk Assistant
3	803	Web Application	Web Developer
4	804	Automotive	Automotive Service Technician
5	805	Financial Markets Management	Equity Dealer/ Mutual Fund Agent
6	806	Tourism	Tour Guide
7	807	Beauty & Wellness	Beauty Therapist
8	808	Agriculture	Agriculture Extension Worker
9	809	Food Production	Trainee
10	810	Front Office Operations	Counter Sales Executive
11	811	Banking	Sales Executive (Banking product)
12	812	Marketing	Marketing Executive
13	813	Health Care	General Duty Assistant
14	814	Insurance	Sales Executive (Insurance)
15	816	Horticulture	Floriculturist / Entrepreneur
16	817	Typography & Comp. Application	Executive Assistant
17	818	Geospatial Technology	GIS Operator
18	819	Electrical Technology	Field Technician /Home Appliances
19	820	Electronic Technology	Installation Technician
20	821	Multi-Media	Animator
21	822	Taxation	Asst. Tax Consultant/GST Acc. Asst.
22	823	Cost Accounting	Jr. Accountant
23	824	Office Procedures & Practices	Executive Assistant
24	825	Shorthand (English)	Stenographer
25	826	Shorthand (Hindi)	Stenographer
26	827	Air-conditioning & Refrigeration	Service Technician
27	828	Medical Diagnostics	Medical Lab Technician
28	829	Textile Design	Design Assistant (Apparel/Textile)
29	830	Design	Assistant Designer
30	831	Salesmanship	Sales Executive
31	833	Business Administration	Business Executive

Cont…

32	834	Food Nutrition & Dietetics	Assistant Dietician
33	835	Mass Media Studies	Media Assistant
34	836	Library & Information Science	Library Assistant
35	837	Fashion Studies	Assistant Fashion Designer
36	841	Yoga	Yoga Instructor
37	842	Early Childhood Care & Education	Early Childhood Educator
38	843	Artificial Intelligence	
39	844	Data Science	
40	845	Physical Activity Trainer (NEW)	Primary Years Physical Activity Facilitator
41	846	Land Transportation Associate (NEW)	Land Transportation Associate
42	847	Electronics & Hardware (NEW)	Installation Technician – Computing and Peripherals
43	848	Design Thinking & Innovation (NEW)	

Source: https://cbseacademic.nic.in/skill-education.html

TABLE 4

Status of States with Vocational Education Implemented in School

India/ State/ UT	*Number of secondary and higher secondary schools*	*Number of secondary and sigher secondary schools having vocational courses under NSQF at secondary/higher secondary level*	*Total enrolment under NSQF at secondary/higher secondary level*	*Gross enrolment rate at secondary level*	*Gross enrolment rate at higher secondary level*
India	291466	12292 (4.21%)	1013996 (1.53%)	79.8	53.8
Andaman and Nicobar Islands	121	49 (40.49%)	5781 (26.70%)	78.2	49.9
Andhra Pradesh	15183	476 (3.13%)	40137 (1.78%)	84.2	53.4
Arunachal Pradesh	476	99 (20.79%)	11067 (15.18%)	68.2	41.1
Assam	9823	339 (3.45%)	20249 (1.38%)	75.6	32.3
Bihar	12334	0(0%)	0	63.5	34
Chandigarh	169	28 (16.56%)	4157 (5%)	86.2	57.6
Chhattisgarh	7275	546 (7.50%)	67893 (4.33%)	86.2	57.6
Dadra & Nagar Haveli	99	9 (9.09%)	911 (2.99%)	77.0	45.0
Delhi	2157	347 (16.08%)	72734 (5.48%)	116.3	82.1
Goa	526	121 (23.03%)	5923 (6.65%)	91.1	69.9

Cont…

Gujarat	12709	252 (1.98%)	14386 (0.50%)	78.6	41.8
Haryana	8522	1074 (12.60%)	91587 (5.51%)	95.2	66.8
Himachal Pradesh	4259	953 (22.37%)	42074 (9.60%)	100.4	85.6
Jammu and Kashmir	4405	714 (16.20%)	44782 (7.29%)	59.8	50.1
Jharkhand	4961	440 (8.86%)	25698 (1.50%)	63.0	43.9
Karnataka	21068	203 (0.96%)	9119 (0.29%)	90.6	55.6
Kerala	4921	233 (4.73%)	300 (0.01%)	97.6	84.2
Ladakh	161	28 (17.39%)	1151 (8.49%)	58.7	48.5
Lakshadweep	15	0(0%)	0	77.7	67.6
Madhya Pradesh	17904	1200 (6.70%)	112084 (3.00%)	71.3	45.4
Maharashtra	28505	661 (2.31%)	49395 (0.75%)	92.6	68.2
Manipur	1214	97 (9.99%)	6945 (4.30%)	75.7	61.2
Meghalaya	1827	22 (1.20%)	1413 (0.80%)	84.9	41.1
Mizoram	900	46 (5.11%)	2411 (3.70%)	91.6	54.1
Nagaland	778	26 (3.34%)	1633 (1.83%)	59.7	33.7
Odisha	11969	953 (7.96%)	78336 (3.78%)	84.5	46.4
Puducherry	385	9 (2.33%)	822 (1.07%)	78.9	67.8
Punjab	9653	989 (10.2%)	84826 (4.78%)	109.2	77.8
Rajasthan	31463	905 (2.87%)	98698 (2.16%)	84.8	62.1
Sikkim	266	194 (72.93%)	14581 (36.34%)	90.0	59.5
Tamil Nadu	13891	120 (0.86%)	18695 (0.49%)	92.6	76.5
Telangana	14554	194 (1.33%)	19865 (1.04%)	92.3	61.8
Tripura	1157	135 (11.66%)	4917 (2.81%)	78.9	45.8
Uttar Pradesh	33196	161 (0.481%)	2192 (0.02%)	66.4	48.8
Uttarakhand	3930	0	0	91.5	72.7
West Bengal	10690	669 (6.25%)	59234 (1.22%)	91.2	58.5

Source: UDISE+ (2020-21)

As is indicated by Table 4, out of all secondary and higher secondary schools in India, only 4.21 per cent (12,292 schools) offer vocational courses under the National Skills Qualification Framework (NSQF). Bihar, Uttarakhand, and Lakshadweep have no schools providing such courses, while Sikkim leads with 72.93 per cent of its schools offering NSQF programme. Sixteen states, including Maharashtra, Karnataka, Rajasthan, and Uttar Pradesh, and the union territory of Lakshadweep fall below the national average of 4.21 per cent enrolment in NSQF courses is also alarmingly low, with a national average of just 1.53 per cent. Thirteen states record enrolment below this figure, while Bihar, Uttarakhand, and Lakshadweep have no participation. In contrast, Sikkim achieves a remarkable enrolment rate of 36.34 per cent, significantly surpassing the national average.

Present Study: Aims and Research Questions

This study explores how vocational skill policies can reduce dropouts, enhance employability, and promote sustainable livelihoods for adolescents. The study examined school resources — physical, human, and facilities like labs, career guidance facilities, and specific vocational skills students aim to acquire before completing senior secondary education.

Based on the findings from the broader study, the main research questions guiding the present study are:

- How effective is the provisioning of vocational education (TVET) programmes under the Samagra Shiksha Abhiyan in secondary education?
- What are the aspirations of students regarding vocational skill education before completing secondary education?
- How do teachers perceive the relationship between vocational skill interventions, dropout reduction & employability among secondary students?

Tools and Data Collection

The study was conducted in Koraput and Rayagada districts of Odisha and Goalpara and Barpeta districts of Assam. Predominantly employing a variant of the quantitative survey method, the study also conducted in-depth interviews with 270 teachers and 900 students from 90 government schools in Odisha, and 160 teachers and 800 students from 80 government schools in Assam. The sample focused on adolescent students aged 14–19 in secondary (grades IX–X) and higher secondary (grades XI–XII) levels. Participants included head teachers, class teachers, and students, as indicated in Table 5.

The study explored student vocational aspirations through focus group discussions and in-depth teacher interactions. Teachers' perceptions were analysed regarding vocational guidance availability, its impact on dropout reduction, and student employability. Data collection included absence of vocational programme and policy implementation inputs/challenges from head teachers, vocational interventions, dropout information, and employability perspectives from class teachers, alongside student vocational aspirations. Data was digitised for standardised analysis, with quantitative data coded systematically. All information was analysed using statistical tools to ensure accurate interpretation and comprehensive findings.

TABLE 5

Sample Description of Participants

Districts	*Number of schools*	*Number of head teachers*	*Number of class teachers*	*Number of students*
Koraput	50	50	100	500
Rayagada	40	40	80	400
Goalpara	40	40	40	400
Barpeta	40	40	40	400
Total	**170**	**170**	**260**	**1700**

Source: Primary Survey

TABLE 6

Schools Providing Vocational Courses & Students Aspiring for Vocational Courses before Completion of Grade XII

Districts	*Number of schools*	*Schools providing vocational courses (%)*	*Students aspiring for vocational skills before completion of Grade XII (%)*	*Students who didn't have fulltime exposure to vocational programme (1%)*
Koraput	50	8%	94%	79.2%
Rayagada	40	35%	58%	63.5%
Goalpara	40	20%	82%	80%
Barpeta	40	29%	90.75%	90%

Source: Primary Survey

As depicted in Table 6, the present study underscores high level student aspiration for vocational courses before completing secondary school — 94 per cent in Koraput, followed by 90.75 per cent in Barpeta, 82 per cent in Goalpara and 58 per cent in Rayagada. Despite this strong interest, the study found only a small percentage of sample schools offer such courses: 8 per cent in Koraput, 20 per cent in Goalpara, 29 per cent in Barpeta, and 35 per cent in Rayagada. This suggests that a significant majority of secondary students remain deprived of opportunities to develop skills in various vocational trades. Additionally, the study found that vocational courses provided in the sample schools of Assam are limited to trades such as IT Application, stenography, travel & tourism, and textile design. In Odisha, vocational trades taught in sample schools include plumbing, poultry farming, agriculture, and computer application.

TABLE 7

Student Vocational Aspirations in Various Trades

Trades	*Koraput*	*Rayagada*	*Goalpara*	*Barpeta*
Engineer	5(1.25%)	2(0.5%)	27 (6.75)	1 (0.25%)
Computer skills	11 (2.75%)	71(17.75%)	79 (19.75%)	31 (7.5%)
Laboratory Technician			50 (12.5%)	
Apparel		68 (17%)		
Weaving		12 (3%)		
Handicraft		3 (0.75%)		
Automobile		12 (3%)		
Tailoring	8 (2%)	12 (3%)	18 (4.5%)	83 (20.75%)
Textile	3 (0.75%)	0	44 (11%)	82 (20.5%)
Beauty & Wellness	9 (2.25%)	32 (8%)	26 (6.5%)	44 (10%)
Health Care	3 (0.75%)	7 (1.75%)	4 (1%)	3 (0.75%)

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Agriculture		8(2%)		12 (3%)
Horticulture		3(0.75%)		
ITI/Polytechnique related field	21 (5.25%)	41 (10.25%)	59 (14.75%)	46 (11.5%)
Business			2(0.5)	6 (1.5%)
Dairy Farm			1 (.25) %	3 (0.75%)
Food Production		4(1%)		18 (4.5%)
Fashion designer	1 (0.25%)		4 (1%)	21 (5.25%)
Photography		1 (0.25%)		
Banking				4 (1%)
Front Office Operations	3 (0.75%)	3 (0.75%)	1 (0.25%)	2 (0.5%)
Hotel management			1 (0.25%)	1 (.25%)
Soft Skills			7 (1.75)	
Retail		1 (0.25%)	10 (2.5%)	2 (.5%)
Game designer				1 (.25%)
Poultry				2 (0.5%)
Tourism and travel			8 (2%)	0
Not sure	84%	33.75%	15%	10.75%

Source: Primary Survey

Table 7 highlights the vocational trades and skills that secondary level students aspire to acquire before completing school. The data depicts that students in Assam have identified a wide range of vocational trades and skills compared to students in Odisha. This could reflect differences in awareness, exposure, or local economic/market opportunities influencing student decision for vocational trades aspirations. As is indicated by Table 7, in Assam, students are more aware of various vocational opportunities available locally or regionally, leading to a broader range of identified trades selected by students. In contrast, in Odisha, level of student awareness about emerging skill opportunities in various trades is quite low or shape their vocational aspirations differently. Understanding these aspirations is essential for designing educational programmes that align with students' interests and local economic needs. This alignment can enhance student engagement, making education more relevant and meaningful while improving their prospects for employability and geared towards sustainable livelihoods.

Vocational Skills: High Student Aspirations, Low Institutional Priority

The study reveals a strong student preference for vocational programme across various trades, as highlighted in Tables 6 and 7, indicating the perceived value of vocational education in motivating students to stay in school and acquire skills. Teacher responses noted that integrating vocational education into the curriculum enhances engagement, retention, and socio-economic outcomes. In Odisha, 94 per cent of teachers in Koraput and 85.26 per cent of teachers in Rayagada opined that vocational programmes reduce dropout rates and prepare

students for future career paths. Conversely, in Assam, teachers did not directly link vocational programmes to dropout reduction. However, 80 per cent of teachers in Barpeta and 70 per cent of teachers in Goalpara emphasised the programmes' role in skill development, income generation, and financial security. They also highlighted vocational education's potential to motivate students to complete their education and reduce migration for jobs, thus addressing socio-economic challenges.

