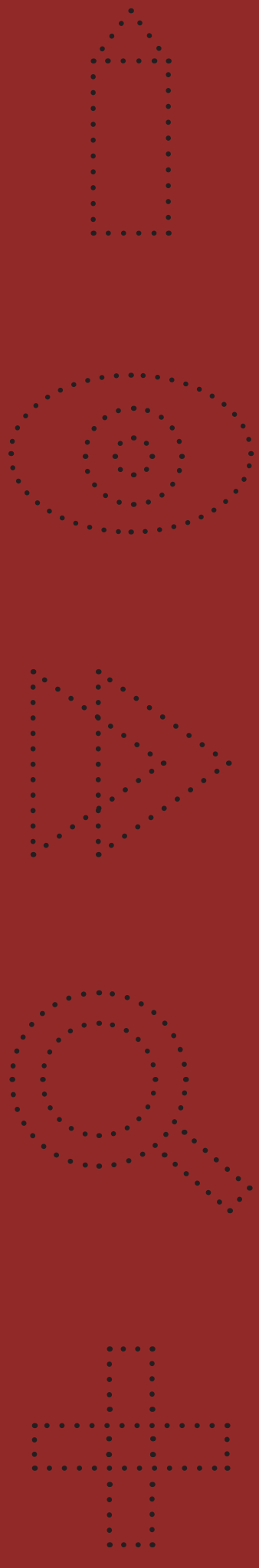

Eighteen Essays on Secondary Education

A compendium of insights and ideas about the state of education in India.

Narotam Sekhsaria Foundation

Education is the most powerful weapon which you can use to change the world.

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Contents

Foreword

PADMINI SOMANI
Director
Narotam Sekhsaria Foundation

Education is crucial to individual success, it paves the path towards an inclusive society, it is also the bedrock of freedom and democracy.

41% of the Indian population is 19 years or under, and education is critical for them to grow into aware, active citizens with a good quality of life.

With almost 1.5 million schools and more than 240 million enrolments, India has one of the largest and most complex education systems in the world. Since independence, primary education has been the priority in the country, with more than 50% of public expenditure in education allocated to the primary education system. While this has led to a higher focus on elementary education and improvements in the primary education level, the secondary education system has been woefully neglected. In fact, government spending on secondary education has remained stagnant for ten years at 1% of the GDP. The system is plagued by alarmingly low enrolment and high dropout rates. Secondary education is in such a dire that it is often referred to as "the forgotten middle."

National Statistic Survey Organisation's (NSSO) seventy-first round report, "Social Consumption: Education" shows that the gross enrolment ratio in secondary education in 2014 was 87%, as compared to 100% in primary education. This places India far behind regions such as Central Asia with 96% enrolment and countries such as Brazil and Sri Lanka with 100% enrolment. India is also plagued with absenteeism and 10% of those enrolled in the Indian secondary system do not attend school. Students from marginalized and vulnerable groups including women have higher dropout and absentee rates. This is a multilayered problem with a variety of reasons contributing to it.

The primary cause for low enrolment and high absenteeism is that Indian children do not see education as a necessity. They do not find meaning in the education system. These can be attributed to the system overvaluing memorisation with a focus, mainly, on passing examinations. Students face rigid curricula with no emphasis on creativity, which leads to boredom and demotivation. There are no opportunities within the curricula for children to develop individual talents. Therefore most students perceive school as a place to be avoided.

Students from financially weaker sections often drop out of school so they can work. The girls can help with domestic chores while the boys focus on supplementing the family income. This problem is also compounded by the lack of easy access to school. As shown by an NSSO survey, there is an urban-rural divide when it comes to access to a secondary school within 5 kilometres from home. Paired with concern for girls' safety, the lack of access leads to an even higher dropout rate for girls.

Another reason for the number of dropouts is the quality of teachers. Teacher quality is directly related to students' wellbeing and their interest in school and also correlates to learning outcome, which is one of the parameters used to assess education systems. Regrettably, there is little consolidated information on learning outcomes for secondary schools in India. However, findings from ASER (Annual Status of Education Reports) document elementary level learning deficits that are indicative of the gaps in learning outcomes in the secondary level as well.

Alarmingly low enrolment and high dropout rates plague the system. The state of secondary education is so dire that it is often referred to as "the forgotten middle."

Teacher quality is especially crucial to learning outcomes in subjects like mathematics and science but retention of high quality maths and science teachers remains a task. What's more, studies show that the proportion of undergraduates willing to opt for a teaching career has declined and existing teachers remain unmotivated towards making a change in the system.

Finally, one of the most neglected issues leading to high dropout rates and absenteeism is children's vulnerability. Students in secondary school are adolescents. Studies show that cognitively, adolescent brains are not fully developed, which makes them more susceptible to risk-taking behaviour. Compounded with a lack of guidance, this can lead young adults towards substance abuse and poor value systems. Unfortunately, with the education system's emphasis only on academics, the schools are not able to equip adolescent students with life and coping skills.

It is appalling that not only has the government failed to take this vulnerability into account, it has also distanced itself from holistic adolescent health education. Government academies such as the Industrial Training Institutes (ITIs) only cater to dropouts from the tenth and twelfth standards, without taking into account the fact that a majority of children leave school before they even reach the tenth standard. In fact adolescent health education is also neglected by non-governmental organisations.

Narotam Sekhsaria Foundation works with Salaam Bombay Foundation which is one of the few organisations that work at school level to address adolescent issues in order to improve student retention. This innovative model focuses not just on sports, arts, media and nutrition, but also on vocational and technical skills. The Salaam Bombay approach challenges the general opinion. Vocational and technical training are for academically weaker students and hence should be conducted outside of school.

The impetus to create this compendium on secondary education came from the poor state of education in India paired with the lack of focused interventions that take care of adolescent issues in school. Narotam Sekhsaria Foundation has brought together several experts and organisations specialising in different aspects of secondary education. By harnessing their diverse experience and ideas, our hope is that the compendium will assist in the foundation's decision making. With this collective knowledge, we aim to

For every 100 students in primary school,

only 45 enrolled in secondary school.

10% of those enrolled in the Indian secondary system do not attend school. Students from marginalized and vulnerable groups including women have higher dropout and absentee rates.

strive towards implementing interventions in the secondary school space to bring about all-around development.

The compendium begins with a brief explanation of the secondary school context followed by chapters that elucidate upon different aspects of the ecosystem, addressing various gaps. The compendium is divided into sections such as teaching, in-depth information about inclusive education, education ecosystem and holistic education. The essays are meant to articulate an array of perspectives that include voices of students, teachers and educationists, subject matter experts, and organisations working in the secondary school space.

The journey of bringing this compendium to life has been immensely enriching. I would like to thank all the contributors who generously agreed to be a part of the process of writing, redrafting, and reviewing. I would also like to extend my gratitude to the reviewers, the editorial team and the designer of the compendium for their valuable contributions.

It is my honour to present this compendium on secondary education to all the readers.

Students in secondary school are adolescents. Studies show that cognitively, adolescent brains are not fully developed, which makes them more susceptible to risk-taking behaviour.

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Secondary Education in India
Executive Summary

Numerous challenges face Indian education today: lack of skilled teachers, inclusive and student-centric education, learning outcomes, infrastructure, and oversight, to name a few. This compendium features 18 essays that review the education system in India and offer insight into the role the non-governmental sector can play in closing these gaps.

According to Census 2011 data, 41% of the Indian population is 19 years or below. For India to reap the benefits of its large demographic dividend, children must be educated to become responsible citizens and skilled workers in the future knowledge market. To do so, drastic changes are needed in funding systems, infrastructure, monitoring processes, and curricula and teaching methodology.

One of the weakest points in the education system today is secondary education. In recent decades, secondary education has performed poorly in terms of infrastructure and quality of education compared to primary and higher education. The impact of this is seen in the number of dropouts in secondary education, and the mushrooming of private schools in this space (Serena Fernando, *Secondary Education in India: An Overvie*w).

The poor performance of the secondary education sector can be attributed to the fact government expenditure on secondary education has remained stagnant, at 1% of the gross domestic product (GDP). Due to the state's focus higher education, and later, primary education, secondary education remains neglected (Protiva Kundu, *Government Financing of Secondary Education in India: A Snapshot*). Therefore, there is a real need for the non-governmental sector to intervene in this area, and perhaps establish public–partnerships to address this gap.

If India wishes to reap demographic dividend, it needs to commit to ensuring that today's children are prepared to enter a more diverse and competitive worksphere that offers a multitude of options. Career guidance and vocational training need to be made part of the curriculum from secondary school onwards. Statistics show that while 32.5 lakh students are enrolled in secondary schools in India, only 15.2 lakh students are enrolled in higher secondary schools. This shows that a large number of children drop out in secondary school, either due to socioeconomic problems or because they have been squeezed out by the education system for poor performance. Vocational training could be a boon for these children to find skilled jobs. It would also enable the country to offer vertical mobility to a section of the population who may have been restricted to unskilled labour otherwise (Ravi Nayse & Dr Abhijit Prabhughate, *Integration of Vocational Education into Secondary Education*).

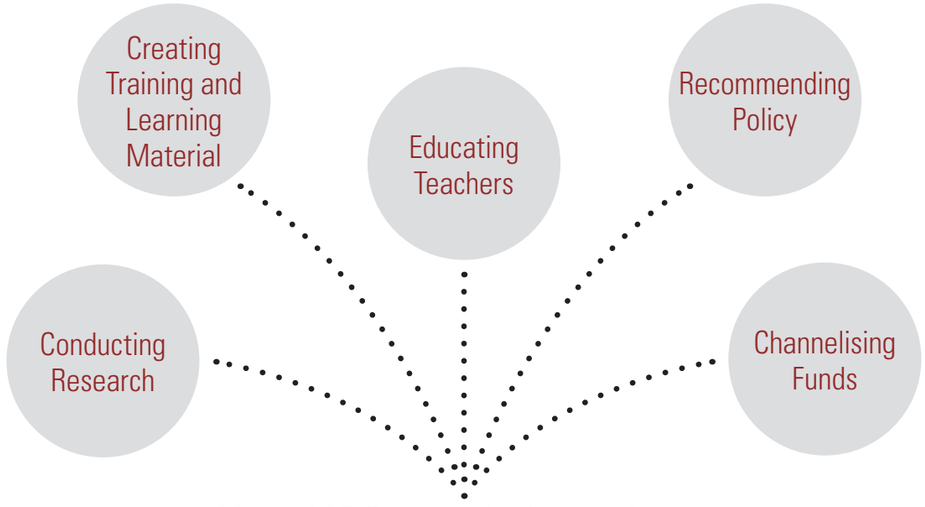
Teaching methodology also need to be made more participative and student-centric, so that teachers merely play the role of the guide, while students learn from each other and through discovery. Technology may play role in this process; however, it should be kept in mind that the technology should encourage children to create their own content or interact with each other in innovative ways, rather than treating them as passive consumers of animated videos or lecture-style videos (Chandita Mukherjee, *Use of Information and Communication Technology (ICT) in Secondary Education*). The non-governmental sector can play a key role in generating open source software that can be used in schools to encourage children to create their own videos, interviews, and other multimedia projects and share it with each other.

To thrive in a competitive work environment, students must be taught vital vocational skills that will prepare them for work in various trades. Currently, the vocational education system in India operates in parallel to the mainstream education system, leading to certain challenges. Students with a vocational education fail to acquire the formal educational qualifications to progress in their careers, while students in mainstream schools continue to drop out without the requisite skills to secure a stable career. Therefore, the Salaam Bombay Foundation offers the skills@schools programme that integrates skills training into secondary education to provide students vocational education while retaining them within the mainstream educational system. This model may be implemented by other non-governmental organisations in other parts of India (Gaurav Arora & Anamika Dutt, *A Case Study of Integrating Skills at School: The Salaam Bombay Foundation Model*).

Also, at a time when crimes against children are rising and children are under increased pressure from faster lifestyles, the academic system, and misinformed parents, they need to be taught how to cope with future challenges that they may not even be able to envision yet. To do so, they must be taught decision-making skills, time-management skills, and critical thinking (Rajashree Kadam & Jean Miranda, *Life Skills Education: Integration in Secondary Education in India*). This kind of life skills training will ensure that students grow into holistic adults who not only have the requisite technical skills, but also the soft skills necessary to navigate the future work environment. Schools should also provide access to counselling so that students can address whatever emotional turmoil they may be facing, without it escalating into more serious issues later in life (Upasana Saraf, *School Counselling: Ensuring Positive Mental Health for Secondary Education Students*). It is fairly obvious now that adults will have difficulty monitoring all the content that the child consumes via TV or computers. However, what is possible is to educate the child to identify risks and respond accordingly.

41% of the Indian population is under 19 years or below. To reap the benefits of its large demographic dividend, children must be educated to become responsible citizens and skilled workers in the future knowledge market.

Another key pain point is the education of girls and marginalised groups in India. The enrolment of girls in schools continues to be frustratingly low. While equal numbers of boys and girls are enrolled in primary schools in India, about 82% of girls drop out by the time they reach secondary education. The reasons for this include the lack of schools, poor quality of education, and socioeconomic and cultural reasons. To address this gap, and to bring more women into the workforce, non-governmental organisations have an important role to play in raising awareness, providing life skills training, investing in infrastructure, and enhancing curricula (Medhavinee Namjoshi, *The Importance of Girls' Education at the Secondary Level: Gender Stereotypes and Interventions*). Also, vocational education is particularly important for this group, as it may give them an opportunity to sustain themselves even if they are forced to discontinue their schooling. Non-governmental and private organisations can help in researching teaching methodology for life skills training and vocational training and can assist both private and public schools in developing learning material and imparting these skills to children. In addition, as part of their life skills training, girls should be taught how to deal with puberty, so that it does not become a reason for them dropping out (Tshering Bhutia & Dr Abhiram Mehendale, *Adolescents Health Education in India: Current Status and Opportunity for the Private Sector*).



How NGOs can help to shape the narrative of education in India.

It has been repeatedly shown that female teachers and personnel make students feel more comfortable in school and reduce the likelihood of dropping out (Serena Fernando, *Secondary Education in India: An Overview*). Female staff should be present throughout the education ecosystem—in school buses, in classrooms, and during school trips. This is also in the case of very young children (both boys and girls) to reduce risk of sexual abuse. Children also need to be provided a safe learning environment, where they can learn without fear of abuse or exploitation. To do so, technology may be leveraged in the form of GPS-enabled ID tags or by installing CCTV cameras across campus (Upasana Saraf, *Best Practices to Promote Safety in Schools*). Another way to increase safety on campus is to boost community participation. Schools should work on involving parents more closely in students' activities and in building close relationships with state authorities and emergency services. This would aid not just in safety, but will also help decentralise the education system and give students access to knowledge held by local community members (Niranjanaradhya V.P., *Community Participation in the Universalisation of Equitable Quality School Education*).

In addition, teachers and schools are not equipped to address the needs of children with special needs. Teachers need to be informed about how to integrate these children into the classroom without them feeling threatened or becoming disruptive. In turn, teachers should also be educated on how to identify children with mild autistic spectrum or learning disorders and refer them to professionals who can provide additional support. Considering that children spend a bulk of their time in school, teachers are well positioned to identify issues early (Shamin Mehrotra & Jehanzeb Baldiwala, *Children with Special Needs and Inclusive Education*). It has been shown that inclusive education will benefit not only the children with special needs, but also the other children in the class who learn how to address differences between one and another.

Education infrastructure is still lacking to reach Schedule Castes (SCs), Schedule Tribes (ST), and Denotified Tribes (DNTs). Children from these areas are largely educated in residential schools that lack basic personnel and infrastructure. Language also proves to be a problem, as some of these children come from oral cultures or do not speak the language that is the medium of the school. According to the 2011 Census, the ST community accounts for 8.6% of the total population of India, while the estimated population of NT and DNT is about 13%. For the benefit of these children, funding should be increased to these schools to improve infrastructure and learning material more suited their needs should be developed (Kishore Darak, *Education of Marginalised Communities with Special Focus on Scheduled Tribes, Nomadic Tribes, and Denotified Tribes*).

Another pain point that continues in education in India is the diversity of languages. Children are often taught subjects in languages that they do not speak at home, and therefore, learning outcomes tend to be poor. Therefore, bilingual or multilingual teaching and learning materials are needed to reach children. In addition, the teaching of languages should not be confined to simply that period, but should be more closely bound to subject teaching, so that children develop the vocabulary and skills to discuss technical topics in multiple languages as well. This will not only enhance children's language abilities, but will also strengthen vernacular languages in India (Anjali Naronha, *The Importance of Developing Vernacular Languages*).

The country is also lacking a robust school assessment system to improve the standards of schools across the country. Schools inspectors not only assess schools, but can also guide school heads in the right direction. Currently, school inspectors are overburdened and do not have the capacity to guide each school under their care. There is a need to strengthen this system, use technology to revamp it, and roll out self-assessment to bridge the gap (Basanti Roy, *School Assessment for Whole School Development*).

One of the biggest lacuna in the education system is with regards teacher training. Teachers are not taught how to make classroom teaching interesting for this generation of children who have easy access to information via phones and computers. Though a wide teacher training network already exists, what is needed is to strengthen this system and to create a centralised policy to give it more direction. Also, it has been pointed out that there are certain areas within teacher training that particularly need focus. For example, teachers are not imparted subject knowledge nor are they taught how to teach subjects (particularly mathematics and languages) in interesting ways in the classroom (Shweta Shripad Naik, *Building Teachers' Productivity: Mathematics Education Training*). This translates into poor learning outcomes among children. For example, Class 5 students were tested on a range of reading skills and only 40% to 54% of students could give correct answers. In mathematics, students' proficiency in a range of mathematical domains (the number system, basic operations, measurement, geometry, and patterns) and cognitive processes were tested. The percentage that selected correct answers ranged from 51% to 54% (Hemangi Joshi, *Gaps in the Public Teacher Education System and Opportunities for Non-governmental Organisations*). Also, it has been demonstrated that imparting knowledge of the social sciences to all teachers (and not just those who teach the subject) can be of great value. Knowledge of the social sciences can help teachers contextualise the subject they are teaching, understand the context of the child, and frame their teaching within a larger understanding of the history of education (Rashmi Paliwal, *Making Sense of the World: Social Science Learning in Secondary Education*).

Also, with the burgeoning population, private schools have bridged the gap and are providing education for a significant share of India's children. However, teacher education programmes rarely reach these private schools. Therefore, the non-governmental sector can play an important role in reaching the most recent research on teaching methodology to these schools. Also, NGOs could organise field trips for students and teachers or private and public schools to widen their exposure and interests.

This compendium aims to provide direction for non-governmental organisations working in the area of education and opens up new possibilities for how these organisations may aid in developing the potential of India's future generation. There is a great deal of potential for NGOs to shape the narrative of education in India by assisting the state in conducting research, creating training and learning material, educating teachers, channelising funds, and recommending policy. To direct India's young population into becoming aware and knowledgeable citizens who espouse the values of democracy, immediate change is needed.

“

Narotam Sekhsaria Foundation has brought together several experts and organisations specialising in different aspects of secondary education.

With this collective knowledge, we aim to strive towards implementing interventions in the secondary school space to bring about all-around development.

”

Secondary Education in India: An Overview

SERENA FERNANDO

"*The state cannot claim to have discharged its duty till it has provided for every single individual the means of acquisition of knowledge and betterment… To my mind, the requisite standard for such education is the secondary stage and I am convinced that regardless of the question of employment, the state must make available to all citizens.*"

MAULANA ABUL KALAM AZAD (1953)

Introduction

Education plays a crucial role in the socioeconomic (human) development of a country (Gouda and Sekher, 2014). It empowers weaker sections of society to overcome their limiting circumstances and make choices in order to transform their lives. This type of empowerment enables the creation of a society based on principles of justice and equality. Hence, education is a public good and is one of the most important elements of development for India. India's education system is a replication of the British colonial system, with complexities and vast regional variations at all educational levels throughout the country.[1] In India, the education system is divided broadly into primary, secondary, and tertiary education. According to the Indian Constitution, education is on the concurrent list, which means that the national and the state governments shape the education system; however, the responsibility of secondary education rests especially with the state (Mudaliar Commission Report 1953; Porter 1967; Zachariah 1970). India has toiled hard to achieve a high literacy rate, which has grown from 18% in 1954 to 74% in 2011. However, access to and the quality of education available are major causes of concern even today.

This paper focuses on lower secondary education, which is referred to simply as secondary education (Classes 9–10). The paper gives an overview of secondary education in the entire country with respect to the rates of enrolment and dropout and the state of infrastructure required to provide high quality secondary education. Finally, the paper will move on to discuss various challenges in the education sector, along with ways and means to address these gaps.

The essay gives an overview in the entire country with respect to the rates of enrolment and dropout and the state of infrastructure required to provide high quality secondary education.

Relevance of Secondary Education

According to the Twelfth Five-Year Plan, the expansion of secondary education is the next big and logical step, since India is close to achieving Universal Elementary Education (UEE) and also because of the low gross enrolment rate of 88% in 2015 (FIGURE 1). India aims to scale Rashtriya Madhyamik Shiksha Abhiyan (RMSA) by subsuming various smaller schemes like inclusive education for disabled people, provision of Information and Communication Technology (ICT) in schools, and the provision of girls' hostels (Planning Commission 2011). The policy document indicates the need to increase public expenditure and the need to tap into the resources and capabilities of the private sector to address the challenges.

History of Secondary Education Reformation

There have been several phases in the history of secondary education (Wood 1953). A brief outline of the phases is as follows:

1 Early 19th century: Missionaries and Education

The need to change secondary education was felt way back in the 18th and 19th centuries, when missionaries and individuals established schools to "create a new class of Indians to learn the language of their rulers", which the East India Company supported (Zachariah 1970; Porter 1967). The famous Macaulay's Minutes[2] captures this necessity, stating, "We must at present do our best to form a class who may be interpreters between us and the millions whom we govern; a class persons, Indian in blood and colour, but English in taste, opinions, in morals and intellect." British rulers in India introduced a secondary education system based on European ideals, focusing on English, science, and literature.[3] This system became a gateway to government employment[4] (Porter, 1967). Thus, education was not for the masses; instead, it was for society's elites (Chaurasia and Kaul, 1967; Porter, 1967).

2 1857: Wood's Despatch and the Grant-in-aid System

Secondary education became more attractive to the upper class of Indian society when universities in the Presidencies of Bombay, Calcutta, and Madras were established. Invariably, secondary education became the preparation required to pass entrance examinations to these prestigious universities (Zachariah 1970).

However, the Magna Carta of education is said to be Wood's despatch (1854),[5] which played an influential role in Indian education as a whole (Hill 1911). Wood's despatch paved the way for setting up infrastructure by establishing a department of education in all provinces, teacher training institutes, and schools and colleges. This commission most importantly established the "grant-in-aid"[6] system[7] and the secular[8] education system. During this phase, secondary education was elitist and there was no attempt to encourage creativity in teaching curricula.

This period also saw the decline of the use of the mother tongues as the languages of instruction; no efforts were made to train teachers, no technical or vocational knowledge was imparted, and the emphasis on examinations trickled down to the primary level of education (Mudaliar Commission 1953).

3 Early 20th century: Mudaliar Commission

Since the education system as a whole did not meet national demands for a healthy labour pool or educated citizens or promote democratic values and practices, the cry to reshape the system went hand-in-hand with the nationalist movement (Chaurasia and Kaul, 1967). The first step towards reforming secondary education after Independence was taken in 1952 by the Government of India, wherein a commission under the chairmanship of A.L. Mudaliar was established to "reorganize and improve" the entire secondary education system to make it uniform (Singh 1997). The Mudaliar Commission published the *Report of the Secondary Education Commission* (1952–53). A major recommendation of this report was diversifying the education curriculum; the aim was to provide "education with vocational bias and not vocational education."

During this phase, Indian states established secondary education boards that framed the curricula and took over conducting examinations. This relieved the pressure on universities to conduct and manage matriculation examinations (Singh 1953). The Mudaliar Commission attempted to ensure that secondary education catered to all sections of society and not just those aiming to pursue higher education (Wood 1953). Another outcome of this commission was the establishment of the All-India Council for Secondary Education (AICSE) in 1955.[9] Several matters were addressed in the AICSE meeting, during which examinations were given the uttermost importance.

4 1964: Kothari Commission

Another high-level commission was formed, which published the *Education and National Development*[10] report in 1966 (Zachariah 1970). This commission aimed to make the entire education system, including secondary education, a "well-balanced, integrated and a national education" (Zachariah 1970)—it is known as the Kothari Commission (Singh 1997). The latter half of the 1960s suffered due to the "holiday"[11] period in planning, coupled with increasing birth rates, declining death rates, and a focus on universities, which all affected secondary education. During this time, although there was an increase in the number of schools—both government and private, and in urban and rural areas—the quality of secondary education deteriorated (Zachariah, 1970; Singh, 1997).

The result was the burgeoning of substandard mainstream colleges—both government and private—which churned out substandard graduates (Singh, 1997). A large section of society was filtered out by the high fees, which were justified by the "comparatively" better quality of education. Government-run professional college standards declined because of poor funding (Singh, 1997).

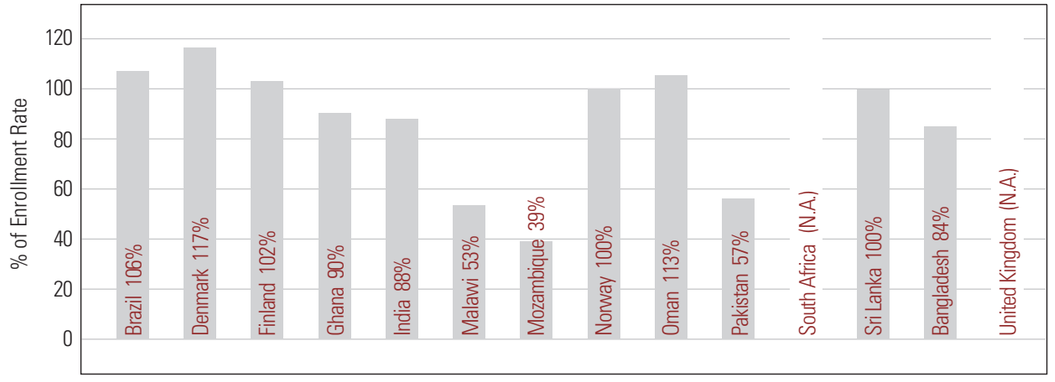
The exigency, then, is to remodel and diversify secondary education to relieve the pressure on higher levels of education and to provide a better quality of education. Therefore, an increase in well-equipped secondary schools with highly qualified teachers and vocational training could remedy the situation.

Secondary Education: A Situational Analysis

According to the Ministry of Human Resources Development classification of educational levels, secondary education in India caters to children between 14–18 years or age, who are in Classes 9–12 (Zachariah, 1970; MHRD website). As mentioned earlier, secondary education in India is further subdivided into lower secondary education (Classes 9–10) and higher secondary education in India (Classes 11–12). In Maharashtra, secondary and higher secondary education fall under the purview of the

1 Each level has subdivisions and policies that specifically enable their functioning and address challenges at each level. For example, secondary education is divided into lower secondary education (Classes 9–10) and higher secondary education (Classes 10–11).
2 Thomas Babington Macaulay wrote a detailed minute on introducing Western education with English as the language of instruction. This text was written and circulated among members of government to avoid any confusion on the issue.
3 The resolution passed by Lord William Bentick in 1835 promoted English education and was further supported by social reformers like Raja Ram Mohan Roy.
4 This was mainly due to Lord Hardinge's proclamation that the preference for government jobs would be given to those who could speak English (Mudaliar Commission Report, 1953).
5 Wood's Despatch aimed to diffuse European knowledge through the arts, science, philosophy, and literature.
6 The grant-in-aid system was introduced in 1869 to encourage private agencies to provide education as an extension of their liberal grants.
7 It was the recommendation of the Hunter Commission, 1882, that the government should focus on primary education and leave secondary education to private players. The belief was that secondary schools could be run on a grant-in-aid system.
8 The secular aspect of the education system was emphasised even in 1904.
9 The AICSE was established in 1955 to improve the quality of secondary education—this was taken over by the National Council of Education Research and Training (NCERT) in 1961. The NCERT established four regional colleges of education in Mysore, Ajmer, Bubaneshwar, and Bhopal (Porter, 1967).
10 An important observation in this report was that most secondary education students were from the upper castes/classes and the high incidence of dropouts was due to poverty (Zachariah, 1970). It also noted that secondary education was largely an urban phenomenon and students were primarily boys. The report revealed that secondary education was not free except in Madras. Parents took on the burden of paying fees for children enrolled in government and private schools alike. The report also pointed out that private management of schools has increased since Independence.
11 The plan holiday period refers to the time between the Third and Fourth Five-Year Plans, from 1966–1969. During this period, the government took a break from five-year plans, and instead, followed an annual plan due to devaluation of currency, drought, and depletion of resources (Planning Commission, 2014).

FIGURE 1: **Worldwide enrolment rates in lower secondary education, 2015**



SOURCE: UNESCO (2017)

Maharashtra State Board of Secondary and Higher Secondary Education (MSBSHSE).[12] This body, established in 1976, is autonomous and plays an advisory role to the state government on policy matters related to secondary and higher secondary education. The state board also has an executive function, wherein it conducts examinations, frames syllabi, and coordinates with primary and higher education schools/colleges.[13]

As per the latest available data from the District Information System for Education (DISE), there are 37,585 schools—both urban and rural—in India, of which 6,276 schools (close to 17%) are in Maharashtra. According to United Nations Education, Scientific and Cultural Organisation (UNESCO), the enrolment in lower secondary schools in India in 2015 was around 88%. This is below the average enrolment rate in regions like Latin America and Caribbean Islands (105%) and Central Asia (96.25%) (FIGURE 1). Within India, data on overall enrolment in Maharashtra is unavailable, but fewer than half the students enrolled were girls, which highlights the gender disparity in education.

12 MSBSHSE has eight education divisional boards, including those in Pune, Mumbai, Nashik, Aurangabad, Amravati, Latur, Nagpur, and Kolhapur. Pune is home to the headquarters of MSBSHSE.

13 This includes establishing financial policies, supervising the work of all divisional boards, and awarding scholarships, prizes, and medals.

Socioeconomic Aspect of Enrolment and Dropouts

There is a socioeconomic dimension to the enrolment rates in India. The enrolment rates of people from scheduled castes/scheduled tribes (SCs/STs) and Muslims have been consistently low in India. This dynamic is also visible in Maharashtra. A key aspect of secondary education is the dropout rate. According to Ministry of Human Resource and Development, 36.37% in India dropout by the 8th grade (Educational Statistics at a Glance, 2014). The main reason for students dropping out by Class 8 is that they view the education system as burdensome and many find pursuing an education unnecessary (Jain, 2015). Girls tend to drop out to perform daily household chores and to get married (Jain, 2015). In general, the poor quality of secondary education results in low retention (Gouda and Sekher, 2014). The most important reason for dropping out, according to National Family Health Survey 2005–2006, was a "lack of interest in studies" among boys and girls alike (Gouda and Sekher, 2014). Also, there is a socioeconomic aspect to the dropout trend, which tends to be higher among Muslims students and those from SCs and STs (Gouda and Sekher, 2014; Majumdar, 2005). Poverty is a major barrier to accessing secondary education (Majumdar, 2005).

Secondary Education: Infrastructure

At all levels of education, core infrastructure plays an important role in actualising desired outcomes.

It is important to review the status of infrastructure along with the above key indicators like enrolment and dropout rates for a holistic understanding of secondary education and also to make informed policy decisions. A brief review of the condition of secondary infrastructure follows.

The core infrastructure required to run an education system is a school building, classrooms, teachers, wall, latrines, drinking water, electricity, and a room for the headmaster. According to DISE data for 2015–2016, more than 90% of schools in the country and in Maharashtra succeeded in providing the majority of these infrastructures. For example, 97% of secondary schools in India have school buildings; in Maharashtra too, 99% of secondary schools have buildings. There are very few schools with just one classroom and one teacher. Although the data on school buildings is promising, the availability of toilets for Children With Special Needs (CWSN) is greatly lacking—at the national and state levels; the provision of this facility in schools is below 20%.

Apart from these basic infrastructure, there are certain facilities that ensure a holistic and inclusive education. Some include—but are not limited to—a library, full-time librarian, lab assistant, playground facility, and hostels for boys and girls. Only 82.80% of secondary schools in the country have libraries, and in Maharashtra, 96.34% have them. A library is said to be completely operational and cater to the needs of students and faculty only when there is a full-time librarian available to guide users. It is disheartening to observe that only 10% (9.87% in India and 9.02% in Maharashtra) of secondary schools have full-time librarians. It is also disappointing that secondary schools in the whole country and in Maharashtra substantially lack facilities like ICT labs and language labs (TABLE 1).

The figures in Table 1 demonstrate the quality of the secondary education system in the country. The scarcity of hostels for boys and girls is a source of concern, because the distances from home to school, especially in rural areas, is an oft cited reason for students dropping out at the secondary level (Chaurasia and Kaul, 2004). The percentage of boys' and girls' hostels is below 3% at the national level and below 7% in Maharashtra.

Inclusive education is on the agenda of the national education policy,[14] which recognises that CWSN should also be catered to. The present status of provisions for CWSN is difficult to evaluate due to the paucity of data. However, DISE reports from the last five years show that the number of students with disabilities enrolling in secondary education has been fluctuating, the reason for which is unknown. Likewise, there are no data on infrastructure except to the extent of "exclusive toilets accessible to CWSN." According to the DISE report for 2015–2016, less than a quarter of secondary education schools in India and Maharashtra have separate toilet facilities for CWSN.

14 Inclusive education for children with locomotor disabilities, those with partial impairments, and those who need special education was a part of the National Policy on Education (1986) and the Sarva Siksha Abhiyan.

TABLE 1: **Comparative status of education infrastructure in India and Maharashtra**

Criteria	National (%)	Maharashtra (%)
Library	82.80	96.34
Full-time librarian	09.87	9.02
ICT lab	25.15	29.22
Computer and internet	23.20	52.66
Language labs	07.82	12.79

SOURCE: DISE (2015–2016)

Secondary Education: Quality

There are several definitions of a quality education. They include these core elements:

- Students or learners are healthy, well-nourished, and able to think and learn in a healthy environment. Learning and thinking should be supported by the family and community.
- The learning environment is friendly, safe, sensitive to gender, and provides facilities for the child's development.
- The curriculum is relevant, and the learning materials include basics numerical skills, life skills, and information on gender, HIV/AIDS prevention, and peace.
- The teaching material used by teachers/instructors is student-centric and assessments facilitate further learning.
- The outcomes are measured in knowledge, skills, and attitudes, which are linked to the national education goals.

As evident from the dimensions mentioned, the discourse on quality education is not restricted to just the curricula or the education content. On the contrary, quality extends to the larger education environment in which children are taught as well as their immediate community. In India, and in many other developing countries, the wider aspects of quality in education are not valued. The cruel murder of a young child from Ryan International School in Haryana is an example of how vulnerable children are in schools (Firstpost, 2017). It emphasises the need for safer and healthier learning environments to raise the quality of education. Also, making education a system based only on student performance would be inaccurate since it would not encompass other dimensions of a quality education. Having said this, there have been no studies to quantify the quality of education based on the previously mentioned dimensions/criteria of quality. However, the Gurugram incident of a student being killed within the school premises, the lower attrition rates in higher classes, low attendance rates, and the absence of teachers indicate that the quality of secondary education must be enhanced.