Despite the numerous potentials of an effective vocational-school interface, many sample schools were found lacking in TVET implementation. There are several key factors cited by the teaching community. In Koraput district, 100 per cent of teachers identified insufficient funding as the primary barrier, a concern echoed by 50 per cent of teachers in Rayagada district. Funding issues were also prominent in Assam, with 95 per cent of head teachers in Barpeta and 70 per cent of teachers in Goalpara highlighting it as the main obstacle. Additionally, the lack of basic infrastructure to support vocational programmes was noted by 10 per cent of teachers in Rayagada, 80 per cent of teachers in Goalpara and 100 per cent of teachers in Barpeta. Furthermore, a perceived lack of government support was cited by 85 per cent of teachers in Barpeta, 30 per cent in Goalpara, and 35 per cent in Rayagada. These findings suggest that the educational deficiencies and gaps in TVET implementation reflect uneven execution of overarching national education schemes, such as the Samagra Shiksha Abhiyan (SSA).

The Sustainable Development Goal (SDG) 4 emphasises that nations must take necessary steps to provide quality TVET training in a wide range of occupational fields, equipping adolescents with the relevant skills needed for employment and social inclusion. However, as highlighted in this study, while many nations — particularly advanced ones — have made significant strides toward achieving SDG 4 India like several other South Asian countries, faces considerable challenges in meeting various aspects of this goal, especially, in TVET. India's slow progress in SDG attainment, particularly in TVET, is concerning, especially given the low educational participation, accompanied with high dropout rates at the secondary level and the country's vast potential for harnessing its demographic dividend. Furthermore, it can be noted that research by Lall (2022) indicates that the Indian economy is transitioning toward a knowledge-based model, necessitating a new generation of educated and skilled individuals. Additionally, Nobel laureate Amartya Sen (2015) cautioned against the risks of decoupling economic growth from the quality of a healthy and educated workforce.

Suggestive Model of Vocationalisation of School Education in India

Leveraging India's extensive education system is key to expanding the reach and effectiveness of TVET programme. This paper proposes a detailed model that incorporates key elements from some of the successful global educational practices along with best practices from progressive Indian states and skilling policies to accelerate progress toward Sustainable Development Goal (SDG) and align with global standards.

1. Integration of Vocational and Academic Education:
    - Introduce vocational streams in all existing schools to foster flexibility student choice, engagement based on interests, and aptitudes with a focus on innovation and entrepreneurship by incorporating policy initiatives of NITI Aayog — *Atal Innovation Mission, 2016.*
    - Given India's uniquely rich, diverse landscape, geography and bioresources, local skills are bound to be specific and vary among population groups. Reinforce the emphasis on *Lokvidya* of NEP 2020, while seamlessly integrating emerging technologies into TVET to empower students with industry-relevant skills and preparing them effectively for the demands of Industry 4.0 in India
    - Offer a combination of vocational courses and academic subjects to ensure a well-rounded education.
    - Provide flexibility for students to choose their vocational specialisation based on their interests and aptitudes
2. Practical Training and Industry Collaboration:
    - Forge strong partnerships with industries, businesses, and trade associations to develop vocational curriculum that ensures job-market relevance.
    - Incorporate practical training, internships, and apprenticeships to provide hands-on experience and exposure to real-world work environments.
    - Establish vocational training centres equipped with modern facilities, tools, and equipment relevant to the chosen vocational streams.
3. Qualified and Trained Faculty:
    - Develop a robust system for training and certifying vocational teachers to ensure they possess both subject expertise and pedagogical skills.
    - Introduce business, industry, and/or trade sabbatical for vocational teachers to ensure expertise in ever-evolving industry trends and the attendant workforce skills.
    - Provide continuous professional development opportunities for the career advancement of vocational teachers.
    - Facilitate teacher exchange programmes with countries known for their strong vocational education systems.
    - Conduct sensitisation programmes of school key stakeholders such as school management committees and teachers, most of whom are still ill equipped with the know-how of policies of provisioning of vocational education in schools.
4. Career Guidance and Counselling:
    - Integrate comprehensive career guidance and counselling services to help students make informed vocational choices based on their interests, aptitudes, and market demands.
    - Collaborate with vocational experts, career counsellors, and industry professionals to provide personalised guidance and mentorship to students.
    - Organise career fairs, workshops, and vocational exposure programmes to familiarise students with different career paths and industry requirements.

5. Standardised Certification and Recognition:

    - Develop a national certification framework that provides standardised qualifications for vocational skills.
    - Collaborate with industry representatives and professional bodies to design certification standards and ensure their alignment with industry requirements.
    - Establish partnerships with international organisations to ensure the recognition and portability of vocational qualifications beyond national borders.

6. Entrepreneurship and Innovation:

    - Introduce entrepreneurship education as an integral part of vocational programmes, nurturing creativity, problem-solving skills, and business acumen.
    - Encourage students to develop innovative projects and business ideas through mentorship programmes and incubation centres.
    - Foster collaboration between vocational students and startups or small businesses to provide practical exposure to entrepreneurship.

7. Government Support and Funding:

    - Allocate adequate resources, funding, and infrastructure for the development and implementation of vocational education programmes.
    - Create policies that incentivise industries to participate in vocational training initiatives and provide apprenticeship opportunities.
    - Establish regulatory bodies to monitor the quality of vocational education and ensure adherence to standards.

8. Public-Private Partnerships:

    - Foster collaborations between educational institutions, industries, and civil society organisations to leverage expertise and resources.
    - Encourage industries to actively engage in curriculum development, mentorship programmes, and internships to bridge the gap between academia and the job market. Promote corporate social responsibility initiatives that support vocational education, scholarships, and skill development programmes.

Given India's current TVET status within the broader education spectrum — which is far from meeting the SDG goals — India is on the brink of an educational crisis comparable to a tsunami or pandemic. This crisis demands immediate and comprehensive action to address the emergency in Indian education.

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Primary School Closures and Their Impact on Access to Education in Rural Rajasthan

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Abstract

The Right to Education Act is a fundamental right granted by the government, ensuring access to elementary education for all children aged 6 to 14, regardless of caste, creed, region, religion, or gender. Quality education, crucial for societal, economic, and political transformation, is now a key instrument for building an equitable society. In a shift from input-based to output-based educational goals, the government aims to enhance school effectiveness, providing equal opportunities and equitable learning outcomes within the framework of inclusive and quality education aligned with the Sustainable Development Goals (SDG) for education (MHRD, 2017). The school merger policy in Rajasthan, implemented in 2014 on the basis of enrolment and distance norms laid down by the RTE Act of 2009, preceded the national shift from input-based to output-based education policies under the Samagra Shiksha Abhiyan and NEP 2020. A substantial number of schools, i.e., 17,479 (both primary and upper primary) were closed or merged based on enrolments and distance by the end of 2016. This paper analyses the impact of primary school closures on access to schooling facilities for children in remote habitation in rural Rajasthan. Using a mixed methodology based on primary and secondary data collected between September 2021 and August 2022 from 200 affected children in three blocks of Jaipur district, the study reveals that children now have to cover more than 2 to 3 km distance at the primary level due to the closure of nearby schools. Over 48 per cent of students from closed schools moved to private schools due to the increased distance between Adarsh Vidyalaya and their former schools. Adarsh Vidyalaya, established in every gram panchayat, aims to provide quality education but struggles to offer equitable access to children from different social groups residing on the outskirts of villages.

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Introduction

The Government of India's educational policies have prioritised two key objectives: enhancing the overall schooling attainment and bridging the educational disparities among different social and economic groups. The implementation of universal access to elementary education has significantly expanded educational opportunities across the country, ensuring that schools are accessible even in the most remote areas, thereby reducing the distance between schools and local habitations. To strengthen the Sarva Shiksha Abhiyan (SSA), the Right to Education Act 2009 provided access to elementary school within a defined area limiting it to the neighbourhood of the child. Thus, the basic purpose of both the SSA and RTE was to expand the provision of schooling facility all over the country.

Now, the whole paradigm of educational policy has changed from input based to outcome based, where universal access to quality education has become the most important concern for the future of education. The National Education Policy 2020 introduced universal access to education from the pre-primary level to the higher secondary level. The policy introduces a new curricular and pedagogical structure of 5+3+3+4 for continuous and comprehensive learning from the pre-primary to the higher secondary level. The NEP introduced the idea of school complex having one secondary school together with all other primary and upper primary level of schools offering lower grade in its neighbourhood, including *Anganwadis*, within a radius of 5 to 10 km with the purpose of promoting resource efficiency and effective management of schools in the cluster.

However, many state governments formulated their own policies for consolidating schools before the implementation of NEP 2020 and used phrases and terms like 'mainstreaming of children,' 'amalgamation of schools,' 'integration of schools,' 'rationalisation of schools,' 'consolidation of schools,' etc (Rao S. , 2016). Rajasthan implemented a school merger policy in the state in 2016, much before NEP 2020, and around 17,479 primary and upper primary schools were closed down and merged into secondary and higher secondary level schools. The schools were merged based on the enrolment and distance norms. The enrolment requirements dictate that a primary school with less than 15 pupils and an upper primary school with fewer than 30 students may be considered for merger. In addition, neighbourhood criteria based on RTE regulations were to be considered for the merger.

The Case of School Closure in Rajasthan

At the end of the 2014 and 2015 academic sessions, the state government of Rajasthan closed down around 17,479 primary and upper primary schools, while the top-down bureaucrats called the process a 'merger of schools' (Rao,s., 2016). The merger process was carried out in different phases, including school identification and the movement of students, teachers, school equipment, and infrastructure. All processes related to school identification, orders for merging and closure, and the transfer of teachers, students, and furniture from closed schools were managed at the state education secretariat level. The reason for merging the primary and upper primary schools was the declining enrolment in government primary schools, many of which were managed by a single teacher (MHRD, 2017); (SSA, 2018); (GOI, 2020). The government of Rajasthan attributed this decline to the implementation of the RTE Act (MHRD, 2009) and the provision of schooling opportunities within 1 km from the

neighbourhood, resulting in a decrease in enrolment at the elementary level from 130 million to 119 million. Additionally, 16 per cent of all government elementary schools in Rajasthan were single-teacher schools.

Despite the expansion of schools, the quality of education in government schools remains a concern (Adhikari, 2001; (Aggarwal, 2002), (Goyal, 2007) (Vilaskar, 2010), (Tilak, 2011), (Panigrahi, 2016), (Kingdom, 1996). Government of Rajasthan, Department of Education, clearly outlines some basic objectives of the school merger policy. It mentions two norms for the closure of schools: primary schools with less than 15 enrolments and elementary schools with less than 30 students are to be merged with nearby secondary and higher secondary level schools, following RTE norms.

According to Section 6 of the RTE Act, the defined area or limits of the neighbourhood within which a school shall be established by the state government are described as follows: "School having Classes I-V shall be established within a walkable distance of 1 kilometre from the neighbourhood and school having Classes VI-VIII shall be established within a walking distance of 3 kilometres from the neighbourhood" (MHRD, 2009). However, while the expansion of school education falls under the purview of individual states rather than the federal government, the criteria for the establishment of new educational institutions are determined by the policies of those states. In each of the states, there is a predetermined set of standards for the opening of schools. These standards include population norms and distance norms. It is generally accepted as a demographic norm that a primary school should be made available in all habitations with a population of at least 300 people. Even if having a high enrolment rate and a diverse student population in the classroom is a positive indicator of healthy inclusion and involvement in the educational system, it is of equal importance to ensure that every child receives an education of a high quality. Understanding whether or not the academic achievement of students is increasing over time in a manner that is consistent with equity is one of the most important measures of the quality of education.

Under the provision of RTE norms of establishing schools in all areas irrespective of physical and spatial barrier, India witnessed the provision of schooling facility in every corner of country. As a result of the provision of schooling facility in the Right to Education Act 2009, 91.21 per cent habitations have primary education facilities within a walking distance of 1 km, including 66.30 per cent habitations which have these facilities within the habitations itself. Taking population as a criterion, 96.19 per cent of the rural population have access to primary education facilities within a walking distance of 1 km., including 84.79 per cent of population which has these facilities within the habitations itself (NCERT, 2016).[1] In the state of Rajasthan, where rural areas are sparsely populated and characterised by isolated habitations, population norms were established to ensure the provision of education. Schools were mandated to be set up within a 1 km radius for primary education and 2 km for upper primary, in accordance with a minimum population threshold of 250. As a result of interventions under the Right to Education (RTE) Act, all habitations were provided with primary schools, regardless of the population distribution.

[1] A habitation is a distinct cluster of houses existing in a compact and contiguous manner, with a local name. Its population should not be less than 25 in plain areas and not less than 10 in hilly/desert/sparsely populated areas. In case there exits more than one such cluster of houses in a village, they will not be treated as separate habitations unless the convenient walking distance between them is more than 200 metres.