Challenges in Secondary Education

The secondary education system in India faces a number of challenges because of the importance given to higher education before Independence and to primary and elementary education after Independence. Some major challenges need to be addressed.

1 Curricula

The curricula at the secondary level of education do not suit the needs and aspirations of students in India (Wood, 1953). More often than not, textbooks are outdated and do not match the needs of students. During colonial times, the curricula suited those who were preparing for government jobs. The information in textbooks does not match the requirements of our globalised world (Wood, 1953; Chaurasia and Kaul, 1967). In other words, the information is outdated and does not keep up with innovation and inventions. For example, it was reported that the Maharashtra Board Class 10 textbooks contained glaring factual errors (Pednekar, 2015). These textbooks also had spelling errors. The nature of the knowledge imparted in India is remarkably academic (bookish) (Wood, 1953; Weber, 1956; Kabir, 1955; Porter, 1967).

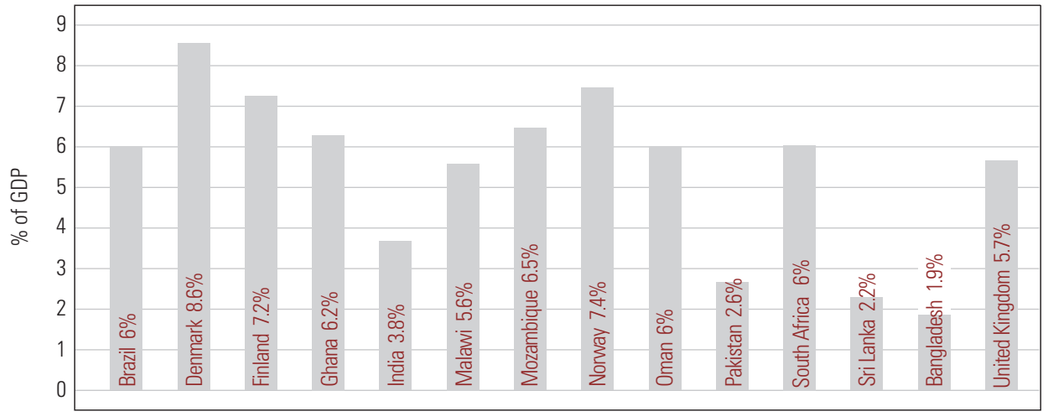
2 Need for Vocational Education

At 14–15 years of age, most adolescent boys and girls develop different interests and skills (Kabir, 1955). The learning capacity of students of this age is huge. Thus, the integration of vocational education into secondary schools could guide students in developing their interests and picking up a few skills. Since, in India, secondary education is the final level of schooling, vocational education could equip students to become skilled workers in different sectors. The potential of integrating vocational education into the main curricula is recognised in the government's Twelfth Five-Year Plan (Government of India, 2011).

3 Language Dilemma [15]

The debate surrounding language revolves around two main concerns. The primary concern is that English is the primary medium of education—a choice that was resisted when it was introduced by the British, but still continues (Porter, 1967). The other concern is with introducing Hindi as a compulsory subject on a pan-India level, which some

FIGURE 2: **Worldwide public expenditure on education as a percentage of the GDP, 2015**



SOURCE: The World Bank (2017)

states—especially in South India—have rejected, in the same way that they have opposed the adoption of Hindi as a national language. After the bifurcation of states on a linguistic basis, each state has adopted a regional language other than Hindi. A recent complication in this debate is the decision of the Central Board of Secondary Education (CBSE) to make board exams compulsory for all and strictly implement the three-language formula—compulsory teaching of Hindi, English, and Sanskrit—in 2018 (Pandey, 2016). The result of this complication is that a big portion of teaching in secondary schools is concentrated in the teaching of languages (Wood, 1953).

4 Examination System

Final examinations are given disproportionate attention at the secondary education level—the emphasis on memorising information in textbooks inhibits the holistic development of children (Wood, 1953). It also suppresses teachers' creativity, since they focus solely on their students preparing for and passing final examinations. This severe system often forces students to resort to cheating during examinations, impersonating examination candidates, physically attacking examiners, and engaging in other illegitimate means of clearing examinations. For example, in board examinations in Uttar Pradesh (UP), students were caught on camera cheating during a secondary school certificate (SSC) paper (India Today 2017). Students were also reportedly caught cheating in SSC and higher secondary certificate (HSC) board examinations in Gujarat (India Today 2017) In another incident, it was reported that a teacher helped students copy during examinations (India Today 2017).

5 Finance

According to the World Bank, public expenditure on education in India was 3.8%[16] in 2015, which was much lower than that in Scandinavian countries like Denmark (8.6%), Norway (7.4%), and Finland (7.2%). In fact, India's education expenditure is far lower than some of the poorest African countries. For example, Ghana, Burundi, Malawi, Mozambique, Niger, and others have spent an average of 5.5% of their gross domestic products (GDP) on education (FIGURE 2).

India's low education expenditure is justified by inadequate revenue generation and a lack of political will. Even within the education sector, secondary education has received the poorest deal because the focus has been on making primary and elementary education universal. Historically, unequal attention has been given to higher education since the establishment of universities in 1857 (Singh, 1997). In other words, secondary education was never considered particularly important in national affairs.

15 According to the Eighth Schedule of the Constitution, there are 22 languages in India, but there is no single 'unifying' Indian language. According to the Mudaliar Secondary Education Commission Report (1953), the language dilemma stems from the concern associated with synchronising traditional Indian values and Western ideas, which have prevailed since the British era (Porter, 1955).

16 India's public expenditure on education is even lower than the world's average public expenditure on education, which is 4.7%, according to the World Bank.

6 Centralised Education System

Secondary education is highly centralised, which means that bureaucracy plays an important role in the day-to-day management of schools (Wood, 1953; Majumdar, 2005). Similarly, private schools are also managed by committees whose members do not represent the communities they serve (Wood, 1953). Due to the highly administrative and bureaucratic nature of the system, the community lacks the interest and motivation to suggest and implement reforms (Wood, 1953).

In schools, the Parent Teacher Association (PTA) is used as a platform to involve parents. However, in many states, such a platform is still not provided for sufficiently. For example, according to 2015–2016 data from DISE, only 30% of schools have a PTA. Also, in states like Maharashtra, where 62% of schools have a PTA, the quality and efficiency of the associations are not monitored.

7 Trained Teachers

The key to good secondary education is high quality teachers (Kabir, 1955; Weber, 1956; Porter, 1967). However, the low status of teachers in society has been a major concern since the start of the modern education system in India. Teachers' low social status stems from a lack of facilities in training institutes, which leads to a shortage in professional teachers; in turn, this leads to the recruitment of teachers with few or low qualifications (Wood 1953; Zachariah 1970). The situation is complicated by the lack of professional ethics and a lack of motivation for self-improvement (Wood, 1953). Hence, adequate measures must be taken to improve teachers' competence and raise their social status and morale, to make their contributions more valuable.

8 High Dropout Rates

The dropout rate at the secondary level of education is the highest among all levels. The reasons for high dropout rates have been discussed earlier.

9 Lack of Female Teachers

The presence of female teachers is important for promoting the national agenda of educating girls. The absence of female teachers is cited as a reason for girls dropping out of schools, especially at the secondary level (Chaurasia and Kaul, 2005). The percentage of female teachers is between 33%–35% in India and Maharashtra. Also, fewer girls enrolled in the secondary education schools is associated with fewer women teachers employed at the schools. A possible way to mitigate this issue is to conduct gender sensitivity workshops in schools, in collaboration with women's organisations.

According to Ministry of Human Resource and Development, dropout by the 8th grade in India is

36.37%

The main reason for students dropping out by Class 8 is that they view the education system as burdensome.

The Future of Secondary Education

An indispensable part of improving the education system, including secondary education, is understanding the goals and targets that need to be achieved. The most commonly referred to goals for secondary education are the Sustainable Development Goals set by the United Nations. "Quality Education" is the fourth Sustainable Development Goal, which needs to be achieved by 2030. The overall aim is to ensure that all boys and girls have access to free, equal, and high-quality primary and secondary education. The emphasis is not just on infrastructure, but also on learning outcomes, bridging gender disparities, and inclusive education for individuals with disabilities, indigenous people, and children in vulnerable situations. It has also rightly recognised the importance of hiring qualified teachers through international collaboration.

With India having ratified the Sustainable Development Goals, focusing just on infrastructure is inadequate. Secondary education in India should aim to be free, have effective learning outcomes, and diversify to provide vocational training. The previous section, which analysed the various aspects of secondary education, indicates that India should hasten its efforts to increase the quality of its education system, including secondary education, to increase learning outcomes. In addition to quality, inclusive education should be given equal importance. Indian education should emphasise teacher training, ICT, and vocational training. Engaging with multiple stakeholders, including civil society organisations and international and national collaborations, will only strengthen the system. An integral part of this type of cooperation would be engaging the non-profit sector in the public-private model discussed in the next section.

The emphasis is not just on infrastructure, but also on learning outcomes, bridging gender disparities, and inclusive education for individuals with disabilities, indigenous people, children in vulnerable situations and hiring qualified teachers through international collaboration.

Secondary Education and Private Players[17]

In the last few decades, the expansion of secondary education in India has been led by unaided private schools (Majumdar, 2005). Governments, especially state governments, see private schools as alternatives that palliate the pressure on the state to provide secondary education to all. However, it is important to note that the secondary education sector has always relied on major contributions from the private sector. Secondary education in India is run largely through a grant-in-aid system. Hence, the need to increase the presence of private players, especially non-profit organisations in secondary educations, should not come as a surprise. Although the private sector offers quality education to a certain extent, issues of access and affordability still exist. On the other hand, while government schools have addressed the issues of affordability and accessibility, quality is still a concern. Hence, public–private partnerships (PPP)[18] can help utilise resources from both sectors effectively.

PPP is the middle ground through which nations can tackle inefficiencies in public services and avoid their crass commercialisation (UNESCO 2017). The private sector can play an important role in including vocational training in secondary education even though it is a contentious issue (Majumdar, 2005). An issue in this area is funding, for which the resources of the private sector can be tapped. However, it is important to clarify here that the idea is not to make vocational training solely a feature of the private sector and keep the government out of the picture. Instead, it could be a short-term solution until there is some clarity on the roles of public and private bodies.

The Government of India has identified potential areas where it could utilise the resources of the private sector. Some of them are:

- Kendriya Vidyalaya and Navidyalaya exhibitions and seminars and the development of curricula and teaching approach in English and mathematics.
- Integrating vocational training into curricula for Classes 9 and 10 in financing, service delivery, provision of workspace, and the training of trainers.
- Providing apprenticeships for on-the-job training.
- Increasing the number of Industrial Training Institutions (ITIs) and Industrial Training Centres (ITC) through the PPP model.
- Establishing skill development programmes in consultation with industry needs, to enhance critical thinking, communication, collaboration, and creativity.

17 The private in this context refers to non-profit private organisations.

18 PPP can be broadly defined as arrangements between public and private actors for the delivery of goods, services, and/or facilities (UNESCO, 2017).

Secondary education should be a priority on the national education agenda, with a focus on quality and inclusivity. Also, secondary education should be diversified to include vocational training, which will lay the grounds for making students more independent in the future. This will relieve the pressure on higher education institutions to produce skilled workers.

Conclusion

Secondary education is not just a link between elementary and higher education; it is also, more seriously, the stage where many people's educations end in India (Kabir, 1955). Historically, secondary education has been ignored in India for various reasons and its importance has been reduced to just a preparatory phase for higher education.

At present, as India witnesses the expansion of secondary education as part of the next big national agenda for the country's development, its quality should be addressed. In other words, the mere expansion of infrastructure, like schools and other facilities like teaching material, walls, ICT facilities etc., may improve enrolment rates and reduce drop-out rates, but it does not ensure quality. Quality depends mainly on teaching, curricula, and diversification to include vocational training. Broadening of secondary education is important because adolescent boys and girls develop different aptitudes, skills, and interests (Kabir, 1955). The need has been recognised in the Twelfth Five-Year Plan.

To conclude, secondary education—in line with the Sustainable Development Goals—should be a priority on the national education agenda, with a focus on quality and inclusivity. Also, secondary education should be diversified to include vocational training, which will lay the grounds for making students more independent in the future (Government of India, 2011). This will relieve the pressure on higher education institutions to produce skilled workers.

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Government Financing of Secondary Education in India: A Snapshot

PROTIVA KUNDU

Abstract

Secondary education acts as a bridge between elementary and higher education and the labour market. However, India has had limited success in the realm of secondary education because, for a long time, the government prioritised policies and investments in elementary education. Government financing for secondary education remains abysmally low. Public provisioning of funding for education is essential in order to universalise schooling, and the national budget is an important policy instrument for the government in fulfilling its commitments to various sectors. A comprehensive analysis of the fiscal architecture of secondary education in India provides the base for arriving at possible corrective policy measures. This paper provides an overview of government financing of secondary education in India. It examines the structure and nature of allocation and expenditure in secondary education by the union and state governments. The result shows that for the last 10 years, government expenditure on secondary education has remained stagnant, at 1% of gross domestic product (GDP). The sector is suffering from both, under-allocation and under-utilisation of resources—the problem lies in the planning and budgeting stage. This paper suggests that both levels of government should step up public investment in secondary education. For institutional development in education, adequate investment in infrastructure, teacher education and training, quality assurance, etc. are needed. This paper emphasises the need for decentralised planning, smoothing the flow of funds and their utilisation process, and strengthening the government apparatus responsible for delivery.

Introduction

In the Constitution of India, education appears in the concurrent list, whereby providing secondary education is a shared responsibility of the union and state governments. However, until the Tenth Five Year Plan period, both levels of government had prioritised policies and investments only in elementary education (Planning Commission, 2008). Given considerable growth in the enrolment rate at the elementary level especially after the introduction of Sarva Shiksha Abhiyan (SSA) in 2002, there is an urgent need to expand the secondary education system in India (Planning Commission, 2013). Despite significant changes in the policy landscape for secondary education after the 11th Five-Year Plan, government finances for the sector remain abysmally low.

It has long been argued that public provisioning of funding for education is essential to universalise schooling. Hence, any strategy to address challenges in secondary education must consider the sector's financial landscape. A comprehensive analysis of the fiscal architecture of secondary education would generate the data on the basis of which measures of support to existing policies or corrections, if necessary, can be recommended. This paper attempts such an analysis by focusing on government financing of secondary education in India. It unpacks the structure and nature of allocation and expenditure on secondary education by the union and state governments.

The paper is divided into six sections, including this brief introduction. The results are discussed in four sections. Section II provides an overview of government financing of education in India. Section III maps the government resources available for secondary education. A detailed discussion on the pattern of allocation and expenditure by the union and state governments is also included in this section. Section IV portrays the composition of the secondary education budget across different budgetary heads. Section V focuses on the financing of the government's major flagship programme for secondary education, the Rashtriya Madhyamik Shiksha Abhiyan (RMSA), and concludes with policy suggestions.

Results

Overview of Government Financing of Education Analysing union and state government expenditure for a particular sector reveals the prioritisation of public sector policies. In this regard, the recommendations of the Education Commission (1966), popularly known as the Kothari Commission, on the issue of government financing of education are considered an important benchmark. After estimating the financial requirements of the education system in India until 1985–86, the commission recommended that "if education is to develop adequately, the proportion of GNP allocated to education will rise to 6.0 per cent in 1985–86" (Education Commission 1966: 893). However, as of 2014–15 (i.e., almost 30 years later), the allocation is nowhere near the recommendation.

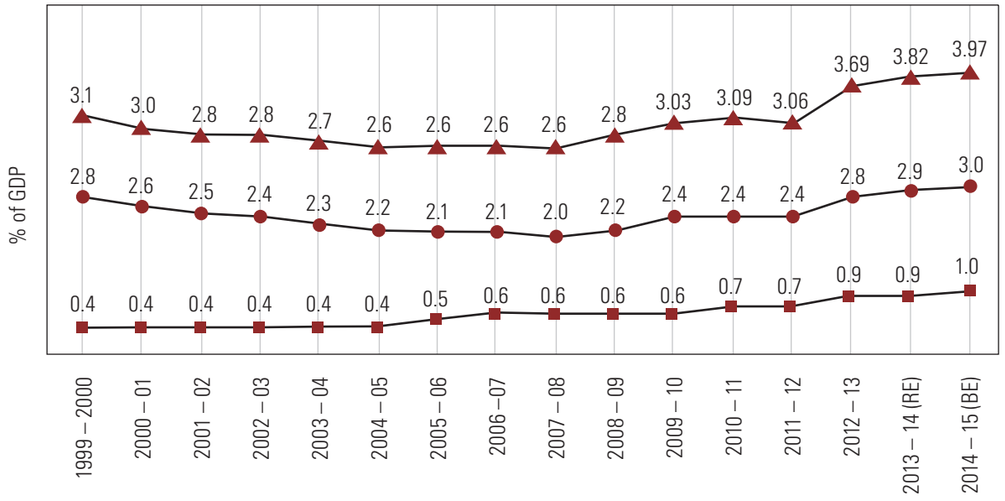
An annual publication of the Union Ministry of Human Resource Development (MHRD), "Analysis of Budgeted Expenditure on Education", provides information on government expenditure by levels of education. The latest data provided by MHRD show that until 2014–15 (BE), total public spending on education in the country (including expenditure not just by education departments at the centre and in the states, but also by other departments that spend on educational services) worked out to 3.97% of the GDP (FIGURE 1).

Both levels of government—state and union—should step up public investment in secondary education.

Disaggregating the expenditure by levels of education shows that a large portion of government resources in India goes towards elementary education (over 40%), followed by secondary education (25%). While the share of expenditure on elementary education has increased from 41% in 2009–10 to 45.1% in 2014–15 (BE), the expenditure/allocation for secondary education has remained stagnant at around 25% of the total education budget. In fact, the share declined from 25.6% in 2011–12 to 24.4% in 2014–15 (BE) (FIGURE 2). This indicates that secondary education is not a priority for either the centre or state governments.

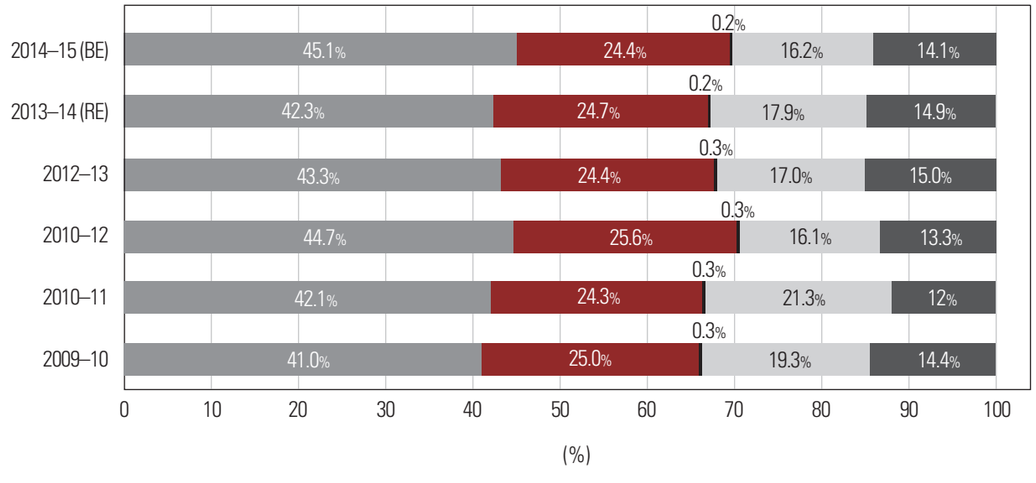
Public Investment in Secondary Education Public investment in education is an important factor that affects quality of education. One reason for India's unsatisfactory performance in providing secondary education is poor public spending in the sector (Planning Commission, 2013). Unlike the Right of Children to Free and Compulsory Education (RTE) Act, 2009, which mandates that the government provide free and compulsory elementary education to all children between 6–14 years, there is no such legal obligation at the secondary level. In the absence of such a mandate, spending on secondary education is solely at the government's discretion.

FIGURE 1: **Government financing of education as a percentage of the GDP**



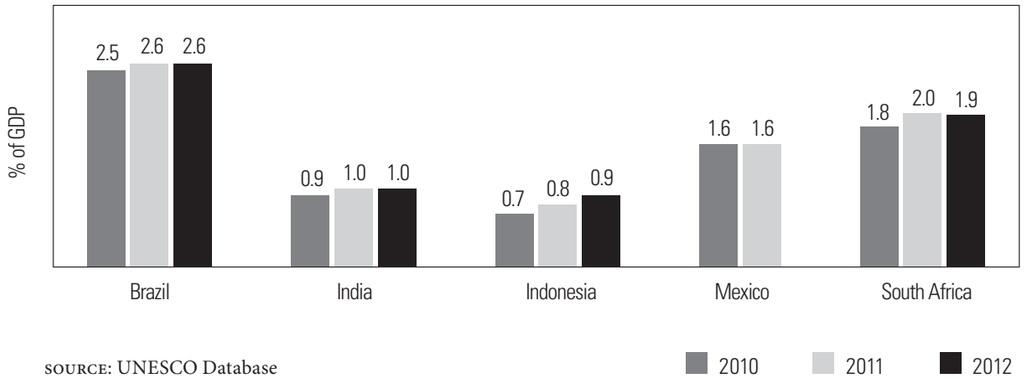
NOTE: BE-Budget Estimates; RE-Revised Estimates; GDP figures are at current market price. Source: Planning and Monitoring Unit, Department of Higher Education, MHRD, 2004–05 to 2006–07, 2007–08 to 2009–10, 2008–09 to 2010–11, 2010–11 to 2012–13, 2011–12 to 2013–14, and 2012–13 to 2014–15.

FIGURE 2: **Share of secondary education in the total education budget (percentage)**



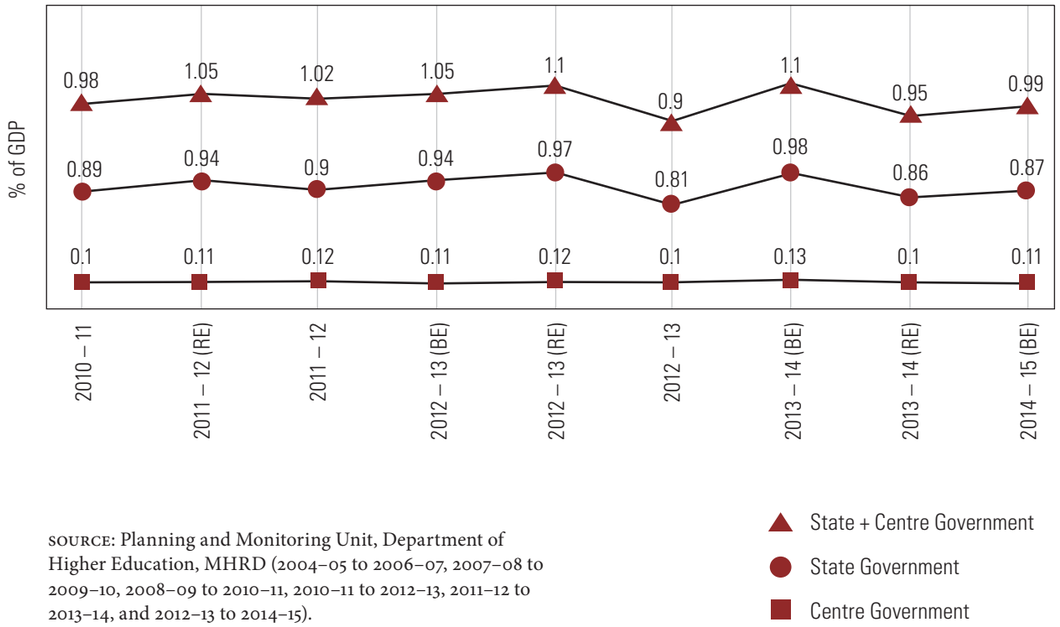
SOURCE, NOTE: BE-Budget Estimates; RE-Revised Estimates; Planning and Monitoring Unit, Department of Higher Education, MHRD (2004–05 to 2006–07, 2007–08 to 2009–10, 2008–09 to 2010–11, 2010–11 to 2012–13, 2011–12 to 2013–14, and 2012–13 to 2014–15).

FIGURE 3: **Public expenditure on secondary education in developing countries as a percentage of GDP**



SOURCE: UNESCO Database

FIGURE 4: **Public expenditure on secondary education in India as a percentage of the GDP**



SOURCE: Planning and Monitoring Unit, Department of Higher Education, MHRD (2004–05 to 2006–07, 2007–08 to 2009–10, 2008–09 to 2010–11, 2010–11 to 2012–13, 2011–12 to 2013–14, and 2012–13 to 2014–15).

The responsiveness of the government to the education sector is reflected in the share of government expenditure allocated to education in the country's GDP. The total expenditure by the government in any country, when presented as a proportion of the size of its economy (i.e., the GDP of the country), reflects the scope of the government's fiscal policy interventions in the economy. Accordingly, international comparisons of public expenditure, at the aggregate level or for specific sectors, are usually facilitated by comparing the public spending figures of various countries, as proportions of the GDP.

TABLE 1: **MHRD allocation to secondary education**

Year	Total MHRD Budget (Crore)	Secondary Education Budget by MHRD (Crore)	% of Total MHRD Budget
2009–10	44,528	5,757	12.9
2010–11	49,904	6,822	13.7
2011–12	63,363	8,885	14.0
2012–13	74,056	9,295	12.6
2013–14	79,451	10,740	13.5
2014–15	82,771	11,847	14.3
2015–16	69,075	9,184	13.3
2016–17	72,394	10,450	14.4
2017–18	79,686	11,844	14.9

SOURCE: Union Budget, Expenditure Budget Volume II, various years

India's budgetary spending on secondary education has been lower than that of most other developing countries, except for Indonesia (Figure 3). Brazil has dedicated a substantial budget to secondary education, which is growing year on year; South Africa and Mexico spend about 1.5% of their GDP on secondary education.

The share allocated to secondary education in India's GDP has been less than 1% for most of the past decade. Between 2010–11 and 2014–15 (BE), the share of secondary education in the country's GDP stagnated at around 1%. Although there was a marginal increase between 2012–13 (BE) and 2013–14 (BE) to 1.1% of the GDP, it dropped below 1% again in 2014–15 (BE) (FIGURE 4).

Studying the central government's and state governments' spending on secondary education separately shows that the centre's share stagnated at 0.1% of the GDP between 2010–11 and 2014–15 (BE), while the states' shares have declined from 0.89% of the GDP in 2010–11 to 0.81% in 2012–13. Though state allocation has gradually improved to 0.87%, this amount is still less than previous years' expenditures. It is noteworthy that the centre is responsible for only one-ninth of the total government expenditure on education—the rest of the spending is by state governments.

Public Investment in Secondary Education: Union Government

At the union and state levels, besides the Ministry/Department of School Education, several other departments spend significantly on education. These departments include social security and welfare, minority welfare, tribal welfare, rural development, urban development, panchayati raj, public works, drinking water and sanitation, and planning (the names of these departments differ across states). However, as nodal ministries, the MHRD at the union level and the Department of Education[1] at the state level together provide more than 60% of the secondary education budget. The following section of the paper provides a deeper analysis of financing by MHRD in secondary education.

The direct interventions of the MHRD in secondary education are the Kendriya Vidyalaya, Navodaya Vidyalaya, and Central Tibetan schools. In addition to these central sector schemes, the MHRD runs a number of centrally sponsored schemes (CSS) for secondary education. A major scheme for secondary education, RMSA, was launched by the union government in 2009. Other major CSS launched by

1 The name of the education department varies with the state.

MHRD are (i) model schools; (ii) girls' hostels in secondary and senior secondary schools; (iii) National Scheme of Incentive to Girls for Secondary Education (NSIGSE), (iv) Inclusive Education for the Disabled at the Secondary Stage (IEDSS); and (v) National Means cum Merit Scholarship (NMMS). Altogether, the allocation of funds to these schemes constitutes the MHRD budget for secondary education.

Table 1 shows that along with the total education budget, the secondary education budget has also increased over the last eight years. Between 2009–10 and 2017–18, while the overall education budget increased by 79%, the budget for secondary education increased by 105%. The only exception was in 2015–16, when both budgets experienced a drastic drop from the previous three years' budget estimates. The year 2015–16 was crucial for the Indian economy in terms of fiscal policy. While the Government of India accepted the recommendations of the 14th Finance Commission (FC) to increase devolution of the divisible pool of resources by increasing the states' share from 32% to 42%, it simultaneously adjusted its own fiscal deficit by slashing its grants to states for planned expenditures. Due to this budget cut, the union government's allocation of funds for education reduced from the previous year (CBGA 2016).

For the last 10 years, public spending on secondary education has been stagnant at only

1% of GDP

A major reason for these problems have been gaps in the planning and budgeting stages.

Composition of the Secondary Education Budget: Scope for Reprioritisation?

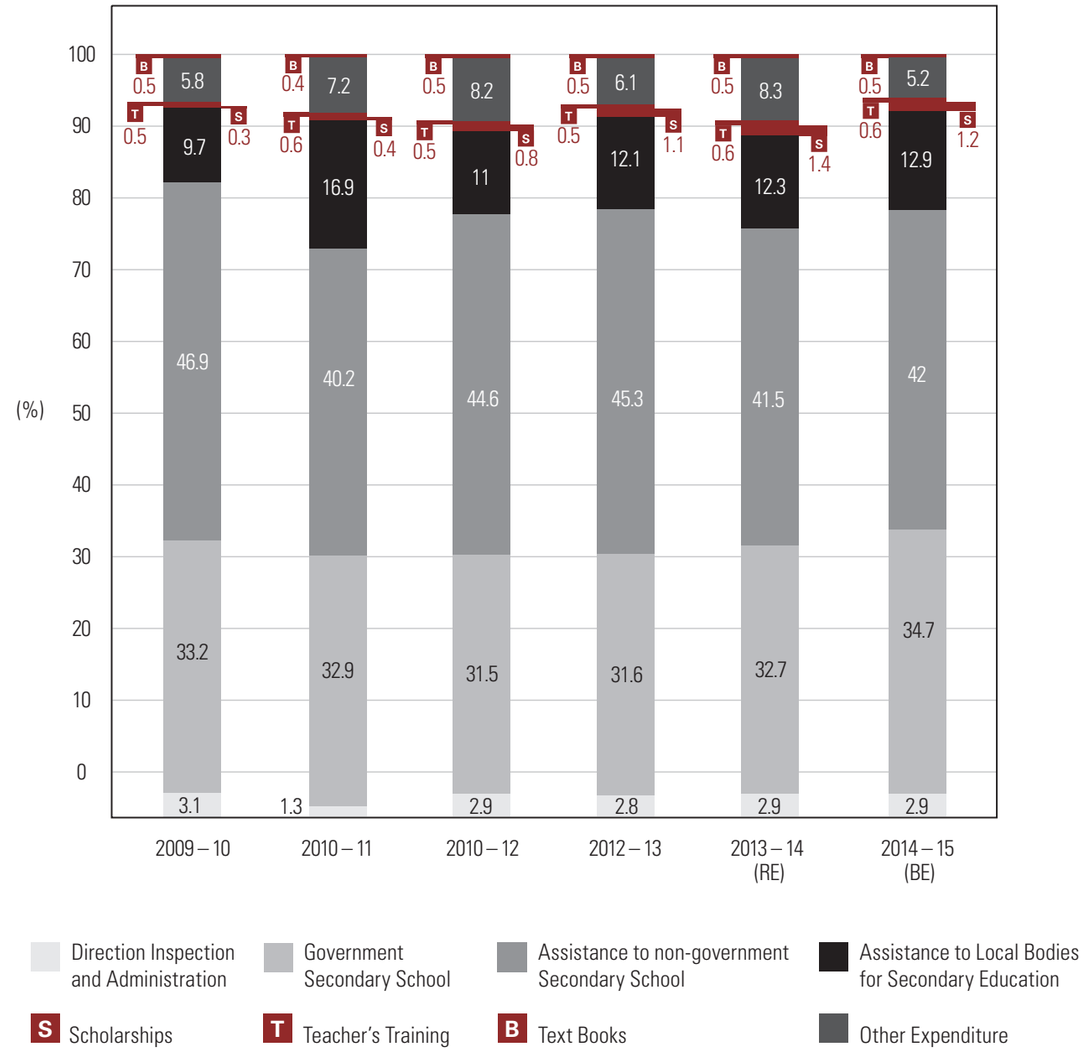
The budget for secondary education presents an incomplete picture. To understand the planning and budgeting associated with resource allocation, it is important to examine the components of the whole secondary education budget. State budget documents provide information on the allocation to and expenditure on secondary education, under eight main budget heads. These are (i) direction, inspection, and administration, (ii) government secondary school, (iii) assistance to non-governmental secondary schools, (iv) assistance to local bodies for secondary education, (v) scholarships, (vi) teacher's training, (vii) textbooks, and (viii) other expenses. A comparative analysis of the distribution of the secondary education budget across these eight components will help in answering the following questions:

1 How has India designed its secondary education budget over the last six years?
2 Have states reprioritised their allocations across different components during the last six years?
3 When the share of one component decreases, do the shares of other components increase proportionately?

To get a holistic picture, this section analyses distribution across components of the secondary education budget for six years—2009–10, 2010–11, 2011–12, 2012–13, 2013–14 (RE), and 2014–15 (BE).

The disaggregated expenditure reveals that private schools are the largest beneficiaries of government financing for secondary education, as a major share of the secondary education budget goes towards supporting non-governmental secondary schools. The government provides these funds in the form of grants to private aided schools for teachers' salaries and other overheads like teacher training, incentives, administration and management, curriculum development, and examination systems. Over the last six years, this share has made up more than 40% of the total expenditure. The second largest component is government secondary schools. Around one-third of the total secondary education budget goes to government schools for expenditure related to teachers' salaries, infrastructure development, and maintenance. Teacher training, despite its direct bearing on quality of education, is a resource-starved component of education. This skewed distribution of resources is reflected in the poor quality of secondary education in government schools, which has contributed to the

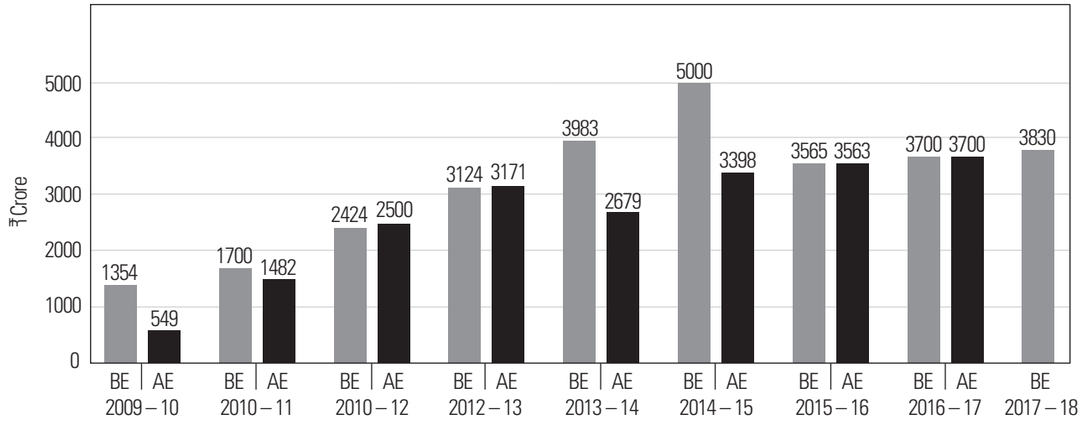
FIGURE 5: **Component-wise distribution of expenditure on secondary education**



SOURCE: Planning and Monitoring Unit, Department of Higher Education, MHRD (2004–05 to 2006–07, 2007–08 to 2009–10, 2008–09 to 2010–11, 2010–11 to 2012–13, 2011–12 to 2013–14, and 2012–13 to 2014–15).

increased demand for private schooling. As per the Unified District Information System for Education (UDISE), of all the secondary schools in India, around 57% are private aided and private unaided, and of all the students enrolled at secondary level, around 55% are enrolled in these schools (UDISE 2015–16). The average out-of-pocket expenditure of a child studying in a rural private secondary school, according to the results of a government household survey, is as high as ₹11,222 per year, compared to only ₹3,328 in a rural government school (NSSO 2015). Despite such high costs, parents send their children to private schools with the hope that they will receive a better education. A closer inspection of the existing budget composition reveals that unless there is an increase in the overall resources allocated for secondary education, quality will remain elusive—the mere reprioritisation of the budget will not lead to expected outcomes.