However, a steady decline in enrolment in these rural schools raised significant concerns. Many of these schools became single-teacher institutions, leading to a deterioration in the quality of education. This issue was underscored by the ASER 2013 report, which ranked Rajasthan among the lowest-performing states in terms of primary school outcomes. Consequently, the decision to merge schools was followed by persistently low enrolment rates at the primary level and poor educational quality outcomes.

Examples and Background of School Closure

Merger of schools refers to the phenomenon of combining schools to achieve efficiency in administration and the improvement of social and academic experience of learning in spare population location (Thanyani & Dzivehonele.A., 2019), (Jimerson, 2006); (Nitta, Holley, & SL, 2010). In many nations, school closures are a popular technique when the school-age population in sparsely inhabited areas declines. The idea is that by combining resources and taking advantage of economies of scale, we can provide better education more efficiently (Howley, 2011). The process of merger has been discussed not in India alone since many countries have discussed and practised school merger policies; these include China, the USA, Canada, Indonesia, South Africa, Denmark and Norway.

However, these countries have merged or consolidated their schools in different manners. The US method of school consolidation was, for example, different from China's method of school merger and the Indonesian regrouping of schools. For example in the USA, consolidation of small schools was done in the 20th century, in 1929-30 (United States Department of Education, 2016) because of the population decline that posed formidable challenges of maintaining the rural districts (Blauwkamp, Peter, & Anderson, 2011). While school consolidation in the context of New York was the closure or reorganisation of more than one school and their subsequent amalgamation into a single school (Sell, Leistritz, & Thompson, 1996); (Andrews, 1974); (Nelson, 1985). The consolidation of schools was not limited to rural districts alone but was also implemented in urban areas (Chiu & Khoo, 2016); (Lee & Lubienski, 2016). Chicago public school announced and merged 54 primary schools with the expectation of saving 43 million USD annually (Lee & Lubienski, 2016).

One of the main reasons for consolidation of schools in Chicago was the declining enrolment and low achievements, stoking the idea of economic scale of education (Kirshner & Mathew, 2010); (Engberg, John, Zamarro, & Zimmer, 2012). Beyond the consolidation in the USA, including New York and Chicago, school district consolidation and merger of school were discussed with well written documented phenomenon in many of the developing countries also (Joe, Clark Gradner, & Wieland, 2006); (Kearns, Robina, lewis, Tim Maceanor, & Witten, 2009); (Slee bill & Miller, 2015). In Chile, between 2002 and 2012, 1,651 schools were closed, representing one-sixth of the nation's schools, which had a significant impact on the education system. Further 3,029 new schools were established where most of the schools were private voucher schools (Grau, Nicolas, Deniel Hojaman, & Mizala, 2018). The Netherland implemented school merger policy and reduced the number of schools by 15 percent in few years (Haan, Monique, Edwin Leuven, & Oasterbeek, 2016). In Hong Kong, due to the declining of school students, 36 per cent of primary schools were closed down on the basis of established policy reform in 2003 (Chiu, Sungwook Joh, & Khoo, 2016).

Merger of schools in India is a new phenomenon that was discussed in programmes and policies in the form of rationalisation or consolidation of small schools. However, many state

governments have formulated their own policies for consolidating schools and have used phrases and terms like 'mainstreaming of children', 'amalgamation of school', 'integration of school', 'rationalisation of school', 'consolidation of schools' etc (Rao S. , 2016). A school merger requires consideration of several factors, including leadership, cultural change, legislation or regulation, and finances. These factors should be carefully considered to ensure the success of future adjustments (George & Jones, 2001), (Beuchert, Humlum, Nielsen, & Smith, 2016).[2] In New York, consolidation impacted the landscape of public-school organisation from 1938 to 2000, since the number of school districts declined at nationwide by 90 per cent (Duncombe & Yinger, 2007). While the merger of schools was expected to enhance the quality of primary education and use scarce educational resources more economically and efficiently for all rural students. Nationwide, the number of primary schools in rural China has fallen by 24 percent from 416,000 in 2001 to 317,000 in 2005 (National Bureau of Statistics, 2006)). Norway has implemented school consolidation and the number of primary and lower secondary schools has decreased by twelve percent during the past ten years, while the average school size increased by thirteen per cent (Statistic of Norway, 2013).

In addition to the reasons previously mentioned for school mergers globally, another key factor driving the rationalisation of schools is population decline, as numerous countries have experienced significant demographic shifts. (Poterba, 1998); (Ladd, Helen F, & Murry, 2001); (Grastein, Mark, & Kaganovich, 2004); (Ohtake, Fumio, & Sano, 2010); (Figlio, David N, & Fletcher, 2012). For example, Thailand recently announced intention to close down thousands of schools with less than 120 students with other schools within a radius of six kilometres. In the case of the Brazil, official statistics has reveals that the number of rural primary schools were drop down by 31 per cent between 2007 to 2017 (Brazil Ministry of Education, 2020).

However, the merger of schools in India has not been due to changes in the demographics but rather because of low educational outcomes. Mergers were implemented solely due to low enrolment in primary schools and concerns regarding the quality of educational outcomes. The Government of India issued guidelines for the states to look at the possibility of merger in response to the low enrolment in government schools and the quality education outcomes. But many of states including Rajasthan has done the process of closure of primary schools much before the national level guidelines. The merger of school policy in Rajasthan was implemented in absence of full-fledged policy documents. The school teacher, principal, pupils, and community members were unaware of the merging process.

The Growing Call for Quality Education in India

The Indian school education system is transitioning to a new paradigm, aiming to enhance student achievements and ensure equal access to a quality learning environment. Efforts are being made through the introduction of new policies and programmes of intervention to provide every child with access to high-quality educational facilities, even in remote areas, at both the federal and national levels. It was designed with the objective of increasing school effectiveness as measured by equal access to education and equitable learning results. Through this shift in the approach to the development of school education from input-based to outcome-based, central sector interventions, as envisaged in the document entitled

[2] From 2009 to 2014, the municipal expenditures for the public schools at large were reduced by approximately 6.3 per cent (Bless & Baskarann, 2016).

"India's Three-Year Action Agenda" from 2017-18 to 2019-20 (SSA, 2018), that have a kind of proposed policy change within a relatively short period It is expected that while some may be fully implemented during the three-year term, others will continue to be implemented in succeeding years.

The Union Budget for 2018-19 proposes to treat pre-nursery to senior secondary education holistically and without segmentation. Therefore, a comprehensive programme for the pre-school up to grade 12 school education sector has been developed with the objective of improving school effectiveness as evaluated by equal access to education and equitable learning results. This shift in policy focus is to improve system-level performance for enhancing school outcomes through combined schemes of school education as well as teacher education. The Ministry of Human Resource Development MHRD (now Ministry of Education) responded to the call for rationalising schools and enhancing the quality of education by drafting a document on the integration of schools within the framework of the Samagra Shiksha Abhiyan in 2018. This approach involves the amalgamation of various centrally sponsored schemes, including SSA, RMSA, and TE, so as to ensure a cohesive and efficient implementation strategy.

The MHRD paused on the need to rationalise schools as one of the measures to improve the quality of learning outcomes of students and it is represented in the draft documents "*Guidelines for Rationalisation of Small School across States for Better Efficiency*" which came into public domain on 7 July 2017. The basic objective of this policy was improving access by making better resourced schools, development of school campuses and creation of composite schools as the spirit of RTE. This programme was initiated in response to the concern related to maintaining the standard of school education in all the states. Therefore, the MHRD issued guidelines for the rationalisation of small schools across the states for the purpose of improving efficiency. The guidelines stated that a total of 31,809 schools were already merged in the country. However, a report by the RTE forum claims that a total of 80,647 schools were either merged or shut down till 2014.[3] There is currently a process of school consolidation underway in a number of states; however, there is no publicly accessible document at national level that defines the policy norms for merging schools and determines the actual number of schools that are closed as part of the consolidation process.

The demand of quality education outcomes and interventions started a series of discussions after NITI Aayog focussed on quality education outcome and the MHRD gave preference in its policy initiative after 2017. Interestingly, the Government of Rajasthan implemented the school merger policy without proper research and policy documents, well before the intervention at the national level. As a result of the interventions made by the top-level administrative bureaucrats, the government of Rajasthan made the provision of 17,479 closed schools through departmental order from the secretariat level to district education officers. Implementation of school closure involved a top-down approach where the school principal, teacher, community and social sector were totally absent.

The third and most important step initiated was National Education Policy of 2020, that came up with new pedagogical and structural changes for aiming quality education outcome.

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3 According to RTE Forum report (*The Hindu*, August, 9, 2015), state wise closed schools where Rajasthan (17,129), Gujrat (13,450), Maharashtra (13, 905), Karnataka (12,000), Andhra Pradesh, (5,503), Odisha (5,000), Telangana (4,000), Madhya Pradesh (3,500), Tamil Nadu (3,000), Uttarakhand (1,200), Punjab (1,170); and Chhattisgarh (790).

According to the NEP 2020, a new pedagogical and curricular structure defined as the 5+3+3+4 that is centred on the cognitive and socio-emotional development of children is proposed. Beginning at the age of three, children are eligible to participate in early childhood care and education (ECCE) programmes that have a solid foundation and are designed to foster improved overall learning, development, and well-being for the child. So, the paradigm has changed from everyone having access to a school to everyone having access to quality education. As the focus has shifted to quality education, NEP 2020 has also brought up the idea of creating school complexes. These complexes would include one secondary school and all of the lower-grade schools and Anganwadis within a radius of five to ten kilometres, with the goal of making better use of resources and better management of schools in the cluster.

One of the states that participated in this activity on a significant scale and contributed to the establishment of about 10,000 Adarsh Schools was Rajasthan (working as school complexes as recommended by the NEP 2020). The Ministry of Human Resource Development also made some recommendations to all of the states, suggesting that they follow the example set by the state of Rajasthan and merge small schools in their respective villages. Thus, policy interventions that involve creating school complexes can result in a breach of the right to education within the fundamental standards of having access to schools that are less than one kilometre away from the habitation.

One of the most important recommendations made by NEP 2020 was to establish school complexes in order to guarantee quality education in India. Rajasthan is one of the states in which the closure of small schools has already been done. These schools were merged into secondary and senior secondary schools before NEP 2020 was even a topic of discussion because they had low enrolment rates to begin with. Development of Adarsh Vidyalaya and introduction of new administrative post called as Panchayat Elementary Education Officer (PEEO) are the outcome of school merger policy in Rajasthan. In the current context, each Gram Panchayat is equipped with an Adarsh Vidyalaya overseen by a PEEO (Panchayat Elementary Education Officer). These schools are well-resourced, providing essential amenities such as qualified teachers, adequate infrastructure, and comprehensive teaching and learning materials, along with their associated feeder schools.[4] PEEO was responsible for managing the institutional and infrastructural development at the panchayat level. This included the allocation of teachers to schools, the development of schools and lesson plans, the allocation of resources at the village level, and the inspection of private unaided schools and other related administrative level responsibilities. In the context previously discussed regarding the closure of small schools in rural Rajasthan and the growing demand for school complexes, this paper therefore endeavours to analyse the repercussions of school closures on access to educational facilities in affected areas. The study delves into the current efficacy of school complexes in ensuring widespread school accessibility for all children within these habitations.

[4] Rajasthan has implemented a policy wherein the Panchayat Elementary Education Officer (PEEO) oversees the management of all primary and upper primary schools within their respective Gram Panchayats. With the establishment of Adarsh Vidyalayas at the Gram Panchayat level, all primary and upper primary schools within the jurisdiction are monitored and managed by the PEEO. Consequently, these primary and upper primary schools are designated as feeder schools to the Adarsh Vidyalayas.

Data Source and Methodological Approach

The paper is a component of a broader convergent mixed methods study (Creswell & Clark, 2011), investigating inquiries regarding where students are enrolled after the school closure announcement and whether they encountered any difficulties accessing new schools. This paper emphasises the qualitative segment of the study, wherein a total of 88 households were directly interviewed. Only families with children who used to study in the closed-down schools and were affected by the merger process considered. Among the selected 88 households, data from 201 children were collected through semi-structured interviews. Stratified sampling techniques were employed for field selection based on the highest number of school closures at the district and block levels. Consequently, 13 Gram Panchayats were chosen on the basis of the highest number of school closures at the Panchayat level. Within these 13 selected Panchayats, 13 Adarsh Vidyalayas[5] were established after the implementation of school closure, and a total of 43 primary and upper primary schools were closed during the merger process. Households were selected in close proximity to the 43 closed schools in all habitations to determine the reasons for the closure of primary schools and how students were admitted after their primary schools were closed. All interviews were transcribed verbatim and analysed using thematic analysis based on the findings (Levitt, et al., 2018). Thematic analysis is a method that, unlike many forms of qualitative analysis, may encompass various approaches and methodological tools. However, its effectiveness is limited to the researcher's ability to accurately assess rigor and credibility (MB, Huberman, & Saladana, 2014).