FIGURE 6: **Budgetary outlays/expenditure of the Union Government for RMSA (₹Crore)**



SOURCE: Union Budget Expenditure Volume II for various years
NOTE: AE = Actuals, RE = Revised expenditure, BE = Budget expenditure

RMSA: A Critical Overview

In 2009, the union government launched RMSA as part of its commitment to make good quality secondary education available, accessible, and affordable to all children. The scheme aims to enhance the enrolment of students in Classes 9–10 by ensuring that there is a secondary school within reasonable distance of every habitation, improving the quality of education imparted at the secondary level by mandating all schools to conform to set norms, removing barriers related to gender, socioeconomic status, and disability, striving for universal access to secondary level education by 2017, and aiming for universal retention by 2020. As we have passed the date for achieving the stated targets, it is worthwhile to examine how the government has designed and financed the programme over the last 10 years.

RMSA was launched as a major flagship programme to promote secondary education. However, for efficient utilisation of funds and greater coordination, it was converted into an umbrella programme in 2013–14 by subsuming other CSS under secondary education, i.e., ICT[2]@School, Inclusive Education for the Disabled at Secondary Stage (IEDSS), Vocational Education (VE), and Girls Hostel (GH). In the 2016–17 union budget, RMSA was identified as a "core" scheme of the national development agenda and was brought under the ambit of the National Education Mission (NEM).

Gross budgetary support of ₹27,466 crore was indicated for RMSA in the 12th Five-Year Plan (2012–17). Between 2009–10 and 2014–15, the union government's allocation of funds to RMSA increased from ₹1,354 crore to ₹5,000 crore. However, from 2014–15 onwards, there has been a decline in allocation (BE). By 2016–17 (BE), which was the last year of the 12th Five-Year Plan, only ₹19,372 crore was allocated (71% of the proposed budget), of which ₹16,514 crore has been spent. Thus, the expenditure is only 60% of the proposed allocation. The gap between allocation and expenditure clearly highlights an under-utilisation of funds (FIGURE 6).

RMSA is a CSS and, therefore, the union and state governments share resources to implement the programme. Earlier, the sharing pattern between union and state governments was 75% to the former and 25% to the latter. However, based on the recommendations of a sub-group of NITI[3] Aayog on restructuring CSSs, from 2015–16, the fund-sharing pattern between the centre and states for RMSA was changed to 60% to the former and 40% to the latter.[4] This development increases the states' responsibility toward funding the scheme. For 2017–18, the union government has earmarked 10% of the total RMSA outlay for new initiatives to boost quality. This fund would be provided to states based on their performance or the initiatives taken to improve learning outcomes (Rajya Sabha 2016). This new policy intervention of linking fund allocation to state performance might be disadvantageous for educationally backward states like Bihar, Jharkhand, and Odisha, as these states already have fewer resources for education.

2 ICT stands for Information and Communication Technology.
3 The National Institution for Transforming India, also called NITI Aayog, is the premier policy 'Think Tank' of the Government of India formed in 2015.
4 For eight north-eastern and eight Himalayan states, the ratio is 90% to the centre and 10% to the states.

Discussion

Secondary education in India has had mixed success. Since the 11th Five-Year Plan, there has been marginal improvement in secondary education—mainly increased enrolment. However, this is almost a case of too little too late, as even after 70 years of Independence, the education sector faces challenges pertaining to basic issues like access, retention, and quality. A major reason for these problems have been gaps in the planning and budgeting stages. Despite the Indian Government's recognition of education as an investment, its allocation of resources to education in general, and secondary education in particular, has been far from satisfactory. For the last 10 years, public spending on secondary education has been stagnant at 1% of GDP. State governments already account for more than 80% of the country's total budgetary spending on secondary education. Since 2015–16, following the 14th FC recommendations and subsequent cuts in the union budget, a larger share of the burden of investment has shifted to the states.

RMSA, which was launched with the objective of providing universal quality secondary education, has been unsuccessful. The sector is inadequately funded to even provide professionally qualified teachers and basic infrastructure at every school, which are prerequisites for ensuring quality education. Despite this situation, the largest share of the secondary education budget continues to go towards supporting non-governmental secondary schools.

In order to reap the benefits of the demographic dividend, it is imperative to ensure high quality, accessible, and affordable secondary education for all.

The scheme itself is suffering from under-allocation and under-utilisation of funds. Studies have shown that procedural and institutional bottlenecks, deficiencies in decentralised planning, and systemic weaknesses, like a shortage in human resources, are some major obstacles in the efficient utilisation of funds (CBGA 2011).

The first step towards improving secondary education will be to make a long-term commitment to the public provision of education. Unlike elementary education, secondary education in the country is not a fundamental right. Hence, the government never prioritises the secondary education sector. However, to sustain the growth in elementary education, and in order to reap the benefits of the demographic dividend, it is imperative to ensure high quality, accessible, and affordable secondary education for all.

As education is in the concurrent list, it is critical for both levels of government to step up public investment in education at the secondary level. The government must invest in institutional development by increasing fund allocation for infrastructural development, teacher education and training, curricular and pedagogic reforms, and quality assurance.

Finally, a focus on decentralised planning, smoothening of fund flow and utilisation processes, and strengthening the government apparatus responsible for delivery can help significantly in filling the gaps between allocation, spending, and the needs of the education sector in India.

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APPENDIX TABLE 1: **Public expenditure on secondary education (₹Crore)**

Year	State	Centre	Centre and State
2010–11	64,220.7	7,137.6	71,358.4
2011–12 (RE)	78,529.6	9,458.6	87,988.2
2012–13 (BE)	88,376.2	10,468.6	98,844.8
2011–12	75,510.3	10,062.6	85,572.9
2012–13 (RE)	91,324.3	11,583.1	102,907.4
2013–14 (BE)	102,329.0	13,340.3	115,669.3
2012–13	80,075.8	9,862.3	89,938.1
2013–14 (RE)	96,134.6	10,899.6	107,034.2
2014–15 (BE)	108,477.1	14,144.1	122,621.3

NOTE: Planning and Monitoring Unit, Department of Higher Education, MHRD (2004–05 to 2006–07, 2007–08 to 2009–10, 2008–09 to 2010–11, 2010–11 to 2012–13, 2011–12 to 2013–14, and 2012–13 to 2014–15).

APPENDIX TABLE 2: **Expenditure on secondary education by state (₹Crore)**

States	2010–11	2011–12	2012–13	2013–14 (RE)	2014–15 (BE)
Andhra Pradesh	4,300.1	5,104.5	6,113.0	7,172.6	5,324.6
Arunachal Pradesh	110.0	133.0	219.7	156.9	192.3
Assam	1,758.8	1,758.6	1,983.7	2,803.9	3,601.3
Bihar	1,634.9	2,252.6	1,947.9	3,289.5	4,569.1
Chhattisgarh	1,041.0	1,144.0	1,198.9	2,632.7	3,012.6
Goa	450.3	428.5	511.4	541.7	594.6
Gujarat	3,091.6	3,235.0	3,547.2	3,921.1	4,407.7
Haryana	1,832.8	1,860.2	1,393.7	1,973.9	2,547.3
Himachal Pradesh	886.3	879.9	1,115.1	1,279.7	1,392.9
Jammu & Kashmir	836.5	1,080.1	1,166.8	1,503.7	1,804.9
Jharkhand	418.7	476.0	507.2	707.8	785.0
Karnataka	3,097.0	3,682.1	4,296.6	5,382.5	6,137.5
Kerala	2,581.7	3,483.2	3,941.9	4,355.1	5,293.7
Madhya Pradesh	1,638.5	2,298.0	2,320.7	2,892.5	3,780.1
Maharashtra	10,268.2	11,435.0	12,627.2	13,925.3	15,805.4
Manipur	172.3	214.9	217.7	212.6	213.0
Meghalaya	190.2	202.8	205.3	240.9	273.8
Mizoram	138.1	145.3	170.9	202.3	177.7
Nagaland	198.2	345.8	276.3	359.8	441.6
Orissa	1,543.1	1,676.1	1,793.9	2,272.6	2,990.0
Punjab	2,620.1	3,466.0	3,938.5	4,817.0	4,397.7
Rajasthan	3,283.4	3,667.4	4,018.7	5,821.4	6,886.5
Sikkim	256.3	238.3	246.7	269.5	334.9
Tamil Nadu	5,080.3	6,120.4	6,920.6	7,667.4	8,967.3
Tripura	433.6	488.3	502.0	663.5	633.5
Uttarakhand	1,363.5	1,613.1	1,798.7	2,226.0	2,408.9
Uttar Pradesh	5,797.3	6,733.8	7,562.8	9,178.6	7,064.1
West Bengal	6,583.3	6,815.1	7,843.0	8,658.9	10,706.1
Telangana	0.0	0.0	0.0	0.0	2,257.5
TOTAL	60,922.9	70,510.4	77,086.4	92,403.2	103,201.7

NOTE : Planning and Monitoring Unit, Department of Higher Education, MHRD (2004–05 to 2006–07, 2007–08 to 2009–10, 2008–09 to 2010–11, 2010–11 to 2012–13, 2011–12 to 2013–14, and 2012–13 to 2014–15).

Integration of Vocational Education into Secondary Education

RAVI NAYSE & DR ABHIJIT PRABHUGHATE

The Skills and Employment Scenario in India

India is currently at a unique juncture in terms of social and economic development. Since the beginning of the 21st century, it has received international acclaim for being an economy set on a promising trajectory of growth and development. The Federation of Indian Chambers of Commerce and Industry (FICCI) estimated that more than 150 million job opportunities would be created in the decade of 2006–16. India's demographic dividend—its large population of educated youth—is counted as a key driver of the economy going forward.

Whether this optimistic vision for the future flourishes depends on the availability of a human resource pool that is equipped with the right knowledge and skills required to keep pace with rapid technological developments occurring worldwide. The shortage of semi-skilled workers is already being felt across industries, and the demand for skilled workers is estimated to grow substantially in sectors such as information technology, retail sales, leather, civil aviation, construction, automobiles, logistics, and many more. This is a daunting challenge to address, as only 15.6% of urban and 8.3% of rural labour force is "skilled" (FICCI 2009).

Vocational Education and Training

Vocational Education and Training (VET) is a promising solution to address the wide schism between the demand and supply of skilled labour in the country. The concept of VET has been defined in several ways by highlighting its different facets. An all-encompassing definition given by Bengeri (2014) includes all these aspects.

"*Vocational Education (VE) is intended to mean any high school, junior college or adult education program that deals specifically in an organized and systematic manner with the acquisition of skills, understandings, attitudes and abilities that are necessary for entry into and successful progress with a specific occupation or job family.*" *(363)*

Vocational education focuses on the practical application of learned skills, and generally emphasises theory, or traditional academic skills, to a lesser degree. In this way, it links formal education with the

FICCI estimated that more than

150 million

job opportunities would be created in the decade of 2006–16.

working world. Individuals who've graduated from a specific vocational course or a vocational school have an advantage over informally trained job-seekers because they now have a certification from an independent organisation that they have the skills needed to successfully perform a specific, skilled occupation.

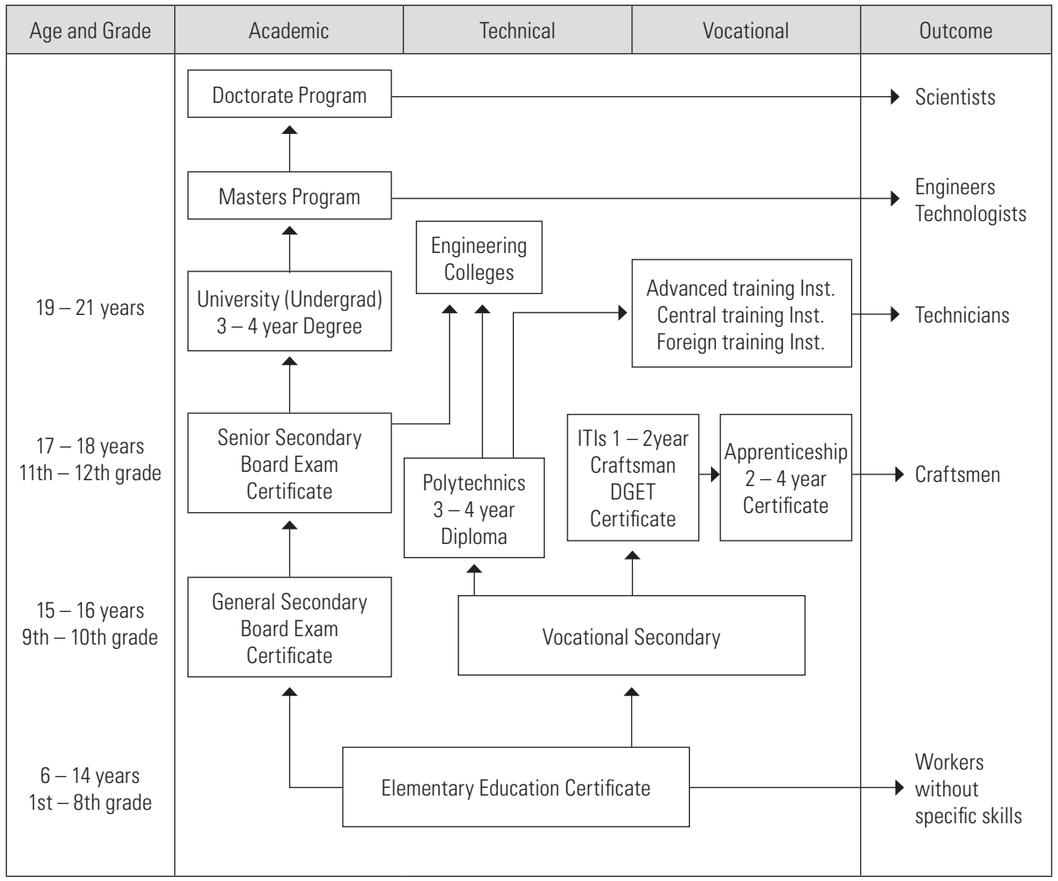
Vocational Education at Different Levels

Vocational education has been on the radar of Indian policymakers since the first Five-Year Plan (FYP). Since then, an elaborate structure of institutions and certifications has evolved to provide VET for students from Grade 9 onward (FIGURE 1).

Historical Overview of Vocational Education at the Secondary Level

In the early 1950s, the Education Commission felt the need to promote technical skills and efficiency at all stages of education (Mishra, Shome, and Agarkar, 200). Since then, the focus on VET at the secondary level can be seen in subsequent FYPs as shown in the table below.

FIGURE 1: **Academic, technical, and vocational parallel-training structure/system in India**



SOURCE: Figure extracted from "Skill Development in India: The Vocational, Education, and Training System," Report No 22, World Bank

TABLE 1: **Vocational education in India's Five-Year Plans**

Five-Year Plan	Emphasis on Vocational Education at Secondary Level
1st plan	Establishing schools and community centres.
2nd plan	Setting up workshops and farms in schools.
3rd plan	Integrating and improving status of vocational education.
6th plan	Involving experienced craftsmen and practitioners of art in order to impart skills to students.
7th plan	Reforming the education system so that it will more practical and more relevant to the lives of people.
8th plan	Vocational education looked at as a source of manpower for the emerging fields of the economy.
10th plan	Linking education to the world of work.

The Eleventh Plan set up the National Skills Development Mission (NSDM) to reform the Skill Development programme and its allied initiatives. Under this scheme, the state governments are expected to leverage their departments/agencies to constitute a State Skill Development Mission. Some of the high-growth sectors, mostly governed by corporates players, are also expected to play an important role, as workers with knowledge-based skills are going to continue to be a necessity in these sectors. The outlay for the entire project is estimated to be ₹22,800 crores (Biswas 2008).

Vocational education is mostly offered at Grades 11 and 12. However, students who reach these grades generally aspire to study further. However, there is no specialised curriculum/diploma/graduation course after Class 12 to pursue further education in a similar vocation. In addition, the vocational education courses taken in Class 11 and 12 may not be entirely relevant by the time the student enters the work force. Thus, the present system does not allow for vertical mobility—the skills obtained are lost. It is evident from this that policy-makers consider the higher secondary stage of school education to be the most crucial, mainly because this is the stage when necessary skills and competencies are acquired, enabling students to enter the world of work or pursue higher education.

A Centrally Sponsored Scheme (CSS) for providing vocational training in secondary education was launched in 1988. It was implemented by states/UTs for the formal sector, and by non-government organisations (NGOs) and voluntary organisations (VOs) in the non-formal sector. The objectives of the scheme were:

1. Provide diverse skill-based educational opportunities so as to enhance individual employability
2. Reduce the mismatch between the demand and supply of skilled human resources
3. Provide an alternative for those pursuing higher education

The revised scheme for Vocationalisation of Secondary and Higher Secondary Education was approved by the Cabinet on 12 February 2014. The provisions aimed to incentivise government-aided schools and recognised private schools to introduce vocational education courses as per National Open School (NOS) guidelines, and in accordance with the norms of the scheme. This was mainly to ensure the active participation of government-aided schools and recognised private schools in promoting vocational education at the secondary and higher secondary level (Biswas 2008).