Findings and Discussions

Coping with the Unexpected: Students Response to School Closure

The implementation of the school merger policy was perceived differently at the household level, as it had a direct impact on both parents and children, primarily due to the abrupt closure of schools. This sudden change disrupted the established educational routines, leading to concerns among families regarding accessibility and continuity of education. They were caught off guard by the abrupt shutdown of their schools and lacked awareness regarding the reasons behind it. The sudden disruption caused by the school closure stemmed

5 The Government of Rajasthan has designated secondary and higher secondary schools in every Gram Panchayat as Adarsh Vidyalaya under the Adarsh Vidyalaya Yojana initiative. The primary goal of this program was to establish centres of excellence in rural areas, thereby enhancing students learning outcomes. As part of this intervention, the Principal of an Adarsh Vidyalaya was called PEEO, overseeing the management and administration of all primary and upper-primary schools within the respective panchayat. This initiative aligns with the principles outlined in the National Education Policy (NEP) 2020, wherein Adarsh Vidyalaya can be viewed as 'school complexes. According to the NEP 2020, a school complex refers to a cluster or grouping of schools within a specific geographical area, emphasising collaboration and resource-sharing to improve the overall quality of education. School complexes facilitate collaboration by encouraging the exchange of best practices, resources, and expertise among member schools. This approach emphasizes the sharing of teachers, infrastructure, libraries, laboratories, and other educational materials to optimise available resources.

from the failure of policy implementation at the grassroots level. The process of school closure was typically initiated through discussions at the bureaucratic level, followed by departmental circulation to proceed with primary school closures. However, despite the departmental stipulations suggesting only two basic criteria for school closure, in reality, schools meeting more than the basic criteria were also considered for closure.

The sudden closure of schools affects students significantly, especially when it occurs during the month of August, as students typically return to school on July 1 every year after their summer holidays. Students who used to study in closed schools have narrated their experience as under:

> *We used to go to school every day, but suddenly our teacher stopped coming to our school. We were sitting in the classrooms for 10 to 15 days without any teacher in our school. After spending many days without a teacher, we began informing our parents that there were no teachers at our school and we weren't receiving any homework. Parents went to meet principal of senior secondary school concerned about the absence of teachers in the primary school, where they learned that their primary school had been shut down by a government order. (The students who were previously enrolled in the closed school were in grade 3 are now in grade 10)* (Fieldwork, 2022, Rajasthan)

The implementation of the school merger policy was not adequately known at the ground level, as it was found during the survey among households in selected 13 Gram Panchayats selected based on the highest number of school closures at the gram panchayat level. The study found that more than 90 per cent of the households were not aware about the closure of their nearby schools. The study included only those parents whose children were studying in the closed schools at the time of implementation of school merger policy. Among the selected 43 closed schools, only one school was found where the teachers informed parents about the closure. As one of the respondents, Geeta (name changed), narrated her experience of moving from their nearby closed school to newly created Adarsh Vidyalaya.

> *Our primary school was located near our home with more than 30 students with two female teachers. One day, our teacher received a letter from the Block Education Officer (BEO) regarding the closure of our school, which was a result of the consolidation of the school management system at the gram panchayat level.*[6] *Our teacher gathered all the students and informed us about the closure, assuring us that she would ensure our transition to a newly created school, called Adarsh Vidyalaya, resulting from the merger of multiple schools. She then met with our parents to discuss the closure and subsequently facilitated our admission to the new school. However, the new school was located more than 4 kilometres away from our homes, requiring us to travel a significant distance"* (Fieldwork, Rajasthan 2022).

The experience narrated above is from a student who was in grade 4 when her school was closed in the year 2014. She has completed her 12th grade in the same Adarsh Vidyalaya

6 During field visits, it was found that low enrolment and single-teacher schools were not the only reasons for school closures; the introduction of a single management system at the gram panchayat level was also a factor. The introduction of the PEEO was a result of this centralised management system at the gram panchayat level.

where closed schools were merged. School merger policy implemented in Rajasthan was based on top-down approach where top administrative officers were the central actors on policy process. Top-down policy actors concentrate their attention on factor that can be manipulated at the central level (Matland, 1995). As top-down approach discussed by (Sabatier & Mazmanian, 1980) suggests, a number of legal and political variables that can be synthesized into six major conditions needed for effective implementation ranging from clear objectives, causal theory, legal structure of the implementation process, committed officials, supportive interests' groups to no understanding of changing socio-economic conditions. But while we look policy implemented through the decision of central actor at bureaucratic strategic level, then fundamental question arrives that how strategically policy had come in the process and implemented without expertise and knowledge of real problems.

Unveiling the Impact: School Closures and Accessibility of Schools to Students

School district consolidation in the USA, Denmark, Sweden and Finland was based on the thinking that economies of scale will enable higher quality education to be delivered in the efficient manner. Several studies investigated the impact of school consolidation on students achievements have found mixed results regarding the directions, magnitude and longevity of effects (Brummet, 2014); (Haan, Monique., Edwin, Leuven., & Hessel, 2016); (Liu, chengfang, & Loyalka, 2010); (Beuchert & smith, 2016); (Maria Knoth & Smith, 2015). However, the pressure to consolidate schools has extended beyond high-income countries to include middle-income nations, driven by changing demographic trends and the persistently low quality of educational outcomes in many of these countries. (Hannum & Wang., 2021) such as Thailand (Saengpassa, 2017), Brazil, South Africa and China (Ortellado, 2015); (Howell, 2017). Countries in south east Asia also planned to consolidate small schools (Malik M. , 2013); (Chowdhury, 2017). School closure in India was because of the two main factors laid down in policy norms in many of the state specific policy norms of school merger i.e.- quality education and efficient use of government resources. Although there is a lack of empirical study measuring the effect of school merger policy on students' outcome because school merger policy was implemented in 2014 and it needs to be studied more. But many studies have found that due to the closure of schools, students from nearby small habitations have to cover more distance after the merger process (Malik, 2021); (Rao S. , 2016). The closure of schools has thus become a source of grief for many students who were used to studying at their nearby primary schools. One of the experiences shared by students narrated that the distance to the newly established Adarsh Vidyalaya has significantly increased from their homes. During the focus group discussions, many of the affected students shared their experience that now they have to cover an increased distance because of the closure of their nearby schools.

> *Our Adarsh Vidyalaya was upgraded after the closure of five primary schools in our village. We were more than 20 students in our primary school when it was closed*

> *down. Now, our new school is located over three kilometres from our Dhani,*[7] *but we have no other government school nearby where we can attend to avoid the long distance. The principal of Adarsh Vidhyalya has provided cycles to all girls, but we could not avail them because our Dhani is not connected through a* pakka *(concrete) road. All students from our Dhani received transportation vouchers because we cover a distance greater than the school norms of RTE* (Fieldwork, 2022, Rajasthan).

It was found during the field survey that 48 per cent of the closed-school children in selected 13 Gram Panchayats moved to private schools because of the increased distance of the newly created Adarsh Vidyalaya from their habitation. A total of 201 students from the closed schools were included in the study to analyse the impact of school closures on the accessibility for students. The findings revealed that prior to the closure, over 90 per cent of the children travelled less than one kilometre to reach their school, which was situated within their habitation. However, following the closure of their nearby primary and upper primary schools, the distance to the remaining schools increased significantly, with only 34 per cent of the closed schools remaining within a one-kilometre radius. These schools were either located near the newly created Adarsh Vidyalaya or within a radius of one km radius from the newly created Adarsh Vidyalaya. Among the selected 43 closed-down schools, 27 schools do not fall under the RTE norms in terms of the distance of school between their habitations to newly created Adarsh Vidyalaya.[8]

Even though the norms were outlined in departmental stipulations stating that RTE norms would be followed during the implementation of the school merger, these norms were not observed at the ground level. No distance matrix exercise was conducted to measure the distance between schools or between schools and habitations. Based on information about the location of the schools provided by the principals of the newly created Adarsh Vidyalayas and through field visits to all the merged schools, it was found that the distance of some closed-down schools from the concerned habitations exceeded the RTE norms.

From School to Home: Analysing Connectivity Disruptions Post-Closure

The departmental stipulations for the closure of schools clearly mentioned that "school merged in a revenue village that is inaccessible or has physical barriers such as forest, hills, national and state highway, railway line, river, and rainy season should not be merged." But it was found during the fields visits that 4 villages were located on the opposite side of the national highway and Golden Quartile Expressway (in one selected Gram Panchayat) in selected 13 Gram Panchayats. The children belonging to the closed schools were unable to attend the newly created Adarsh Vidyalaya because they had to cross the national and state highways in some cases that have been explained through the narratives.

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7 Dhani (Hindi: ḍhāṇī) or Thok is a type of hamlet, the smallest conglomeration of houses, in the sandy Bagar region of the north-western states of Rajasthan, Haryana and Punjab in India. As per the Census of India, 70 per cent of Indians live in villages.

8 Information related to the distance from closed school to the newly created Adarsh Vidyalayas was provided by the PEEOs, teachers of Adarsh Vidyalaya and parents.

> *Government primary schools in Bhojpur Kalan had more than 20 students when this primary school was merged to government senior secondary school Bhojpur Kalan. But because the state highway runs between new schools and closed schools, it has created problems for students who want to continue their education in government schools. This problem creates much tension among the parents about of the safety of their children as they have to cross the highway to reach out new schools. There were no underpass and foot over bridge on the school side which students could use. Many parents have felt it was insecure to send their children to the newly created Adarsh Vidyalaya. Therefore, some of the parents have sent their children to private schools, but it was not possible for all the villagers. Therefore, parents have taken this concern as a matter and went to PEEO for the safety of their children. Then PEEO made arrangements for all the children coming from the other side of the highway and made the teacher responsible for highway crossing every morning and evening. All students come to newly created Adarsh Vidyalaya together so that they can cross highway at one time (parents of closed school children)* (Fieldwork, 2022, Rajasthan).

Parents as well as teachers, and also the Principal of Adarsh Vidyalaya, have consistently expressed concern about the safety of children, especially at the primary level, as these small children cannot cross roads by themselves. The PEEOs have made some arrangements, but it depends entirely on the individual leadership practices of the PEEO in supporting students. Despite several schools being reopened after facing significant criticism from villagers, the reopening often occurred due to the political affiliations of local leaders. Villages without political connections to local leaders were unable to reopen the concerned schools once they were closed. The PEEOs of Adarsh Vidyalayas also sought consent and collected signatures from the affected villagers about the reopening of schools, and submitted these to the Block Education Officer (BEO) and District Education Offices DEO. However, this all has been in vain.

Effect of School Closure on Accessibility of School at Habitation Level

The prime objective of school merger policy was to manage, monitor and enhance quality education outcomes in government schools. Closure of two and more than two primary schools were merged with the secondary and higher secondary schools that were established and called Adarsh Vidyalaya in every Gram Panchayat. These Adarsh Vidyalayas aimed to provide equitable and accessible education in rural areas. The principals of Adarsh Vidyalayas were holding the responsibility with ensuring all academic and administrative responsibilities for managing and monitoring of these schools. However, with the introduction of the National Education Policy (NEP) 2020, a new pedagogical structure of 5+3+3+4 for school education has been proposed, which includes the establishment of pre-primary Anganwadi centres as part of the formal education setup. Despite this, there was no schooling facility available at the habitation level because primary and upper primary schools were closed during the school merger process. As a result, the recommendations of NEP 2020 and the effects of the school merger have left some habitations without access to schooling facilities, including Anganwadi and primary level education. This has become a challenge for parents whose children wish to

use government school facilities near their homes. During the interview, one of the parents expressed concern about the lack of access to nearby schooling facilities for their children.

> *When our nearby school closed due to low enrolment, our primary level children used to accompany their older siblings, with a gap of 5 to 6 years. However, now our village faces a different challenge. We have many students in pre-primary and primary levels, but there are no government schools available for them. As a result, we send our children to private schools because they offer transportation services to take them to and from school. But we cannot afford to send our children to a private school, therefore our children, at the age of 6 years, are now travelling over 2 km from our home to Adarsh Vidyalaya. While they have received transportation vouchers, this financial aid does not reduce the distance they have to travel. Moreover, we cannot spend money on transportation as well because our village is not connected by road, and public transport is unavailable* (Fieldwork, 2022, Rajasthan).

It was found in all the selected villages that parents have faced the same issue of getting their children admitted at the primary level in government schools. The closure of primary schools has significantly reduced the opportunities for children seeking enrolment in a government primary school. For many families, sending children to government schools presents logistical challenges, as parents are responsible for transporting their children to Adarsh Vidyalayas. This often disrupts their work schedules, particularly in case of the daily wage labourers or those involved in agricultural activities. As a result, a common alternative is the enrolment of children in low-fee private schools for primary education, despite the financial strain it places on families.

Furthermore, gender preferences also influence these decisions. As a matter of fact, many families opt to send their daughters to government schools after they complete their primary education.

Conclusion

Beginning in 2014, the school merger policy continued to be implemented in 2016 and 2017. The formation of Adarsh Vidyalayas proceeded through different phases, and the departmental stipulations regarding the development of Adarsh Vidyalayas also mentioned that schools would be established in different stages, with a preference for rural schools initially. But establishment of Adarsh Vidyalayas raised the question of children's access to the primary and upper primary level of education. As it was witnessed during the field visits that students now had to cover more distance than earlier because of the closure of their nearby schools, and that amounted to a violation of the RTE norms. Although some of students who used to cover more distance than the RTE norms stipulated received transportation voucher facility, this was stopped after the COVID 19 outbreak.

While the establishment of Adarsh Vidyalayas was aimed to provide quality education and create some centres at the excellence at Gram Panchayat level, their main focus was on the secondary and higher secondary level of education students only; it was found in all the selected Adarsh Vidyalaya that highest enrolments were made was found at the secondary and higher secondary grades only.

To address concerns about improving the quality of educational outcomes following the implementation of the school merger policy, Rajasthan is listed under the Prachesta-3 score category, with the state grade score ranging between 581 and 640 out of 1000. In terms of access indicators, the state lies in the 48-56 per cent range, which is not very favourable for providing accessibility. These scores were provided by the Ministry of Education based on data from 2021-22 (MOE, 2021-22). However, there is a lack of empirical studies measuring the effective outcomes of the policy and highlighting improvements in the quality of education post-merger.

The implementation of the school merger policy has adversely impacted school educational access at the habitation level, particularly at the pre-primary and primary stages. The closure of primary schools has forced several parents to consider private schooling, which many find financially burdensome. This financial strain often leads to a gender-based preference, with sons being prioritised for private education, thus limiting the access for daughters. Consequently, the closure of schools has significantly hindered the accessibility of education for girls, especially when it comes to enrolling them in Adarsh Vidyalayas. The social accessibility of girl students, who face numerous challenges in reaching the Adarsh Vidyalayas due to long distances and unsafe commutation, is a critical concern for parents. The implementation of the school merger policy appears to have been carried out without sufficient research-based evidence and with limited consideration of the local context. The lack of active engagement from parents, teachers, and the community in both policy formulation and implementation has exacerbated disparities in the state's educational development. Given that education is fundamentally a process of civil society engagement, it is essential that policies are crafted with the beneficiaries in mind, ensuring their active participation in any changes to the educational system.

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Sustainability in Business Education: A Study of Large-Sized HEIs of North India

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Sapna#

Abstract

The study is based on key stakeholders' perceptions regarding sustainability integration in business education curriculum, at three large, general, public and affiliating universities in northern India. Being sampled from large standard institutions of the north Indian region, the results are expected to largely represent all the higher education institutions (HEIs) in the region. Exploratory Factor Analysis (EFA) has been conducted to summarise the components of sustainability integration in higher education. After performing EFA, conceptual and competency-based integration was extracted in order to include sustainability in business education. Multiple response analysis was done for questions with multiple choices, while inferential statistics were executed to analyse the perception differences.

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Introduction

Sustainability is now integral to the corporate world, especially since the United Nations introduced the Sustainable Development Goals (SDGs) in 2015, prompting businesses to align their agendas with these goals (Eiaify *et al*, 2020). Business education for sustainable development prepares students to generate profit without harming people or the planet (Weybrecht, 2017). The Brundtland Report (1987) defined sustainable development as "meeting present needs without compromising future generations' ability to meet their own needs." Over time, sustainable development has been represented by three pillars: the economy, environment, and society, guiding human activities toward balanced growth (Purvis *et al*, 2018).

Sustainability education gained attention at the 1992 UN Conference on Environment and Development in Rio de Janeiro, which emphasised its importance in achieving sustainability goals. John Elkington (1994) introduced the concept of "triple bottom line" (TBL), highlighting that business success should be measured not only by financial profits but also by its social and environmental impact. Business schools play a crucial role in shaping future leaders who can lead businesses toward sustainability (Minderman, 2015; Boca, 2019). Business Education for Sustainable Development empowers graduates to integrate social and environmental benefits into their business practices (Sterling, 2001).

To foster a sustainability mindset, business education must shift from a neo-classic focus on profitability to eco-centric and eco-logical modernisation approaches. The eco-centric approach emphasises resource conservation and waste reduction, while eco-logical modernisation advocates for win-win solutions that benefit both businesses and stakeholders without harming the environment (Stubbs & Cocklin, 2007). The corporate sector requires employees who can identify and leverage sustainable business opportunities (Accenture, 2010; Beusch, 2014). Therefore, business schools must equip students with the skills and knowledge necessary to tackle sustainability challenges in their careers and personal lives (Anderberg, 2009; Hesselbarth & Schaltegger, 2013). Sustainability orientation in business education fosters sustainable behaviour in graduates' professional and personal lives (Biasutti, 2018; Kumari & Bhalla, 2021).

Literature Review

Education for sustainable development is crucial for attaining the goal of sustainability (Fahama *et al*, 2017). Cotton (2007) and Borge *et al* (2012) examined the understanding and perceptions of teachers regarding the integration of sustainability in education and found that the majority of the respondents were interested in teaching sustainability. Beringer *et al* (2008) conducted a survey in Atlantic Canada using the Sustainability Assessment Questionnaire (SAQ) and disclosed that the majority of HEIs were engaged in sustainable development (SD) in the curriculum but left to exercise its practical implications. Several authors have suggested competency-based integration of sustainability in the education system to train graduates and ensure its practical implementation (Lambrechts *et al*, 2013; Hesselbarth & Schaltegger, 2014). Jones *et al* (2008) explored the academia's perception at Plymouth University by using the interview method and curriculum content analysis; they found that sustainability-related teaching and learning are already in the curriculum of some programmes. Students and teachers generally supported ESD (Sharma & Kelly, 2014; Sharma

& Hart, 2014; Hazaima *et al*, 2021). A number of authors have also reported that though business schools have started considering sustainability as an essential aspect, they are still at the budding stage of incorporation (Naeem & Neal, 2012; Lamberchts *et al*, 2013; Zeogers & Clark, 2014; Figueir & Raufflet, 2015; Landrum & Ohsowski, 2017; Ciccullo *et al*, 2018; Fiselier *et al*, 2018). Sharma & Kelly (2014) executed a survey among business students and reported that learners had no prior knowledge of sustainability before its integration, but after learning it, the majority of them recommended teaching it on a compulsory basis. Wu *et al* (2016) analysed the courses offered by the universities of EQIS (European Quality Improvement System) and AACSB (Association of Advance Collegiate Schools of Business), and found differences between the development stages of the countries as well as graduate and undergraduate levels.

The lack of incorporation of sustainability concepts in business education programme, university actions, and plans does not produce a positive influence on the sustainability behaviour of students (Tapia-Fonllem *et al*, 2017; Kumari & Bhalla, 2021). Sustainability in management education is still in the transition stage and needs more attention (Dlouh *et al* 2017). In HEIs, strong administrative support and commitment are crucial for launching sustainability in business schools (Pesonen, 2003). Holliday (2010) conducted an interview from the former DuPont CEO and chairman who suggested integrating sustainability on a conceptual basis and competency basis. Previous studies emphasised upon the incorporation of the sustainability concept in management education to increase awareness and understanding regarding SD and provide competency-based practical knowledge of its implementation in business world (Dawe *et al* 2005; Edgar 2015). Previous research reported significant progress in ESD in developed countries (Fiselier *et al*, 2017), but developing countries are still left behind in implementation. To address this gap, further research is needed in business and management education, particularly from an Indian or Asian perspective.

Most previous studies focus on developed nations and may not reflect the issues relevant to India. This paper discusses the current state of sustainability in business education, academia's perception of its integration, and preferences for integration approaches. The questions it seeks to tackle are as below:

Q1. What is the present scenario of sustainability integration in management education?

Q2. What is the perception of concerned stakeholders towards sustainability in management education of Indian business school?

Q3. What are the components of sustainability integration in management education?

Q4. Which is the preferred approach of stakeholders for integration sustainability in management education?

Methods

The study adopted quantitative research design and cross-sectional survey has been used to collect the needed data.

Participants: An online survey has been conducted and expert purposive sampling has been used to collect data from business students and teachers at three major universities in

North India. In total, data were collected from 910 participants, that included 819 students and 91 teachers.

Material: The present study was conducted using a web-based structured questionnaire with closed-ended questions. The questionnaire is divided into three parts. The first section consists of twenty statements regarding sustainability integration into management education. In the second part, two questions with multiple choices regarding sustainability-related topics learned or taught and preferences for an integration approach have been asked. The third part consists of demographic information. A five-point Likert scale from strongly disagree to strongly agree was used in the survey in order to determine the level of agreement.

Procedure: The questionnaire was pretested with 30 respondents. The face validity and content validity of the instrument were thoroughly tested and peer reviewed before sending it to the target population. Data were collected from students and teachers engaged in management education at three major, general, public, affiliating and category 1 autonomous universities in North India as per the University Grant Commission.

Data: The data collected were screened for unengaged responses. 17 unengaged responses were found in students' responses out of 819 students. The final sample size of 893 participants was found to be fit for further analysis, consisting of 802 students and 91 teachers.

Tools of Analysis: An exploratory factor analysis was performed to extract the components of sustainability from business education. Multiple response analysis has been conducted to analyse multiple responses, and inferential statistics tools were used to study the difference in perception for the various demographic groups. SPSS software has been used for analysis.

Results

Position of sustainability in business education: In order to get an idea of to what extent teachers and students are engaged in teaching and learning about sustainability in business education or to what extent sustainability already exists in the curriculum, a question with multiple response options was asked of the teachers and students about which sustainability-related topic they ever taught or learned during the course. Their responses were analysed with multiple response analysis using SPSS software.

TABLE 1

Subject Learned by Students (Frequency)

	Subjects	*Responses*		*Percent of Cases*
		N	*Percent*	
Learned Subjects	Business Social Responsibility	591	18.4	73.7
	Business Ethics	585	18.2	72.9
	Corporate Governance	381	11.9	47.5
	Sustainable Development	432	13.5	53.9
	Corporate Citizenship	192	6.0	23.9
	Sustainability	360	11.2	44.9
	Triple Bottom Line	93	2.9	11.6
	Eco-Centric Business Approach	120	3.7	15.0
	Eco-logical Modernisation business Approach	100	3.1	12.5
	Business Eco- efficiency	151	4.7	18.8
	Social entrepreneurship	204	6.4	25.4
Total		3209	100.0	400.1

Total N = 802

a. Dichotomy group tabulated at value 1.

Table 1 shows the results of the multiple response analysis and reveals that 73.7 per cent learned business social responsibility and 72.9 per cent business ethics. 53.9 per cent learned the term sustainable development, 47.5 per cent corporate governance, 44.9 per cent sustainability, 23.9 per cent corporate citizenship, 25.4 per cent sustainable entrepreneurship, 18.8 per cent business eco-efficiency, 12.5 per cent eco-modernisation business approach, and only 11.6 per cent triple bottom line. The result shows that a majority of the students learned about business social responsibility and business ethics. Though 53.9 per cent of students reported that they learned the term “sustainable development," out of them, students who have learned “eco-centric business approach,” “eco-logical modernisation business approach,” “business eco-efficiency,” and “triple bottom line” are less than 25 per cent. The triple bottom line is the soul of a sustainable business model, but only 11.6 per cent of students have knowledge about it emphasises minimising the use of natural resources, using by-products, and sharing resources, and only 15 per cent of the students reported having learned about the eco-centric business approach. Merely 12.5 per cent of students reported having knowledge about the eco-logical modernisation business approach. Social entrepreneurship refers to starting a business venture with the motive of serving society and the environment while earning, but only 25.4 per cent of students reported having knowledge. From the above results, it can be concluded that though students have knowledge of the term sustainable development but they are not very aware of its implementation in business.

TABLE 2

Subject Taught by Teachers (Frequencies)

	Subjects	*Responses*		*Percent of Cases*
		N	*Percent*	
Subject Taught	Business Social Responsibility	61	23.0	73.5
	Business Ethics	57	21.5	68.7
	Corporate Governance	56	21.1	67.5
	Sustainable Development	24	9.1	28.9
	Corporate Citizenship	15	5.7	18.1
	Sustainability	17	6.4	20.5
	Triple Bottom Line	6	2.3	7.2
	Eco-Centric Business Approach	4	1.5	4.8
	Eco-Logical Modernisation Business Approach	5	1.9	6.0
	Business Eco- Efficiency	3	1.1	3.6
	Social Entrepreneurship	17	6.4	20.5
Total		265	100.0	319.3

Total N= 91

a. Dichotomy group tabulated at value 1.

Source: Sustainability in Business Education: A Study of Large-Sized HEIs of North India

Table 2 shows that 73.5 per cent of teachers have taught business social responsibility, 68.7 per cent business ethics, 67.5 per cent corporate governance, 28.9 per cent sustainable development, 20.5 per cent sustainability and social entrepreneurship, 18.1 per cent corporate citizenship, and 7.2 per cent triple bottom line. 6.0 per cent eco-logical modernisation business approach 4.8 per cent eco-centric business approach and only 3.6 per cent business eco-efficiency. The data about teachers also show that business social responsibility, business ethics, and corporate governance are the most taught sustainability-related topics by the teachers, whereas only 28.9 per cent reported teaching the term sustainable development and less than 25 per cent reported teaching other topics mentioned in the table. Research shows that teachers are much more involved in teaching sustainability-related subjects like business social responsibility, business ethics, and corporate governance than they are in the implementation of sustainability in business education.