TABLE 2: **Scale of vocational education in secondary schools**

1	No. of secondary schools as of 2014–15	1,35,335
2	No. of senior secondary schools as of 2014–15	1,09,318
3	No. of students at secondary level (Classes IX–X) as of 2014–15	3,252*
4	No. of students at the higher secondary level (Classes XI–XII) as of 2014–15	1,517*
5	Estimated population of 14–15 age group as of 2014	49,801*
6	Projected population of 16–17 age group as of 2014	44,734*

*Figures in 1000s

Scale of Vocational Education in Secondary Schools

The following statistics give an overview of the present status of secondary and higher secondary schools, and the enrolment of students in the country (Government of India 2016).

International Comparison: Countries That Have Been Successful in Integrating Vocational Training into Secondary Education

The above statistics reveal that a significant number of students drop out after completing Class 10. These dropouts, as well as a certain proportion of children enrolled in Class 11, may have an aptitude for vocational courses, but they may have been compelled to pursue academic courses due to the absence of opportunities to acquire skills. These students constitute the target group for vocational education at the secondary level. Creating opportunities for such students right from the secondary level is essential, as evidence shows that countries with a strong VET system have increased their marginal productivity and lowered unemployment rates. For instance, China has done stupendous work in VET in schools. The Chinese school system introduces vocational education at the junior secondary level for students in the age group of 12–14 years. After completing nine years of primary schooling, 47% of students enter the vocational stream at the senior secondary level in China in comparison to just 3% in India. Chinese students generally enrol in the three-year vocational education stream at the senior secondary level. As part of their education, they are required to spend their third year working as interns at local enterprises to acquire practical training and industry exposure. There are no such provisions in India. Like China, countries such as UK, Germany, USA, Japan, and South Korea provide skill training courses at the secondary level at a much larger scale than in India. This has helped these countries acquire a highly skilled workforce. For example, almost 96% of South Korea's workforce is skilled.

Individuals graduated from a specific vocational course have an advantage over informally trained job-seekers because they now have a certification to successfully perform a skilled occupation.

As observed by Biswas (2008), despite the infrastructure developed in schools, and the resources invested through various policy initiatives, only about 2.5 million vocational training seats are available in India, whereas 12.8 million people enter the labour market each year. Similarly, the World Bank Development Report (2006) showed that only 2% of youth in the 15–29 years age group had received formal vocational training in India.

Vocational Training for School Children

Students completing their primary/elementary schooling need to be taught both generic and specific skills that will help them build successful careers. Besides technical skills, the development of employability skills should be emphasised; these would include (i) basic communication skills, (ii) basic IT skills, (iii) customer care services, (iv) etiquette and manners, (v) the art of public speaking, (vi) front office management, (vii) telephone communication skills, (viii) interview skills, (ix) interpersonal or social skills, (x) team building skills, (xi) employment seeking skills.

Under Rastriya Madhyamik Shiksha Abhiyan, a scheme has been introduced to impart skills to students from Class IX onwards, through the state governments and the CBSE. Courses corresponding to the National Skills Qualifications Framework (NSQF) Levels I to IV (which totals a duration of about 200 hours in a year) are to be implemented in schools by state education departments by engaging the services of NSDC-approved training providers (TPs).

Following are the suggested courses for vocational training in schools:

1 Accountancy and auditing
2 Insurance
3 Interior design
4 Agro-based food industries (animal-based and crop-based)
5 Knitting technology
6 Apiculture
7 Maintenance, repair of electrical domestic appliances
8 Audio-visual technician
9 Marketing and salesmanship
10 Auxiliary nurse assistant and midwives
11 Mechanical servicing
12 Basic financial services
13 Multipurpose health worker
14 Bleaching, dyeing and fabric painting
15 Building maintenance
16 Catering and restaurant management
17 Office management
18 Office secretary
19 Child care and nutrition
20 Photography
21 Computer technique
22 Plantation crops and management
23 Post-harvest technology
24 Crop cultivation and production
25 Pre-school and crèche management
26 Purchasing and store-keeping
27 Repair and maintenance of power
28 Healthcare and Beauty culture
29 Hospital documentation assistant
30 Hospital housekeeping
31 Veterinary pharmacist or artificial insemination assistant
32 Institutional housekeeping

Only 3%

enter the vocational stream at the senior secondary level in India in comparison to 47% in China after completing nine years of primary schooling.

Critical Look at Existing Nature of Different Vocational Training Given at the Secondary Level Education

While noting the initiatives taken by the central and state governments and industry, it is observed that there are several challenges in providing VET in secondary education. Some of these critical issues include:

1 Vocational education is not 'aspirational' for students, parents, and the community at large, for a variety of social and economic reasons.
2 The current initiative of the MHRD—introducing vocational education subjects in schools—seems to be inadequate, both in terms of reach/coverage, as well as its integration with the formal academic system.
3 The schools do not have the requisite workshops, trainers, and industry linkages to impart high quality and relevant vocational skills.

To move forward we need to establish forward integration, systems, and processes which will help in creating a clear pathway for vocational students to enter higher education streams.

Interventions that Support Vocational Training

Good practices in the implementation of vocational education in schools have also been identified. Some of these are:

Production-cum-training centres can help provide a learning experience that will link the teaching and learning process with the world of work. These centres will help students not only gain relevant skills and attitudes, but also the necessary hands-on experience to use their skills in the production and marketing of various goods and services. The distance between education and work can be bridged by establishing PTCs in schools, as the production processes also become learning processes.

Every school should set up a School Management Committee (SMC) to ensure the quality and smooth functioning of vocational training programmes. The committee advises the school on the selection of courses, teachers/trainers, guest faculty, equipment, etc. It facilitates the setting up of a parent-teachers committee and student support systems, and helps the school in forging linkages with the industry for on-the-job training and employment.

A provision for independent research on different activities, preferably in collaboration with relevant industry associations, should be made. The findings of research studies are to be used to further improve the scheme. The research would also include collecting information on the employment status of vocational students and tracking of their post-school movement.

Recommendations

1 After taking into account current initiatives and challenges, we suggest that a two-pronged strategy is adopted: (a) Deepening the coverage of NSQF-compliant skill programmes; and (b) Integrating vocational education into the formal academic system would help in the vocationalisation of secondary education.

2 The ongoing initiative of the MHRD—implementing NSQF-compliant skills programmes in secondary and higher secondary schools, through NSDC approved third parties (TPs)—needs to be scaled up even further, to cover a larger number of students. The scheme would also need to be reviewed and improved to ensure better quality and sustainability. The courses being offered may also be revisited, so that they can be updated based on local economic resources and entrepreneurial opportunities.

3 The computer labs that have been set up in schools under the ICT @ Schools scheme may be utilised to impart vocational skills to students and local youth after school hours, in partnership with the agencies who operate such computer labs.

4 Schools which have adequate land and infrastructure may be utilised to set up formal vocational skill centres, in partnership with NSDC Training Partners. Such centres may operate outside school hours to avoid any disruption of normal academic work.

5 All the skill development courses conducted through the above means should formally be certified under the NSQF by SSCs to enable the trainees to move up the chain of qualifications and thereby achieve better job prospects and career progression.

6 Vocational education subjects (the ones offered in ITIs) may also be offered in schools from Class VIII onwards, as a formal stream along with science, math, and other subjects. Completing the course would earn certification from the respective boards of education.

7 The vocational skills qualifications acquired through ITIs (NCVT courses) may be given a certificate of equivalence to Class X or XII after the concerned student completes the essential bridge course to address gaps, if any, in the language and knowledge components. The Government of Gujarat has already introduced such a system, and the MSDE has taken this up for national-level notification with the MHRD.

8 An organised intervention for counselling students on career options may be designed and introduced in schools to enhance awareness about vocational skills-based career opportunities.

The measures suggested above would not only help students pursue skill development programmes, but it would also enhance training delivery capacity in the country and thus meet the larger objective of Skill India Mission. These measured would also enable students who acquire vocational skills to be formally certified by the boards of education, thus providing them the opportunity to pursue higher academic qualifications, while using the skills they have acquired for wage or self-employment. This will result in better integration, career/academic progression, and consequent acceptance of vocational skills programmes by the society at large.

Conclusion

Industrial and labour market trends clearly indicate that it is necessary to strengthen vocational education in India. Providing vocational education to secondary school students will enable us to broaden the vocational education base at the secondary level of education. This will further build the foundation for a vocational education system in the country. Establishing forward integration, systems, and processes to foster this inclusion will help in addressing this effectively. Creating a clear pathway for vocational students to enter higher education streams is the way to move forward.

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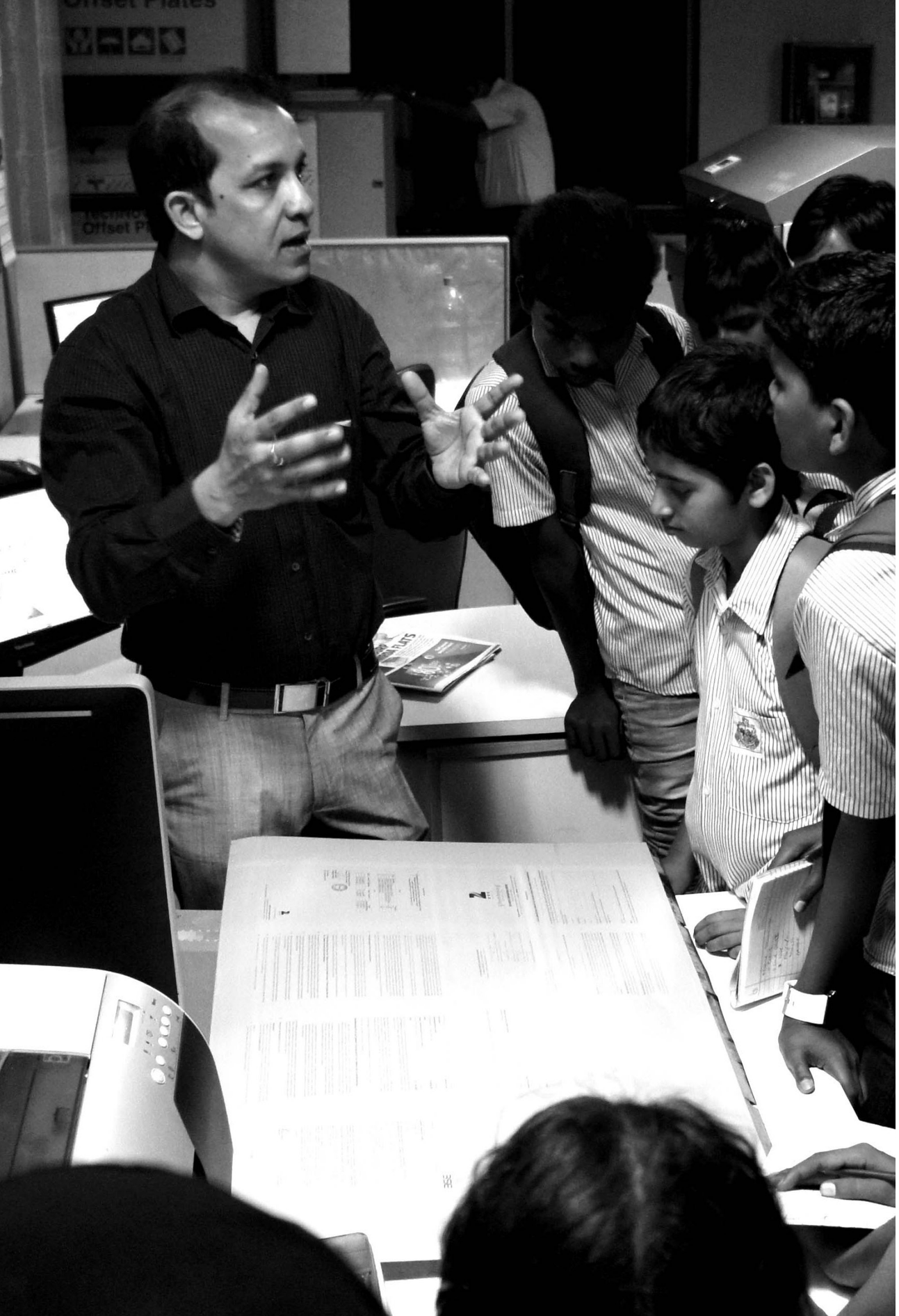

Use of Information and Communication Technology (ICT) in Secondary Education

CHANDITA MUKHERJEE

Technology in the Classroom: A Quick Recap from the 1970s

The idea of deploying technology in education was not new in India when portable computing devices rose to popularity in the 1990s. By this time, we had already had extensive experience of using TV and radio to disseminate educational content. A satellite-linked national television network, built in the early 1970s and broadcasting to the whole country by the mid-1980s, was already in place. When the plan to set up this national television network was announced, it attracted sharp criticism due to the heavy investment it entailed in a country facing numerous poverty-related problems. The government in turn argued that it would lead to the spread of literacy and would aid development at the grassroots level. The assumption was that development meant having access to information, and that information technology would be key to delivering it. The decades that followed would show that these assumptions were somewhat unfounded, and that the national network and its successor channels, numbering in hundreds, may have brought us something else. However, let us get on with our story of technology in education.

First in the chain of developments that led to the setting up of a national network was the well-known Satellite Instructional Television Experiment (SITE) project of 1975–76, carried out by the Indian Space Research Organisation (ISRO) in collaboration with the National Aeronautics and Space Administration (NASA). SITE led to the development and launching of the Indian National Satellite System (INSAT) that would support the national TV network. Apart from TV, the satellites gave us low-cost STD telephony, remote sensing, meteorological data, and countless other space-based technological applications that we take for granted today. The following two decades saw the founding of institutions that produced educational programming and provided training, such as the Development, Education and Communication Unit (DECU) of ISRO; the Central Institute of Educational Technology (CIET) of the National Council of

Learning was not supposed to be fun, and it did not matter if the study material was somewhat incomprehensible. Not surprisingly, educational media too went down the same path, even if its mandate may have been to make knowledge more accessible and interesting.

Educational Research and Training (NCERT); the Indira Gandhi National Open University (IGNOU), a full-fledged university for distance learning; and educational multimedia research centres (EMRCs) and audio visual research centres (AVRCs) in various universities under the Consortium for Educational Communication (CEC) of the University Grants Commission (UGC). All these institutions came into existence through the 1980s and 90s.

The setting up of these big teaching and production centres was accompanied by countless other smaller, non-governmental efforts in the area of educational communications. These smaller projects received sporadic support from UNESCO, UNICEF, the central ministries, NGOs, and other sponsors. Before the time of multichannel TV, some quality educational programmes like *Bharat Ek Khoj*, *Turning Point*, and *Bharat ki Chhap* broadcast on Doordarshan achieved a degree of popularity. On Doordarshan, even a 10% audience share in 1989–90 for *Bharat ki Chhap* indicated that 12 million people, of the 120 million estimated to have been receiving Doordarshan's signal at the time, were watching. These initiatives lost their impetus in the 1990s when commercial sponsorship came to dominate the choice of broadcast content.

Much of the programming on these official educational channels was textbook-driven and unidirectional. The predominant format was televised lectures, sometimes complete with chalk and blackboard. It was unidirectional communication between the broadcaster and the learners and did not include the latter, even though a token few may have been shown sitting in the studio. Though the producers did not have to follow the lecture format, most government-produced educational media in the 80s and 90s were fairly formulaic. To be on the safe side, the producers preferred textbook-style narrations to structure their programmes, treating the audience as passive learners.

The programmes predominantly featured one person delivering a lecture, leaving little to the imagination. Viewers were rarely encouraged to go out and explore subjects in a hands-on way or return with their own questions. Thus, the programmes tended to be "hard" and "boring" and catered largely to captive audiences made to watch them during class time. Such productions have been broadcast for over three decades now. Though the rate of production has been somewhat declining over the past few years due to funding cut backs, the institutions already set up persist, and their employees remain in place, so the programming continues, though much of the material being broadcast at present is recycled. To balance the scale, it must be noted that the challenges faced by these producers in translating educational content into media were manifold. Their heavy workloads discouraged innovation and they could rarely take the camera out of the studio. Budgets were restricted, so experimentation with graphics and animation was also limited.

The assumptions that underlaid the programming were similar to those of the educational system. Schools were rigid, tradition-bound, and revolved around the textbook. Teachers did not have much agency, and students had little autonomy as learners. In consonance, the underlying worldview was that learning was torture to be borne. It had to be done by rote or it would not stick. Teachers, students, and their parents, if educated, were kept busy with the task of completing weighty exam syllabi. Exams required reproducing parts of ingested textbooks to "prove" that the student had "studied". Scant attention was paid to understanding connections and causes.

Fundamentally, it was thought that education was supposed to be "hard". In Indian languages, the words for "study", like *mukhasta karna*, *abhyas karna*, and *paathh yad karna*, all valourise memorisation. Learning was not supposed to be fun, and it did not matter if the study material was somewhat incomprehensible. Not surprisingly, educational media too went down the same path, even if its mandate may have been to make knowledge more accessible and interesting.

Multimedia in the Classroom: The First Wave in the 2000s

By the 1990s, small and portable computers had become commonplace in India, and several predictions were made about the potential educational applications of technology. Futurologists predicted that computers, the Internet, cost-free telephony, and satellite television would all blend to create fantastic, low-cost learning opportunities for all. Small devices would be in every hand; everyone would be wearing headphones and educating themselves on the move, learning languages in their sleep, and dancing about to keep fit right around the clock. Such fantasies about the endless potential of the human mind when combined with technology made everyone feel good in the 1990s, but substantial, meaningful educational content did not appear on the scene for a long time to come.

Internet has been the most significant development since the 1990s, with potential to cause lasting change in education. However, it was portrayed as a dangerous place; schools were warned to keep it switched off, or else bear the risk of viruses and undesirable content.