Result of Exploratory Factor Analysis: Factor analysis was conducted by using the principal component matrix and Varimax rotation to examine the dimension of sustainability integration in business education. Initially, the factorability of the 20 items on the scale was examined. Several well-recognised criteria for the factorability of correlation were used. Firstly, it was observed that items were correlated by at least 0.3 with at least one other item, suggesting reasonable factorability (Beavers et al., 2013). Secondly, a Kaiser Meyer Olkin (KMO) measure of sampling adequacy was found .944 above the recommended value of 0.6.

KMO varies between 0 and 1, with values closer to 1 interpreted as better. Bartlett's test of Sphericity was significant (chi-square = 4981.395, P .05), which shows the null hypothesis "variables are uncorrelated in the population" is rejected. The diagonal of anti-image correlation was also all over.4. Finally, communalities were all over 0.4, further confirming that each item shared some common variance with other items.

Principal component analysis was used with Varimax rotation to extract the factor at a minimum loading of 0.5 and no cross loading over 0.3 or above. A total of six items were eliminated because they did not contribute to the common factor structure and failed to meet the minimum criterion.

At the final stage of principal component analysis, a Varimax rotation was conducted on 14 items, and two factors were extracted explaining 52.943 per cent of the variances that had an Eigen value greater than 1 (Costello & Osborne, 2005). With two factors, reducing to the 14 statements, only 47.057 per cent of the information content has been lost, while 52.943 per cent is explained by the two factors extracted from the 14 statements.

The extracted factors have been labelled on the basis of previous literature, as it seems fit to explain the determinant of sustainability integration (Table 3).

TABLE 3

Rotated Component Matrix

	Statements	*Component*		*Mean*	*Standard Deviation*
		1	*2*		
	Conceptual-Based Integration				
IT8-	It is a good idea to teach about the future consequences of business operations on the environment.	.734		4.47	.706
IT7-	It is important to teach the impact of corporate operations on society.	.734		4.39	.792
IT9-	Students should be taught to use natural resources efficiently.	.723		4.53	.746
IT6-	It is important to consider the impact of corporate operations on the environment.	.681		4.35	.802
IT10-	It is important to prepare students to think about people and the planet while earning profits.	.565		4.49	.776
IT11-	The sustainability theme should be integrated throughout the curriculum.	.531		4.46	.756
IT17-	Engage students in sustainable co-curricular activities to develop self-awareness.	.521		4.36	.773
	Competency-based Integration				
IT14-	Students should be trained to make business decisions in a sustainable manner.		.793	4.17	.842
IT15-	Promote professional humanistic training, contributing to sustainable development.		.734	4.25	.794
IT13-	Train professionals to extend global sustainability.		.653	4.32	.803

Cont…

IT12-	Train professionals to work in different areas with innovative, sustainable proposals.		.596	4.37	.748
IT16-	Provide students with the knowledge and skills of sustainable development, to be practised in the management field.		.590	4.34	.799
IT20-	Future professionals need to be provided with the necessary competencies to respond to sustainability challenges.		.536	4.37	.730
IT19-	Students should be encouraged for social entrepreneurship initiatives.		.529	4.37	.763
Variance Explained		27.126	25.817		
Eigen value		6.346	1.066		
Cronbach's Alpha		.844	.844		
Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalisation Rotation converged in three iterations.					

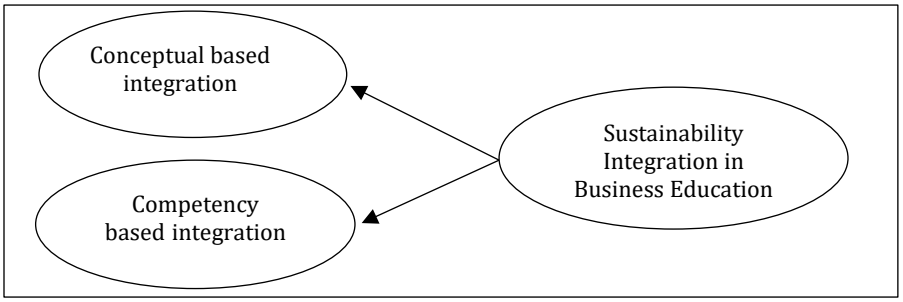
Source: Sustainability in Business Education: A Study of Large-Sized HEIs of North India

Table 3 shows that for the first component labelled "conceptual-based integration with loadings greater than 0.50, Costello and Osborne (2005) suggest that a loading of 0.50 is adequate to consider "strong". The first component consists of statements related to sustainability concept into business curriculum. This factor explains 27.126 per cent of variance and has an alpha value of 0.844. The second factor is explained as competency-based integration, which represents the items related to competency base learning of sustainability in business education. This factor explained 25.817 per cent of the variance, and the alpha value is 0.844. The mean values for all the statements are greater than 4, which indicates academia's positive response towards integration of sustainability into business for both dimensions, as the data has been collected on a five-point Likert scale from strongly disagree to strongly agree, and the value nearest to 5 shows their agreement towards the statements.

Explanation of Factors: Two dimensions have been extracted by exploratory factor analysis: conceptual-based integration and competency-based integration.

FIGURE 1

Components of Sustainability Integration



Source: Sustainability in Business Education: A Study of Large-Sized HEIs of North India

Figure 1 is a graphic presentation of the components of sustainability integration in business education. The image shows that these two components, conceptual-based integration and competency-based integration, explain sustainability integration in business education (Velicor & Jackson, 1990).

(a) *Conceptual-based integration:* Conceptual-based integration refers to teaching sustainable development concepts in the context of business (Aleixo *et al*, 2018). It allows graduates to be aware of the theoretical background of SD and its goals (Dawe *et al*, 2005) and associate them with the triple bottom line of the business. It deals with teaching potential managers a sustainable business model that takes a wider approach than conventional green education (Dale, 2005).

(b) *Competency-Based Integration:* Competency-Based integration refers to providing practical knowledge, skills, and training to business students to make them competent to start and run a sustainable venture (Fahama *et al*, 2017). It provides competency for the professional to recognise business-related sustainability issues and challenges, convert these challenges into opportunities, and bring innovative ideas and strategies to handle the challenges and seize the opportunities. It gives priority to the expansion of sustainability literacy as a 'core competence' among graduates (Dawe *et al*, 2005).

Analysis of Teachers' Perceptions

In order to examine the difference in perception between teachers and students on the basis of different demographic variables, the mean scores of teachers and students have been saved in their respective data sets as per the factors extracted. Teachers' perceptions have been analysed on the basis of teaching experience, age, and gender.

Experience-based differences: The experience of the teachers has been classified into three groups. Up to 5, n = 40; 6–10, n = 29; more than 10, n = 22 for analysing the variation in perception for both competency-based integration and conceptual-based integration components with regards to experience. A one-way ANOVA has been performed to test the differences.

Table 4 shows that there is no significant effect of experience on the perception of competency-based integration at P >.05 for the three levels [F (2,110) = 1.766, p =.176]. And for the conceptual basis, no significant effect of age on perception of competency-based integration at P >.05 for the three levels [F (2,110) =.440, p =.645] has been found. A statistically non-significant ANOVA effect has been obtained, for both the sub-construct on the basis of their experience.

Age-based differences: Teachers have been categorised into two age groups below 35 and above 35. An independent t-test has been performed to find the mean differences.

TABLE 4

ANOVA Results for Experience-Based Difference

ANOVA						
		Sum of Squares	*df*	*Mean Square*	*F*	*Sig.*
Competency-Based Integration	Between Groups	3.485	2	1.743	1.766	.176
	Within Groups	108.515	89	.986		
	Total	112.000	91			
Conceptual-Based Integration	Between Groups	.889	2	.444	.440	.645
	Within Groups	111.111	89	1.010		
	Total	112.000	91			

Source: Sustainability in Business Education: A Study of Large-Sized HEIs of North India

TABLE 5

T-Test Results for Age-Based Differences

Subscale	*M Below 35*	*SD Below 35*	*M Above 35*	*SD Above 35*	*t-test*	*p-value*
Conceptual-Based Integration	4.4951	.35923	4.5844	.3819	-1.115	.268
Competency-Based Integration	4.3374	.42957	4.4848	.3862	-1.631	.106

Note: M Below 35/ SD Below 35-mean/ standard deviation for participants below the age of 35; M above 35/ SD above 35- mean/ standard deviation for participants above the age of 35

Source: Sustainability in Business Education: A Study of Large-Sized HEIs of North India

Table 5 explains that for conceptual-based integration, Levene's test confirmed the homogeneity of variance assumption, $F(89) = 0.23$, $p = 0.879$, and the independent samples t-test was not statistically significant, $t(89) = -1.115$, $p = 0.268$. Similarly, for competency-based integration, Levene's test satisfied the assumption, $F(89) = 0.066$, $p = 0.798$, and the independent samples t-test was not statistically significant, $t(89) = -1.63$, $p = 0.106$.

No significant statistical difference in the perception of the integration of sustainability has been found on the basis of the age of the teachers.

Gender-based differences: A t-test has been used to examine the difference in perceptions of the teachers regarding integration sustainability on the basis of gender.

TABLE 6

T-Test Results for Gender-Based Differences

Sub-scale	M_m	SD_m	M_f	SD_f	*t-test*	*p-value*
Conceptual-based Integration	4.4780	.31543	4.5473	.38760	-.809	.421
Competency-based Integration	4.2857	.44630	4.4330	.40246	-1.528	.130
Note: Mm/SDm- mean/ standard deviation for male participants; Mf/ SDf - mean/ standard deviation for female participants						

Source: Sustainability in Business Education: A Study of Large-Sized HEIs of North India

Table 6 shows that for conceptual-based integration, Levene's test confirmed the homogeneity of variance assumption, $F(89) = 3.176$, $p = 0.078$, and the independent samples t-test was not statistically significant, $t(89) = -0.809$, $p = 0.421$. Similarly, for competency-based integration, Levene's test confirmed the assumption, $F(89) = 0.001$, $p = 0.979$, and the t-test was not statistically significant, $t(89) = -1.528$, $p = 0.130$. These results suggest that teachers' perceptions of conceptual-based and competency-based integration of sustainability do not differ by gender.

Analysis of Students' Perceptions

Students' perceptions have been further analysed on the basis of gender and level of education.

Gender-based differences: An independent t-test was performed to find the mean differences. There were 335 male students and 467 female students in the data.

TABLE 7

T-Test Results for Gender-Based Differences

Subscale	M_m	SD_m	M_f	SD_f	*t-test*	*p-value*
Conceptual-Based Integration	4.2132	.67114	4.5775	.41461	-8.804	.000
Competency-Based Integration	4.1160	.65209	4.4353	.47357	-7.634	.000
Note: Mm/SDm- mean/ standard deviation for male participants; Mf/ SDf - mean/ standard deviation for female participants						

Source: Sustainability in Business Education: A Study of Large-Sized HEIs of North India

Table 7 depicts that for conceptual-based integration, Levene's test indicated a significant violation of the homogeneity of variance assumption, $F(800) = 108.31$, $p = .000$. With unequal variances, the independent samples t-test was significant, $t(514.2) = -8.809$, $p = .000$. For competency-based integration, Levene's test also violated the homogeneity of variance assumption, $F(800) = 47.815$, $p = .000$, and the t-test with unequal variances was significant, $t(575.498) = -7.634$, $p = .000$. There is a statistically significant difference in the perception of the students on the basis of gender differences. Research revealed that female students are more concerned with integrating sustainability into business education. In this data, two groups have different sample sizes; therefore, Hedges' g has been used to measure the effect size (Cohen, 1977; Hedges, 1981; Durlak, 2009).

Hedges' g = (M1-M2)/SD pooled

Hedges' g = (4.5775-4.2132)/0.53683=0.678613 (medium effect)

Cohen's d and Hedges' g are interpreted in a similar way. A rule of thumb used to interpret results is: small effect =0.2, medium effect = 0.5, and large effect = 0.8. The result shows that the effect size is medium.

Academic level-based differences: In order to examine the difference in perception between the students on the basis of academic level, a t-test has been applied. Two categories of academic level have been considered: "under-graduate" and "under-postgraduate". The number of students under-graduation are 349, and under post-graduation are 453.

TABLE 8

T-Test Results for Academic Level-Based Differences

Subscale	M_{UG}	SD_{UG}	M_{UPG}	SD_{UPG}	*t-test*	*p-value*
Conceptual-Based Integration	4.3582	.61020	4.4771	.52393	-2.909	.004
Competency-Based Integration	4.2350	.60055	4.3535	.55283	-2.900	.004

Note: M_{UG}/SD_{UG}- mean/ standard deviation for Under Graduate participants; M_{UPG}/ SD_{UPG}- mean/ standard deviation for Under Post-Graduate participants

Source: Sustainability in Business Education: A Study of Large-Sized HEIs of North India

Table 8 reveals that in the case of conceptual-based integration, Levene's test revealed a significant violation of the homogeneity of variance assumption, $F(800) = 11.557$, $p = .001$. As a result, an independent samples t-test was conducted with unequal variances, yielding a significant result, $t(685.351) = -2.909$, $p = .004$. For competency-based integration, Levene's test was non-significant, $F(800) = .764$, $p = .382$, and the independent samples t-test showed a significant effect, $t(800) = -2.900$, $p = .004$. This shows that the perception of the students regarding conceptual integration and competency integration is not the same for undergrad and postgraduate students.