Let us go back to our main theme: the relevance of technology in education. Once personal computers, combined with projectors and/or large screens, became common, new business entities emerged in the 2000s with syllabus-related educational media packages targeted at schools. They required heavy investment in hardware and software that had to be replaced or renewed periodically. The two were often tied to each other to lock in the buyer—the software would not run on any other hardware. The material was proprietary; one company even devised a time lock to ensure that its DVDs became inaccessible when the subscription ran out, so even what was paid for was lost, and, needless to add, making copies was not possible. It may have been, by some who knew the technology, but for most it was sealed off.

These companies sold the dream that quality material would be made available to the rich and poor alike. They offered multimedia educational packages in all subjects, which included elements like videos, animation, slide shows, photographs, songs, and music. They could be shown at the teacher's convenience and at the required pace, unlike the earlier public programming distributed through radio and television (where the class had to line up to watch or listen at the broadcast time, regardless of whether they were studying the corresponding topic in the syllabus).

These products were marketed vigorously and many in the private sector educational community and government school networks like the Navodayas and Kendriya Vidyalayas too, invested in these new offerings eagerly. However, it was soon revealed that most of these companies were just exploiting people's fascination with technology. Essentially, the multimedia packages dressed up textbook content and presented it in a new box. Children watched these programmes just as passively as they had when the TV presenter had more or less read aloud from the textbook.

Promises of encouraging new ways of thinking and problem-solving were far from realisation. The interactive potential of technology was barely explored; multiple-choice quizzes were the extent of "interactivity." Not much progress had been made beyond the lecture-based educational TV shows of the 1990s in terms of form.

The most significant development since the 1990s, with potential to cause lasting change in education has been the Internet. However, all commercial educational companies kept it out of the equation. It was portrayed as a dangerous place; schools were warned to keep it switched off, or else bear the risk of viruses (thus ruining their investments) and undesirable content (ruining their students' morals). These security warnings protected the vendor's interests rather than their clients' well-being. Had the benefits of browsing the Internet been more widely known and the plethora of free resources available on it discovered, the makers of these multimedia packages may have found that fewer subscriptions were renewed at the end of the billing cycle. Exclusionist ideas were being peddled in the name of purity, pandering to fears of unknown evils.

Despite the inherent inertia of the system, the impact of the recommendations of the NCF have translated into new curricula and textbooks across the country.

Private schools and government education departments responded to the intensive marketing of information and communication technology (ICT). Large fortunes were made in the first 15 years of the new millennium by several players in the school multimedia content field. Some say that school administrators in charge of equipping institutions with computers also benefited. Whether the children profited from these technologies remains a matter of debate.

These technologies were also rolled out at a massive scale in a bid to standardise education across the board and ensure that all children received the same "high quality" education. Such thinking leaves no space for local culture, geography, or variations in the economic backgrounds of learners. Such material left no room for the creativity of students and teachers.

The Context for Technology in Education in the Present: Policies and Bodies

This section looks at some government policies and bodies relevant to ICT in education.

While the marketing of ICT packages was going on, with merry seminars at holiday resorts for decision-makers, the NCERT came out with a breakthrough policy document in 2005: the National Curricular Framework (NCF). While much has been written on NCF 2005, this discussion will focus on issues of equity and quality, where ICTs play a very important role. NCF 2005 questioned educational practices that favoured those who had had access to education for generations and pushed out those who had not. It sought to resolve this inequity by showing that the system unjustly compelled a large number of children to drop out by the 5th standard. Since there were fewer middle schools and high schools than primary schools, a large number of children were squeezed out by being marked "failed" at some point before they reached the age of 11 years.

The recommendations of the NCF have had a profound impact. Despite the inherent inertia of the system, these recommendations have translated into new curricula and textbooks across the country during the decade since. With high schools now becoming packed, there is a widespread demand to upgrade primary schools to accommodate students till the 8th standard and start new high schools.

The NCF also cleared the ground for a new way to introduce ICT into education. The following are some anecdotal impressions, gathered on recent visits to schools in Maharashtra, Gujarat, Rajasthan, Mizoram, and Tamil Nadu, which are of relevance to the present discussion:

- There is an increase in activity-based learning and the use of learning aids devised by teachers from locally available materials, in schools across India.
- It is now common to see learners working in groups while the teacher observes and plays the role of guide rather than instructor as she moves from group to group.
- Teachers in rural Maharashtra and Tamil Nadu often use terms like "constructivism" (*gyanrachanavad*) with conviction. Their teaching is also based on this framework.
- Public exhibitions showcasing student projects have existed for several years, but today we see a new emphasis on originality, practical application, and an effort to push students to higher levels of achievement in such routine, district-level fairs.
- Several teachers and educational administrators have received national awards for their innovations in improving students' learning experience through technology. Their innovations have inspired countless others.
- In many states (Maharashtra, West Bengal, Tripura, and Tamil Nadu, for example) there are active teachers' forums or equivalents thereof. These forums comprise groups of teachers, connected by social media applications like WhatsApp, who share a constant stream of educational ideas and experiences with each other, including photos and videos made on their phones.
- The community has become more deeply interested in education and in improving physical facilities in local government schools. Clean and odour-free toilets are no longer remarkable, but commonplace. In more prosperous states like Maharashtra and Gujarat, community efforts to install desks, lighting, and fans in schools are common. In several places, computer labs have been set up through community effort. Given the uncertain supply of electricity, in several places one has seen solar power plants set up to support the labs.

All in all, one can say that this is a time of great flux. It is now commonly held that educational quality can be improved through the professional development of teachers and investment in physical facilities. State governments and communities are making efforts to accomplish this at different levels of engagement and scale.

Another document of interest is the National Policy on Information Technology (NPIT), 2012. This document reveals the government's aspirations to transform India into a knowledge economy with a global role. Though the policy does not directly concern school education, its provisions regarding human resource development have implications in the field. The focus of the NPIT is on developing "necessary physical and institutional infrastructure for creating a pool of 10 million trained persons in IT sector by the year 2020 through formal and non-formal sectors, with focus on skill development and expertise creation". In pursuit of this goal, the NPIT recommends updating the curricula and syllabi regularly at all levels to include knowledge of ICT as an integral part of educational programmes. This is of relevance to policy-makers and implementation agencies concerned with school systems. However, ICT should not be seen as only a potential source of skilled employment; the aspects of expertise and creativity are its most vital parts.

The National Mission on Education through Information and Communication Technology is another body under the MHRD that would be of interest to those seeking to develop their capacity to effect change in this area. This body implements a government scheme to leverage the potential of ICT in education for the benefit of all learners in higher education. This intervention is expected to enhance the gross enrolment ratio in higher education by five percentage points in the 11th Five-Year Plan period. Its objectives include:

- Development of knowledge modules for teachers.
- Development of knowledge modules for learners.
- Providing e-knowledge to all Indians free of cost.
- Building connectivity and knowledge networks among institutions of higher learning.
- Conducting pedagogical research for the development of learning modules for disparate groups of learners.
- Providing support for the eventual creation of a virtual technological university.

A body like the Narotam Sekhsaria Foundation could explore the above objectives further with a view to tie up with some NGOs and schools, with the support of the MHRD in some of these areas.

Possible Routes Out of the Routine with ICTs

Now that teachers and government schools are ready for pedagogical change, there is appreciation of quality by the community, more and more computer labs

are being installed in schools, and there are even tablets for each child in some schools for underserved communities, what could be some of the meaningful ways in which technology could be meaningfully brought into the classroom? This section is about a possibility that one would suggest that the Narotam Sekhsaria Foundation explores.

These suggestions emerge from the work of Prof Nagarjuna G of the Homi Bhabha Centre for Science Education, and his collaborator, Amit Dhakulkar. The work, targeted at middle school students, was carried out in the Connected Learning Initiative (CLIx) project of Tata Trusts, Tata Institute of Social Sciences (TISS), and the Massachusetts Institute of Technology (MIT). Nagarjuna and Dhakulkar also conducted a similar programme for undergraduate students, as part of the National University Students' Skill Development (NUSSD) programme at TISS.

Technology in the classroom will helps students understand the processes of learning and develop the capacity to think independently.

At the heart of these projects is a nine-month foundational course that can be redesigned for specific audiences, for example, middle school students, teachers, and high school students. It aims to transform learners from being mere consumers of Internet content into producers who share their work with the world. The subject of the course is not ICT per se, but a series of activities that stimulate learners to think, solve problems, and communicate their thoughts to peers using technology. It enables them to use technology in all aspects of their studies and strengthens self-expression in their mother tongues and in English. It also helps them solve problems in math and logical thinking, providing skills that cut across disciplines. Its recommendations are also scalable: they can be implemented in one school or in a large set of schools, as is feasible for those implementing such a programme. Here are some of the principles and components of the course:

- Free and open source software has to be at the core of any new technologies being introduced into the classroom to ensure quality at no cost and independence from vendors, viruses, and other forms of trouble.
- A shared platform that enables children to work in a social environment where they can see and comment on each other's work, share their own discoveries, and grow together, along with their teachers. Such peer learning is at the centre of connected learning, for the horizontal transfer of knowledge among peers is rapid and deep.
- The provision to type in their mother tongues so that learners may express their thoughts freely and access and respond to available materials in their own languages. At the same time, they must learn to type in English and to use English for referencing and communication. Bilingual and even multilingual fluency has many benefits on which much has been written.
- Learning activities are blended by design so that learners understand theory and practice as a continuum; for instance, interweaving the practices of reading and doing experiments or gathering data from outside the school.
- A focus on drawing, an essential skill that requires pre-conception, visualisation, and planning with objects and spaces. It can be taught easily with an open-source vector graphics software such as Inkscape. It builds creativity and gives scope to the imagination.
- Tools to overcome trouble with math and related misconceptions acquired in earlier grades; for instance, the playful open-source software, GeoGebra, which combines geometry and algebra. It helps learners create animations and visualisations that enthral them and gives them a firm base for logical thinking.
- Rudimentary programming, animation, and other graphic simulations using the open-source software Logo.
- Open Street Map (OSM), an application that allows students to observe their surroundings and add features they have noted to a publicly available map on the Internet. This encourages students to reflect on spaces, their proximity or separation, and to measure and relate satellite images to the three-dimensional reality around us. OSM's crowd-sourced maps show areas of the world that would otherwise not be detailed in regular, commercial maps. Commercial maps might indicate where ATMs and coffee houses can be found, but may not show a school or a water tank, spaces which hold greater significance locally.
- Spreadsheets to collect, analyse, and present data in useful ways. Students could go to a physical site or a site on the Internet to collect data of their interest, say the number of runs scored by a particular cricket team across a series of matches. They could then enter this data using Spreadsheet, a software that is part of the Open Office suite. They can ask questions using the data, analyse their findings, look for connections, and present them effectively with Spreadsheet. Understanding and presenting data is a skill they will need more and more as they grow older.
- An exercise in oral history could be attempted, since mobile phones with audio and video recording facilities are now common. Here, groups of students meet an elderly person and ask a structured set of questions about times past. All groups ask similar questions of different respondents. If they wish to conduct an audio interview, they could use the open-source software Audacity to transfer their files, transcribe their recordings in the local language, and plan an edit based on these transcriptions. Once edited, the recording becomes a podcast, which they then share with their friends on the course platform or with the wider world over the Internet.
- Similarly, if they shoot a video, they transcribe its contents and, plan and edit their video with the open-source an Open Source software called OpenShot, and then share it. When several groups in a school perform this exercise, an interesting picture of life, in the same place, perhaps fifty years ago, emerges from these multiple conversations. Students get a taste of doing research in local history, appreciating what the narratives shared by the elderly say, and in understanding social change in the recent past. Such activities stimulate the entry of local knowledge into the flow of the Internet and encourage greater diversity.
- Writing about student activities on the course platform, where each one gets a space for blogging. This blog or journal allows them a public forum to look objectively at their own activities and that of their peers and to evaluate what they have learned. On reviewing the blogs periodically, they can decide to attend to aspects where they feel they need more practice. It also allows teachers to keep up with the progress of individuals.
- Throughout the course, students are encouraged to make digital artefacts—written, drawn, photographed, and recorded in video or audio—that are then shared through presentations in class or over the Internet.
- Learning to give and receive criticism, such that the practice of open discussion becomes a lifelong habit.

Such an approach to technology in the classroom helps students understand the processes of learning and develop the capacity to think independently. No matter what subject they go on to pursue, they will know how to investigate it, ask for feedback, and create digital records of their findings for themselves and others.

Computers will then cease to be the topic of yet another exam to pass, but a tool that helps learners reach into the world of knowledge and integrate their thinking with a range of useful skills and practices. It could help them realise their own potential in the field they may take up eventually.

The Narotam Sekhsaria Foundation could look at ways to build a foundation course in ICT for middle school students in order to encourage them to become independent thinkers and creators in their own right.

A Case Study of Integrating Skills at School: The Salaam Bombay Foundation Model

GAURAV ARORA & ANAMIKA DUTT

Introduction

India has one of the youngest populations in the world, with approximately half of its citizens aged below 26 years. This population statistic suggests that India can generate a resource pool of man-power for itself, and the world, in the near future (Mujumdar, 2012). However, to reap this demographic dividend, it is necessary to provide support to this young population through better education, skills training, and employment opportunities. One such step is the Skill India Mission, which aims to train about 400 million people by 2022 for employment in various fields and to further development in self-employment.

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Current Skilling Ecosystem in India and Gaps

A major issue that occurs concurrent to the trajectory of India's advantageous demographic dividend is its jobless growth (Punj & Arun, 2016), a term coined to define a situation when the "output (of an economy) [sic] is measured in terms of Gross Domestic Product, rises, the growth of employment lags way behind" (Datt, 1994).

The skilling ecosystem aims to provide short-term training to youth who have already dropped out from school. The approach mainly focuses on providing a job first, rather than actively empowering the individual to seek out a career. The idea is to

provide short-term technical/non-technical courses to make youth more employable. A bigger concern is that out of the few who may gain employment on completing the training (Laha, 2017), a significant portion discontinue work in less than a year after joining. Additionally, even those who clear the one-year employment mark often fail to find a sustainable career. This is because career advancement (particularly in skills-related employment sectors) is not just a function of skills alone, but also necessitates educational qualification. The same system, which tries to provide jobs for young people, also restricts their ability to advance their careers by labelling them as dropouts. In India, it seems that education and skill development compete with each other—while the education system works hard to keep a child at school, the skilling eco-system celebrates dropouts since that child becomes a potential recruit to fulfil an overall unachievable and unrealistic target set by the Skill Mission.

Constant shift in approach and lack of a clear strategy continues to plague skill development in India.

As a part of the National Skill Development Policy, 2009, an overall target of training 500 million individuals was set, out of which the National Skill Development Corporation (NSDC)[1] was directed to skill 150 million students. As the reality of this unrealistic target began to set in, the current government revised the overall target to 400 million in 2015 (Laha, 2017). Recent reports suggest that the NSDC has managed to cumulatively train only 11.51 million candidates till date, prompting the government to abandon this target altogether, and instead focus on the quality of the skill training (Nanda, 2017). This constant shift in approach and lack of a clear strategy continues to plague skill development in India.

The Need for skills@school

The national skills training programme has failed to notice how integral it is to incorporate such a mammoth initiative into the education system itself. Such a measure would ensure that secondary education and skills development support each other in achieving the twin goals of preventing children from dropping out and elevating skill training to a legitimate channel to employment, as credible as a graduate degree.

Employers today are increasingly filtering candidates on the basis of their skills and professionalism, their ability to navigate a work environment, communication skills, problem-solving and decision-making skills, and their capacity to cope with a digital world (Education Services, Austrailia, 2014). If skill development is integrated within the larger matrix of the education system, youth can be better trained to navigate this challenging employment market.

Rashtriya Madhyamik Shiksha Abhiyan (RMSA), created under the Department of School Education and Literacy, Ministry of Human Resource Development, is a national scheme sponsored by the central government to improve the quality of secondary education as a whole. The scheme was modified to include vocationalisation of higher secondary education[2] as one of its goals in 2014, with the aim of enhancing the employability of youth through demand-driven, competency-based, modular vocational courses. At the same time, it aimed to reduce the dropout rate at the secondary school level. However, the biggest drawback of the scheme was that the training modules were not customised to the learning levels of school-going children. One cannot follow the same approach for training 12–14 year olds, as 18+ years youth. Thus, the skills training needs to be designed to suit learners' capacities. Skills would have to be taught using different classroom strategies and material, depending on the age groups it is intended for. Our experience at Salaam Bombay Foundation (SBF) give us reason to believe that the vocations/skills taught at the school level should be packaged as a hobby and not a serious trade, thereby making the learning joyful and interesting.

Moreover, operational challenges within schools are a huge barrier to coalescing secondary education and skills development. For e.g., the BMC school system in Maharashtra does not provide for more than 70–80 hours per year for vocational training in a subject which the student can choose in place of the second language. As a result, it is pragmatically impossible to complete the desired National Occupational Standards (NOS)[3] requirement of 150 hours for skills training. In addition, the lack of proper infrastructure in schools, and the unavailability of quality trainers, further adds to the problem.

Our experience at Salaam Bombay Foundation give us reason to believe that the vocations/skills taught at the school level should be packaged as a hobby and not a serious trade, thereby making the learning joyful and interesting.

By working with BMC and government-aided schools the skills@school programme aims to prevent students from dropping out, especially in the 10–14 years age group.

SBF's Model of Integrating skills@school

By working with BMC and government-aided schools in its skills@school programme, SBF aims to prevent students from dropping out, especially in the 10–14 years age group. The programme was introduced in 2013 with the objective of providing effective skills training and market orientation to 8th and 9th standard students of BMC and government-aided schools. The reasoning was that it would enable them to consider progressive career paths and complete their education. So far, the skills@school programme has trained more than 3,500 students (See Annexure 1 for a detailed break-up of outreach) since its inception in 2013 in about fifteen trades (See Annexure 2 for the description of the trades).

skills@school sessions are organised within school premises (two hours per session, between three to five days a week). Courses take 80–100 hours, depending on the trade. To ensure that the sessions don't interfere with the school's academic calendar, they are scheduled before or after school hours.