Two groups have different sample sizes; hence, Hedges' g has been used to measure the effect size (Cohen, 1977; Hedges, 1981; Durlak, 2009).

Hedges' g => (M1-M2)/SD pooled

Hedges' g = (4.4771-4.3582)/0.563084 = 0.211159

The result shows that the effect size is small, as the Hedges' g value is closest to 0.2.

Integration Approach Preferred by Students

Respondents were also asked to respond to the approach they would like for integrating sustainability into business education. The various options have been given in the questionnaire, where respondents have the choice to select multiple responses. These options have been suggested by Rusinko (2010) and Sharma and Hart et al. (2014) in previous studies.

Table 9 below depicts that the majority of the students, i.e., 51.9 per cent, are in favour of embedding sustainability as a compulsory subject, followed by 40 per cent who support integrating at all academic levels.

TABLE 9

Integration Approach Frequencies (Students)

		Responses		*Percent of Cases*
		N	*Percent*	
Integration Approach	Compulsory Subject	416	24.0 per cent	51.9 per cent
	Optional Subject	205	11.8 per cent	25.6 per cent
	All Academic Level	321	18.5 per cent	40.0 per cent
	Elective Subject	196	11.3 per cent	24.4 per cent
	Mainstream	188	10.9 per cent	23.4 per cent
	Core Subject	181	10.5 per cent	22.6 per cent
	Separate Structure	75	4.3 per cent	9.4 per cent
	Existing Structure	115	6.6 per cent	14.3 per cent
	Irrelevant to Business Education	34	2.0 per cent	4.2 per cent
Total		1731	100.0 per cent	215.8 per cent
Total N= 802				
a. Dichotomy group tabulated at value 1.				

Source: Sustainability in Business Education: A Study of Large-Sized HEIs of North India

Some 24.4 per cent favour elective subjects, 23.4 per cent mainstream, 22.6 per cent core subjects, 14.3 per cent existing structures, and only 4.2 per cent are of the opinion that it is irrelevant to business education.

Integration Approach Preferred by Teachers

Teachers were also asked to give their response to the integrated approach.

TABLE 10

Integration Approach Frequencies (Teachers)

		Responses		*Percent of Cases*
		N	*Percent*	
Integration Approach	Compulsory	54	27.6	59.3
	Optional	10	5.1	11.0
	At All Academic Levels	47	24.0	51.6
	Elective	6	3.1	6.6
	Main Stream	24	12.2	26.4
	Core Subject	22	11.2	24.2
	In Separate Structure	11	5.6	12.1
	In Existing Structure	22	11.2	24.2
	Irrelevant to Business Education	0	0	0
Total		196	100.0 per cent	215.4

Total N=91

a. Dichotomy group tabulated at value 1.

Source: Sustainability in Business Education: A Study of Large-Sized HEIs of North India

Table 10 shows that a majority of the teachers, i.e., 59.3 per cent, favour embedding sustainability into business education as a compulsory subject, followed by 51.6 per cent who favour it "at all academic levels." 26.4 per cent favoured mainstream, 24.2 per cent core subjects and in existing structures, 12.1 per cent in separate structures, 6.6 per cent as elective subjects, and 0 per cent as irrelevant to business education.

It can be concluded from the above results that a majority of the academia is in favour of integrating sustainability as a compulsory subject at all academic levels.

Discussion

The results of the analysis match the previous literature. Researches have revealed that business schools in North India are at the nascent stage of integrating sustainability into the business curriculum (Singh *et al*, 2011; Lamberchts *et al*, 2013; Zeogers & Clark, 2014; Leal *et al*, 2016; Landrum & Ohsowski, 2017; Ciccullo *et al*, 2018; Fiselier *et al*, 2018; Correa *et al*, 2020). Most of the students reported that they had learned topics like business social responsibility, business ethics, and corporate governance that are related to SD, which shows the lack of integration of sustainability into business education (Pesonen, 2003; Christensen,

2007; Naeem & Neal, 2012; Tasai, 2013; Doherty, 2015; Weybrechet, 2017). Then their perception towards integration has been studied, and two components of sustainability integration have been extracted: conceptual-based integration and competency-based integration. Holliday (2010) also suggested in his interview-based research that in order to understand the environmental, social, and economic phenomena in business sustainability, they should be integrated in two stages: the first is the concept, and the second is the practical. Students do not have appropriate knowledge at their entry level of higher education (Edgar, 2015); so it is also suggested that, like other concepts of business, for example marketing, finance, and human resource management, the concept of SD should also be taught (Pesonen, 2003; Dawe, 2005), as knowledge influences the attitude of the students towards sustainability (Aziz *et al*, 2012). As sustainable development is no longer separate from corporate development, it becomes necessary to educate business professionals about sustainability and the impact of organisational functions on society and the environment (Sharma & Kelly, 2004; Sharma & Hart, 2014; Pesonen, 2003; Rusinko, 2010; Weybrechet, 2017). Hesselbarth & Schaltegger (2013), Lambrechts (2013), and Lans *et al* (2013) also advocate the competency-based integration of sustainability into business education to prepare a sustainable manager whose task is to change strategy, operations, products, etc, to more sustainable forms of economic value creation and deliberately embark upon social and environmental problems along with entrepreneurial practices. The absence of a significant difference in perception of teachers regarding sustainability in business education when concern is expressed on the basis of the gender, age and experience of the teachers can be justified by the same exposure and awareness about the importance of sustainable development phenomena in the business curriculum (Cotton, 2007). Further, the presence of a significant difference in perception among the students with regard to gender shows that females are more concerned with sustainability integration into business education (Kagwa, 2007; Tuncer, 2008; Al-Naqbi & Alshannag, 2018). Results also show a significant difference among graduate and undergraduate students; postgraduate students are more interested in sustainability integration, which might be due to the difference in offering courses at both levels of education (Wu *et al*, 2016; Tapia-Fonllem *et al*, 2017). The result of the preferred approach to integration shows that the majority of the teachers and students are in favour of sustainability-based papers being compulsory in business education, and Sharma & Kelly (2014) and Hazaima *et al* (2021) also had the same findings for business and accounting students and stated that it will not be taken seriously until it is mandatory. Rusinko (2010) stated that teaching sustainability as compulsory is a digging deep approach matrix.

Conclusion

Research revealed that, while the academia understands the importance of sustainability in business curriculum, the position of sustainability in business education is not prominent. Only a few related topics of sustainability have been taught and learned in the business school; the curriculum does not include any major sustainability-related topics. A successful business school needs to provide theoretical as well as practical knowledge of sustainability in business and social entrepreneurship, with the intention of educating potential managers and entrepreneurs on how to make money and take decisions without destructing the environment or the welfare of society. But the North Indian business schools lack the ability to incorporate sustainability into their business curriculum in both theoretical and practical

implementation. The study also explored two components of sustainability integration, which are conceptual-based integration and competency-based integration, based on the perception of academia. Both teachers and students strongly support sustainability in business education. Research also found that teachers' perceptions do not differ with the differences in their age, experience or gender. But in the case of female students, undergrad and postgraduate students are more supportive of sustainability integration. In the third stage of research, it has been reported that the majority of teachers and students are in favour of embedding sustainability in the business curriculum as a compulsory course at all academic levels. The study emphasises the embedding of sustainability into business education to provide conceptual knowledge and competency to the students, preparing them to consciously use sustainability in business strategy, management, and products. Sustainability should be taught on compulsory basis at all academic levels to provide conceptual and competency-based knowledge and skills to compete with the global challenges of sustainability related to business.

Having the assessed institution benchmarked at Category 1 autonomous status, the results are expected to be comparable or similar to those of institutions with the same benchmark accreditation across India, subject to regional, cultural, or psychographic variations. Further, the study results can be utilised for making up perspectives among the standard Indian and Western higher education institutions, provided these results represent the Indian counterpart.

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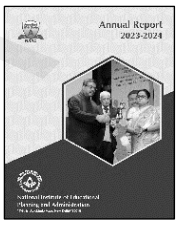

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Book Reviews

Govinda R.: ***The Routledge Companion to Primary Education in India: From Compulsion to Fundamental Right***, Publisher: Taylor & Francis, South Asia Edition, 2023, PP. 496, ISBN: 10, 1032824484 (HBK), ISBN:13, 978-1032824482

The present book is detailed account of the journey of primary education in India which made it a fundamental right from compulsory education. It is divided into twenty-four chapters which provide a detailed historical account of the Indian primary education from its inception till the contemporary times. This extensive volume illuminates historical debates, legislative initiatives and ongoing challenges that continue to influence the Indian education system. The initial chapters discuss the historical context and colonial influence on the indigenous learning systems which were sidelined during the British colonial rule, resulting in a reconfiguration of education. Further, it judiciously outlines the significant legislative efforts and policy developments which began in the early twentieth century, in 1910, when for the first time Gopal Krishna Gokhale raised the demand for primary education and in 1911 proposed a bill for compulsory primary education.

Chapter 1 explores the rise of local learning systems, which emerged as indigenous institutions before they declined under the colonial rule and were replaced by the contemporary kind of formal schooling. The spread of missionary schools in the nineteenth century facilitated education for diverse groups, particularly the scheduled castes, through religious conversion. The first push for the right to education came with Britain's Compulsory Primary Education Act of 1870, legislated in 1891. In India, nationalists namely, Dada Bhai Naoroji and Jyoti Rao Phule advocated for similar reforms through the 1882 Hunter Commission, which promoted vernacular instruction and private participation in primary schooling. Gandhian philosophy later revived indigenous education through Nai Talim in 1937.

Chapter 2 outlines early efforts in Gujarat toward Compulsory Primary Education (CPE) in 1893, including public libraries, girls' education, and child labour restrictions. The Baroda Compulsory Education Act of 1914 aimed to include all children, particularly girls, SCs, and STs. Gopal Krishna Gokhale's 1911 bill for CPE, later discussed in Chapter 3, faced challenges despite persistent advocacy. A similar attempt in Mysore in 1913 led to state regulations in 1914, though it excluded girls, complicating caste and class struggles as documented in Chapter 4. Despite school expansion in the 1920s, progress remained slow, with a new attendance scheme introduced in 1944-45 after decades of effort.

Chapter 5 explores the pivotal 1918–1920 phase in the national CPE discourse, with education shifting to provincial control under the 1919 Government of India Act. Financial constraints and nationalist movements hindered uniform implementation. While urban areas saw progress, administrative inefficiencies, school closures, and gender disparities

persisted. The 1927 Quinquennial Report noted school closures in Madras, Bihar, and Orissa, highlighting governance challenges. Punjab and Delhi were exceptions to rural struggles in implementing CPE. The 1940s, characterised by political instability and the outbreak of World War II, further complicated the expansion of compulsory education. Institutional and procedural challenges exacerbated the difficulties in implementing CPE during this time. These themes continue into Chapter 6, which discusses the financial structures of education policies, particularly the disparities in the implementation of free education in urban areas versus fee-based education in rural regions. The chapter also examines the impact of decentralisation and the absence of dedicated provisions for girls' education during this period.

Chapter 7 examines the coexistence of diverse educational institutions and the impact of caste-based discrimination on access to education. Macaulay's Minute (1835) promoted English education, shaping India's formal schooling system. However, compulsory education remained debated among nationalist leaders. Chapter 8 explores Gandhi's opposition to English education and his advocacy for *Nai Talim*, which emphasised self-sufficiency and skill-based learning. He rejected compulsory education, arguing for an indigenous system aligned with India's socio-cultural context.

Chapter 9 examines the educational landscape from the 1930s to the attainment of independence as during this period, discussions on the transfer of power to provincial governments intensified, but a lack of consensus on CPE persisted. The financial constraints of the colonial administration further restricted the expansion of education. The National Planning Committee (1938) advocated free education for ages 6–14, while the Sargent Report (1945) reviewed British policies and recommended free education for both boys and girls with the importance on the Wardha Scheme of Education. These developments reflected an increasing recognition of the need for a structured and inclusive education system in post-colonial India.

Chapters 10 to 12 examine post-independence education, with Article 45 mandating free primary education, though financial challenges hindered implementation. The Kher Committee followed colonial models, prioritising other national concerns. The Kher Committee initially recommended achieving UEE within a ten-year timeframe; however, shifting policy priorities and financial limitations led to continuous delays, as illustrated in Table 3.1. the evolution of Article 45 until the 86th Amendment (2002), discussing decentralised education structures and regional disparities reviews post-independence progress, noting systemic inequities, teacher training issues, and funding shortages. Chapter 13 traces Universal Elementary Education (UEE) policies from the First Five-Year Plan (1950) to initiatives like Sarva Shiksha Abhiyan (SSA).

Chapter 14 evaluates the long-term outcomes of India's education policies, noting how several systemic issues from the colonial era persisted well into the post-independence period. The chapter revisits the challenges posed by the dyarchy system introduced in 1919, underscoring its long-term impact on the structuring of primary and middle school education. The absence of uniformity in educational levels led to disparities in learning outcomes across states. During the contemporary era the Right to Education (RTE) Act of 2009 aimed to ensure universal education but faced criticism due to poor student performance. Amendments in 2017 linked learning outcomes to policy changes under NEP 2020, shifting the reform approach. Ongoing centre-state debates and multiple school

boards have further complicated educational management and deepened socio-economic disparities.

Chapter 15 examines the British schooling model in India, shaped by 19th-century missionary schools and evolving national education efforts. Gandhi's reforms emphasised basic education, but a unified system remained challenging. The Saraswati Shishu Mandir (1952) and Vidya Bharati (1970s) reflected ideological influences in education. Political shifts continued to shape the National Curriculum Framework even after independence, highlighting the challenges in maintaining educational independence. On the other hand, Chapter 16 explores the debate on education's role in employment. The colonial system prioritised administration over practical skills, a legacy that persisted post-independence. Gandhi opposed British-model schools, emphasising nationalist objectives. Despite efforts like Work Experience, SUPW, and NSQF, vocational training remained misaligned with economic needs.

Following the broader discussion on formal education, Chapter 17 examines the evolution of Non-Formal Education (NFE) in response to global trends. Introduced in 1974, NFE targeted the underdeveloped states but had limited impact. The 1986 NPE incorporated NFE, while the 1990s programmes like EGS and AIE expanded access but faced quality concerns. The 86th Amendment (2002) and Article 21A, enforced in 2010, shifted focus to formal schooling over alternative education. Chapter 18 traces the historical trajectory of compulsory education, from the colonial era to post-independence India. It highlights the persistent limitations in achieving universal school enrolment due to various socioeconomic factors. Despite policy advancements, post-independence reforms did not significantly alter educational participation rates, as financial constraints continued to limit government expenditure on education. The prevalence of child labour due to extreme poverty further complicated efforts to implement compulsory education. The author critically examines the use of the term 'compulsory', linking it to historical debates where no consensus existed on a unified national schooling model. This discussion underscores the long-standing challenges in enforcing compulsory education in India.

Chapter 19 examines the participation of girls in school education, tracing developments from the colonial period to modern times. While various provisions have been implemented to promote girls' education, these efforts have primarily addressed equality rather than equity. Despite legislative and policy interventions, disparities in access and retention rates for girls continue to persist. The chapter emphasises that achieving true educational equity requires more than just structural reforms; it necessitates a comprehensive approach addressing socio-cultural and economic barriers. Chapter 20 provides a comprehensive examination of the historical trajectory of primary teacher preparation, tracing developments from the colonial period to post-independence India. The discussion emphasises the centrality of teacher salaries, particularly as highlighted in the National Policy on Education (1986). The Justice Verma Commission played a crucial role in restructuring teacher education institutions, ensuring greater accountability and standardisation. However, the chapter underscores that the quality of teaching remains intrinsically linked to student learning outcomes. Various debates have emerged regarding the role of teachers as key stakeholders in delivering quality education. These discussions have revolved around the need for continuous professional development, equitable remuneration, and systematic improvements in teacher training.

Chapter 21 critically explores education from multiple perspectives, analysing the ideological positions of non-governmental organisations (NGOs), private education providers, and government policies. The Common Minimum Programme (1996) served as a key policy intervention that shaped the discourse on universalising education. A significant debate emerged among various committees regarding the inclusion of children aged 6–14 years within the formal schooling framework. Additionally, there was increasing advocacy for extending early childhood education to the 3–6-year age group. The implementation of the Right to Education Act (RTE) further intensified discussions on the role of private schools and their obligations under this legislative framework.

Chapter 22 documents the legislative journey of the Right to Education (RTE) Act, tracing its development from 2003 to its enactment in 2009 and subsequent implementation in 2010. The constitutional amendment in 2002, which inserted Article 21A, laid the groundwork for recognising education as a fundamental right. However, due to financial constraints, the RTE Act was limited to children aged 6–14 years, with only partial provisions for preschool education for the 3–6-year age group. The chapter examines the disparities between legislative intent and execution, particularly in terms of school admissions, compulsory education, and infrastructural provisions. Moreover, it provides an in-depth analysis of governance, monitoring mechanisms, and regulatory frameworks essential for the effective implementation of the Act.

Chapter 23 highlights critical gaps in the RTE Act's implementation, stressing the need for continuous quality assurance. Diverse school management structures pose challenges to equitable education. The chapter critiques the No-Detention Policy, balancing academic standards with universal access. The concluding chapter reflects on the historical trajectory of the RTE Act, linking its genesis to contemporary challenges in governance, monitoring, learning outcomes, teacher availability, and persistent educational inequities. While the quality of primary education is paramount, the chapter argues that it must be viewed as an evolving process, beginning from a child's entry into school and extending throughout their educational journey.

The book on the whole provides a comprehensive analysis of evolution of primary education from its compulsory stage to a fundamental right, and traces its journey from the colonial rule to contemporary India. The inclusion of archival materials and official documents further enhances its academic value, with the dynamic narratives seamlessly intertwining past and present developments to facilitate a deeper understanding of contemporary educational challenges. It underscores the enduring political, economic, and social complexities that continue to shape education policy in India. The book presents a rigorous analysis of the long and complex journey of primary education in India, offering valuable insights into the historical, political, and social dimensions of education policy from the colonial period to the present and offers an authentic account of educational developments. Given its extensive historical and policy analysis, this book should be considered a foundational text for comprehending the trajectory of primary education in India, not only as a historical account but also as a guiding framework for future policy formulation.

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Little Angela W.: ***Development, Education and Learning in Sri Lanka: An International Research Journey,*** London, Publisher: UCL Press, 2024, PP. XI + 496, ISBN: 978-1-80008-156-7 (HBK), Price: 4999.00

The discourse of development has often been West-centric. The West defines the components and the parameters of development. In this discourse, the lessons and contributions of the countries from the South are often overlooked. The countries of the Global South face different sets of challenges owing to their differences and diversity. Therefore, it is pivotal to have such developmental frameworks that understand the distinct context of the developing countries. Such frameworks underline that development is not a universal concept. It is this understanding that the book *Development, Education and Learning in Sri Lanka* seeks to underscore. The book under review emphasises the need for decolonisation of education and development discourse by presenting the case of Sri Lanka.

It is a result of the author's extensive research engagements with the Sri Lankan community. She maps the educational landscape and traces the trajectory of educational development in the country, thereby enabling a holistic understanding of the Sri Lankan context. The book focusses on the reciprocal influences between international development discourse and Sri Lankan ideas, policies, and practices. She also examines the degree to which empirically tested ideas from international discourse have been applied in the Sri Lankan context.

The book is meticulously organised into five parts, and sixteen chapters with each part shedding light on different aspects of Sri Lanka's development and educational journey. The chapters in different parts of the book help in building a broader understanding of the ways in which developing countries negotiate with existing frameworks while having their own specificities.

The first part of the book, titled "Mapping the Journey," maps the author's research journey in Sri Lanka providing a requisite background of Sri Lanka's journey of development and education and its comparison with others systems of education. The part helps in contextualising the growth and development that has taken place in Sri Lanka. It chronologically shares the prominent historical, political and social events that took place in and outside the country that influenced the policies directly and indirectly. There is presence of enough literature talking about the impact of international organisations and their policies on the developing countries including Sri Lanka. However, very limited has been written about Sri Lanka's contribution. In this regard, the author makes a significant contribution by highlighting Sri Lankan ideas and policies which may have influenced the international development community.

Here the author has underscored the importance of contextualising the study. Through her own empirical study, the author shows how several theories developed in the western context have been applied to study non-western contexts. There are certain key lessons which the author imparts, especially for south Asian researchers. She emphasises not confining the research to formal education systems only. In developing countries, a large number of children remain outside of formal education systems. Another point she adds is to take into consideration the diverse factors such as ethnicity, gender, caste, language, class,

and their intersection with the education, which have an important role to play in South Asian societies. She also suggests that researchers need to share their country's experiences and develop national models that would lead to more knowledge sharing.

The second part of the book, "Modernisation, Human Capital and Dependency," seeks to explore whether international discourse concepts concerning education and development have undergone any empirical testing in Sri Lanka. It further traces the potential origins of these ideas within the Sri Lankan context. One of the chapters discusses different theoretical frameworks that dominated the process of development in Sri Lanka during the 1950s to the 1970s. These frameworks had their origin in the West and had strong influence on development discourse which was not limited to Sri Lanka. This section also highlights Sri Lanka's journey of introducing reforms in an attempt to decolonise the curriculum in 1970s. In that direction, examination reforms were introduced in 1970 in order to replace the existing models with local exams. However, multiple factors led to the failure of these reforms and these were rolled back in 1977.

The next part of the book is "Basic Needs and Education for All." It engages with some often overlooked ideas and policies in the international discourse that have been influenced by Sri Lankan ideas and policies. It begins by shedding light on the principles that influenced Sri Lankan policies and practices. It specifically looks at the reforms introduced between 1931 and 1991 that sought to provide educational opportunities for all. It was during this period that Sri Lanka got independence and democracy was established. Therefore, the government was looking to launch series of reforms to promote welfare. The section sheds light on the various interest groups and their vested interests influencing different reforms. The focus is on the education policy reforms taking place between 1931 and 1991. The author divides it in two phases: 1931-70 and 1970-91, to draw the comparisons and locate the shifts that took place in the Sri Lankan political milieu.

The fourth part of the book is titled "Globalisation, Education and Social Disparities." The chapters in this part look at the expansion of educational access, alongside persistent social disparities, in the context of globalisation. It explores the explicit and implicit connections between globalisation, education, and social inequalities. The discussion centres around the plantation community with reference to their education and employment and their disadvantaged position in comparison to other population of the country. It highlights how the coffee, tea, and rubber industries shaped education access—often excluding plantation workers while enabling broader access beyond the estates through state revenues generated from exports. The author shares the international collaborations leading to different projects to improve the status of education in the plantation community. From here, the discussion segued to manifestations of globalisation, particularly in the context of education and resulting repercussions. This section indulges in an important debate as to "what is successful globalisation?" It tracks changing economic and educational policies, shifts in labour market demands, and the growing role of public, private, and international educational providers. It shares some cases from other countries of Asia and highlights the importance of integrating peace and sustainable development as parameters for the same. Further the section has a chapter that provides a comparative lens, examining why Sri Lanka was once considered a model for development and has lagged behind other Asian nations in terms of educational and economic progress. The author contextualises Sri Lanka's struggles

within broader regional dynamics, exploring how different policy decisions have influenced outcomes.

The last part, "Sustainable Development and Learning," shifts focus to the evolving discourse on sustainability within international development. It presents three research-based chapters on crucial classroom practices—learning English, learner grouping, and assessment—framing them within the larger idea of sustainable learning. These chapters deal with different aspects of learning such as different approaches and tools employed by the teachers for teaching, examining classroom practices, assessment methods and various other methods employed in everyday teaching learning processes. In the last chapter of the author reflects on the learnings in the context of development and education in Sri Lanka. The chapter brings together different themes, ideas and practices shared in the book. It highlights three pivotal lessons. First, one needs to stop looking at education in isolation. Instead, it needs to be understood by taking into consideration other development sectors. Second, each country presents a unique context. It is indispensable to understand a country within its distinctive context. Last, one needs to prioritise learning as the central focus and align it with broader perspectives on the purpose, values, and approaches to development. The part reflects that sustainable development must go beyond environmental and economic aspects to also embrace personal and educational sustainability emphasizing what is being learned, how it is being learned, and whether that learning is enduring and meaningful over time.

The book offers an in-depth exploration of development and educational discourse in Sri Lanka. Drawing on the author's extensive research experience and deep familiarity with the Sri Lankan context, it effectively addresses a variety of themes and topics in a critical manner. The insights provided not only enhance the understanding of Sri Lanka's context but also contribute to developing perspectives for researching diverse settings.

Engaging with the themes of development, education, learning and Global South, the book makes a plea for a much needed ontological and epistemological intervention. Such an intervention would allow the reader to look beyond the unproblematically accepted premises on West-centric knowledge systems. There have been separate scholarly works that question the dominant discourse of development through post-development, dependency and other perspectives. There have also been works that challenge the Northern/Western epistemologies, such as those focussing on indigenous knowledge system. The book provides a comprehensive interlinkage of these dimension by entwining them with the issue of education and contextualising the same. Added to this is the experiential dimension where the study of Sri Lanka is not presented from a detached perspective but is based on the author's engagement with education in developing countries, especially Sri Lanka.

On the whole, the book is a compelling reading to develop an in-depth understanding of the linkage between a country's educational experience and the global patterns of education and development. These analyses are contextualised within international development discourse themes, ranging from modernisation and basic needs to globalisation and sustainable development, some of which have been influenced by Sri Lanka's experience. The quality of analysis is testimony to author's long engagements with the context and issues. The book stands out for having situated education discourse within the social,

political and economic contexts. It will prove to be quite useful for the policy makers, teachers and students in the field of education and development.

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