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1 The National Skill Development Corporation India (NSDC) was setup as a Public Private Partnership Company with the primary mandate of catalysing the skills landscape in India (Ministry of Skill Development and Entrepreneurship , 2017). National Skill Development Corporation India (NSDC) was established in 2009, as a not- for- profit company set up by the Ministry of Finance, NSDC aims to promote skill development by catalysing creation of large, quality and for-profit vocational institutions.

2 The scheme was then renamed as "Vocationalisation of Secondary and Higher Secondary Education" when it was incorporated within the RMSA.

3 National Occupational Standards (NOSs) specify the standard of performance, knowledge, and understanding required, when carrying out a particular activity in the workplace. A set of NOSs, aligned to a job role, called Qualification Packs (QPs), would be available for every job role in each industry. This drives both the creation of curriculum and design of assessments. These job roles would be designed for various proficiency levels and aligned to the NSQF (Ministry of Skill Development and Entrepreneurship , 2017).

The Operational Model

SBF's model uniquely integrates skills training into secondary education and helps school students better prepare for the future. The model leverages existing components from the skill development and education ecosystems to avoid re-inventing the wheel. It is designed in a way to keep it replicable, scalable, and cost-effective.

Replicability The model has been able to identify stakeholders' key needs in terms of skilling. Its replicability is ensured by using standardised programme components. At the most basic level, each training module is standardised, equipping students to perform the lowest job role for a skill mentioned in the National Skills Qualifications Framework (NSQF).[4] This ensures uniformity in training, irrespective of variations in the location of implementation. The next is the standardisation of the equipment used for each technical trade, leading to uniform module implementation across locations. The last is the standardisation of assessments and certification, which is executed by an accredited partner of NSDC. Standardisation throughout the varied layers of the programme ensures that there are no gaps in implementation caused by the different contexts in which the programme implemented.

So far, more than

3,500

students have been trained in the skills@school programme since its inception in 2013 in about 15 trades.

Scalability The programme should be "adaptable to all practices through systematic adoption" (Rust & Cooper, 2006). The programme has been expanded to cities like Pune and Kolkata, in addition to the large user base already in Mumbai. Much of this can be attributed to the programme being able to leverage existing infrastructure. Our technical training partners have a presence in every city the programme has been expanded to (or is planning to expand to), significantly reducing the time to scale. Moreover, the programme operates within established school infrastructure, ensuring that the time, cost, and effort required to create new training facilities is minimised. Additionally, the beneficiary group (adolescents) is similar across all geographical locations and, hence, do not require additional research to be understood, due to the similarity in demographics and socioeconomic realities. These three factors make the programme effective when expanded to similar institutions in various geo-spatial locations.

Cost Effectiveness A programme can be considered sustainable only if the costs associated with producing the best outcomes is low. The cost effectiveness of a programme depends primarily on two aspects: the beneficiary mobilisation cost and the capital expenditure required to set up technical labs to facilitate training. Since the captive audience for training is already available in schools, the costs associated with mobilising beneficiaries are minimised. Rather than setting up cost-heavy infrastructure at the school level, the model reduces the cost of procuring equipment by providing a portable training kit which can be moved from one school to another once the course is over. Despite being cost-effective, the model maintains a high quality of training and has been able to increase the value it offers students as well as their families (Thomas, Kern, Hughes, & Chen, 2016). As there are no logistical restrictions, SBF can operate the skills@school programme at a low cost.

SBF has also incorporated two other major components into this model to further enhance the skills of students and help their retention at the secondary school level. One, institutional training and field visits provide students the necessary exposure to

4 The National Skills Qualifications Framework (NSQF) is a competency-based framework that organises all qualifications according to a series of levels of knowledge, skills and aptitude. These levels, graded from one to ten, are defined in terms of learning outcomes which the learner must possess regardless of whether they are obtained through formal, non-formal or informal learning. NSQF in India was notified on 27th December 2013. Under NSQF, the learner can acquire the certification for competency needed at any level through formal, non-formal or informal learning. The NSQF can be seen as a quality assurance framework (Ministry of Skill Development and Entrepreneurship , 2017).

TABLE 1: **Findings of pilot study on skills@school programme**

Aspects		Percentage
Enrolled Students	Students aspiring to study	99%
	Students who are able to identify one clear professional path	86%
	Students who want to study after Class 10	99%
	Students who think they would be able to earn from the vocational/technical training they have received in the long-term	91%
Alumni	Alumni who are currently in school	82%
	Alumni who want to pursue higher studies	82%
	Alumni who are working full-time/part-time/studying and taking up opportunity-based work though the skills learnt at the academy	20.5%
	Alumni who value technical skills training received during the duration of training	71%

develop their aspirations and absorb field realities. Two, the programme imparts market-relevant skills like financial literacy, entrepreneurship, and conversational English, which will help students develop their careers in their chosen fields.

Thus, the above elements make the model unique. The design of the programme is dynamic in that it can be contextualised and replicated in any situation, without compromising on quality.

Impact of skills@school

The skills@school programme monitors the impact it has had on its current and former students. Alumni are tracked regularly to monitor their progress even after they graduate from schools and/or drop out. This enables the programme to trace the changes it has caused in the lives of presently-enrolled students and its alumni.

The findings of a pilot study (2017) by Sattva[5] in collaboration with SBF for studying the impact of the skills@school programme can be summarised as below. In total, 172 alumni and 87 enrolled students were surveyed.

The course motivates them to continue their education and discourages them from dropping out due to financial constraints.

The above table illustrates that students enrolled in the skills@school programme see value in their training, which enables them to make a clear decision about their career path. They see utility in the course vis-à-vis its relevance to real life, its efficacy in the long run as support to their career, and as a means to earn a livelihood. The course motivates them to continue their education and discourages them from dropping out due to financial constraints. Additionally, the above data also shows that students are able to visualise a progressive career path based on the training they have received.

5 Sattva works with corporations, funders and social organisations on programs. They are a consultancy firm which provides solutions to envision long lasting impact for their stakeholders.

Conclusion

The skills@school programme teaches school students to envision a future for themselves and cope with career demands. If their education is supported by various forms of skill training, they may continue studying and may be better equipped to handle unemployment and/or unemployability. A national policy modelled on the skills@school programme and integrated within the school curriculum could mitigate the vulnerability of young people to dropping out and unemployment, and will help ensure a higher return on investment on the state's investment in skill training.

Thus, strategies regarding skills training in schools need to be re-evaluated, where skills training should be integrated into the curriculum such that students not only benefit from the training, but also develop a positive outlook towards formal education and a career rather than having a narrow vision of a job as a means to an end.

If the students education is supported by various forms or skill training, they may continue studying and may be better equipped to handle unemployment and/or unemployability.

To incorporate students into the employment market by preparing them in terms of technical and ancillary skills, Skill India needs to establish effective structures and processes while recognising the realities within the education system and the labour market. We suggest that the skills@school programme is an effect prototype for the same.

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APPENDIX TABLE 1: **Enrolment for skills@school since inception**

Trade Wise Segregation	Female	Male	Total
Grand Total	**2090**	**1585**	**3675**

Trade Wise Segregation	Female	Male	Total
2014 – 2015	**159**	**132**	**291**
Beautician	128	2	130
Gift Wrapping	10	–	10
Home Appliance	1	55	56
Jewellery Making	7	3	10
Mobile Repair	5	52	57
Retail Management	8	20	28
2015 – 2016	**211**	**108**	**319**
Beautician	74	–	74
Computer Hardware	1	17	18
Home Appliance	–	26	26
Hospitality	9	18	27
Jewellery Making	60	7	67
Mobile Repair	–	35	35
Retail Management	8	5	13

Trade Wise Segregation	Female	Male	Total
Tailoring	59	–	59
2016 – 2017	**506**	**370**	**876**
Beautician	350	8	358
Cake Making	6	2	8
Computer Hardware	47	103	150
Home Appliance	–	54	54
Jewellery Making	18	5	23
Mobile Repair	6	148	154
Tailoring	15	–	15
Videogame Making	25	18	43
Web Design	39	32	71
2017 – 2018	**1214**	**975**	**2189**
Automobile Repair	–	118	118
Beautician	781	20	801
Computer Hardware	54	117	171
Conversation English	125	86	211
Fashion Design	29	–	29
Graphic Design	54	72	126
Home Appliance	32	62	94
Jewellery Making	33	5	38
Mobile Repair	84	452	536
Web Design	22	43	65

APPENDIX 2: **Trade wise description of SBF's skills@school**

Automobile Repair

This curriculum aims to train candidates to work as auto service technicians in the automotive sector and aims to build key competencies amongst the learners in automotive repairs.

Beautician

The curriculum prepares students to provide basic services in the beauty and wellness sector, like threading, manicures, pedicures, etc. The course also enables students to be entrepreneurs and sustain themselves by earning a livelihood.

Cake Making

In partnership with the Sun and Sand Hotel, this curriculum was designed to train students i n basic cake making, chocolate making, and the basics of baking.

Computer Hardware
Apart from preparing students to be hired by various software companies, hardware manufacturing companies, call centres, system design companies, telecom companies, hardware repair shops, and BPOs, this course is also designed to provide students an understanding of being self-employed, running a hardware assembling firm, running a consultancy, or teaching in technical educational institutions.

Conversation English
This course aims to improve the communication skills of students to improve their confidence and career prospects.

Fashion Design and Tailoring
Students are provided 60 hours of training on the basics of stitching and embroidery.

Gift Wrapping
The curriculum aims to introduce students to basic gift wrapping techniques like ribboning, card design, etc.

Graphic Design
The course introduces students to CorelDraw and Photoshop. They learn the basics of designing communication products and editing photographs. Students can be employed by various media houses and printing presses etc. after their training.

Home Appliance Repair
The curriculum aims train students in home appliance repair by teaching them how to install, diagnose, service, and repair of appliances such as refrigerators, air conditioners, and ovens. The course also covers ancillary skills such as billing clients, maintaining service records, collecting payments, recording parts used, and teaching clients how to use and maintain their appliances.

Hospitality
As a pilot module, the hospitality curriculum attempts to raise awareness about hospitality as a career post 12th standard for its enrolled students.

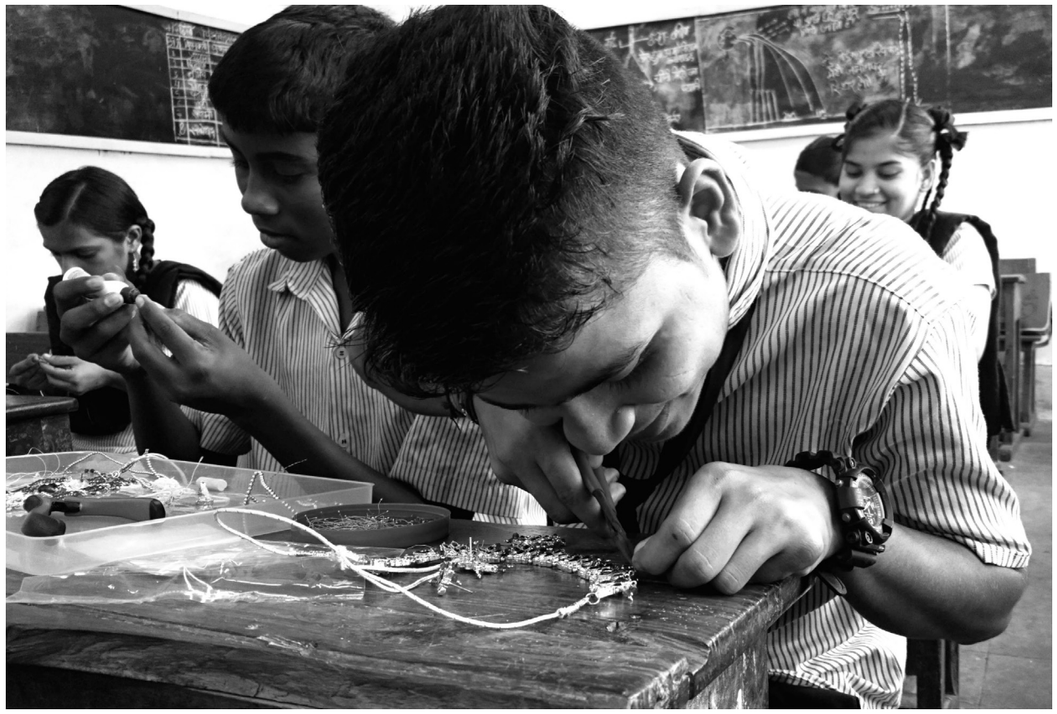
Jewellery Design
Through the jewellery design course, children are taught to decorate cutlery like mugs and serving spoons using copper and aluminium wires and beads.

Mobile Repair
It prepares students to work in the service centres of various mobile manufactures and private mobile repair shops. The students can also explore educational opportunities, besides teaching and research in new technologies.

Retail Management
The curriculum focuses on food and apparel retail within a shopping mall. This 60-hour course teaches skills like product display, stock management, customer relations, etc.

Videogame Making
The course aims to provide students with the opportunity to build their own video games and introduces them to various video game parlours in their city which they can access as a game developer and entrepreneur.

Web Design
It teaches students content creation and how to design web pages. Students can become freelancers or part-time employees in various companies and media houses after completing the training.



Life Skills Education: Integration in Secondary Schools in India

RAJASHREE KADAM & JEAN MIRANDA

Introduction

Education and schooling build abilities in young adults that help them make decisions and good choices. Apart from cognitive abilities, holistic development is also important, as it allows people to contribute meaningfully to the society they live in and succeed in life. To achieve success, meagre education and knowledge is not very useful. Individuals need to develop certain traits that are commonly known as life skills.

Defining Life Skills

Life skills are adaptive and constructive behaviour that enables one to deal with the problems of everyday life. There are innumerable skills that can be defined as life skills and they may vary across cultures and settings. However, various studies suggest that there is a core set of skills that are very important for the holistic development of an individual (World Health Organization, 1994).

The World Health Organization (1997) has defined life skills as "the abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life" (WHO, 1997). UNICEF (2002) defines life skills as "a behaviour change or behaviour development approach designed to address a balance of three areas: knowledge, attitude, and skills (Verma, 2014).

The WHO has defined life skills as "the abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life."

Globally, there are many other international agencies like WHO, which have consistently stressed the need for imparting life skills to adolescents. These skills are vital for adolescents, as they are at a crucial phase in their lives characterised by

Vocational education and life skills are very different from each other.

Vocational education prepares people for specific trades, crafts, and careers at various levels. Whereas, life skills nurtures the student's ability to adapt to new situations and surroundings and to continue with training and education.

rapid development. At this stage in life, adolescents are considered productive members of society. They undergo continuous physiological changes and psychological maturation.

Unlike vocational training, life skills training is not just technical or entrepreneurial in nature. In particular, it includes nurturing the student's ability to adapt to new situations and surroundings and to continue with training and education. Life skills are transferable and can be applied across industries and professions. Vocational education and life skills are very different from each other, even though the two terms are often confused. Vocational education can be defined as education that prepares students for future occupations and employment. Vocational education is also known as career and technical education (CTE) or technical and vocational education and training (TVET). It prepares people for specific trades, crafts, and careers at various levels. Vocational education consists of practical courses through which one gains skills and experiences directly related to a future career. It helps students develop skills, and in turn, offers better employment opportunities (Kaushik, 2014).

The Relevance of Life Skills Education

In today's world, adolescents are vulnerable for various reasons. They lack motivation and confidence; therefore, they tend to engage in antisocial activities. Adolescents go through a lot of stress, but they have immense potential and can contribute to society if given the required support.

During this stage, there is an urge to experiment as adolescents reach sexual maturity and progress towards their adult identities; there is also a shift from socioeconomic dependence to relative independence. It is crucial that at this point in their lives, these energies and strengths are optimally channelled towards a bright future, and that this transition from childhood to adulthood is smooth and effortless.

One's adolescent years are also a period of risk-taking, solving problems independently, making decisions on crucial issues, and coping with peer pressure and stress. It is essential to emphasise the physiological, emotional, and sociocultural needs and changes that adolescents experience. Moreover, the greater need is to provide them with skills, so that they can overcome challenges and various kinds of pressure (Khera and Khosla 2012).

It is undeniable that not many teenagers have access to resources or guidance to reach their full potential and, therefore, engage in activities that might hamper their growth as individuals and impact society as a whole. These high-risk behaviours affect not only the individuals, but the larger society they are a part of; therefore, effective and immediate programmes that would help them develop into better human beings are necessary.

Life skills education is an effective medium to increase awareness and an ideal way to provide guidance and direction. It is great approach to empower individuals, develop decision-making skills, and improve mental wellbeing and the ability to face hurdles in life. Individuals become more aware of their rights, develop self-esteem and self-confidence, take initiative, become responsible, develop relationships, and contribute positively to their own growth and to society (Dinesh and Belinda 2014).

Life Skills Crucial for Adolescents

Life skills include a spectrum of skills. The question now arises as to which life skills are important and need to be taught to students? The answer is not simple. While identifying important life skills, we need to understand that each individual has a unique upbringing. Some skills, such as decision-making, stress management, time management, communication, analytical thinking, and skills to resist pressure can be identified as basic life skills that help children cope with constantly emerging challenges.

Decision-making Skills

To begin, the skill of making independent decisions is important for students. This helps them become aware of the outcomes of their actions, and thus enables them to make informed decisions in the future. It is our duty to make sure that they have the systems in place along with the opportunity to make decisions.

Adolescents go through a lot of stress, but they have immense potential and can contribute to society if given the required support.

It is essential to emphasise the physiological, emotional, and sociocultural needs and changes that adolescents experience.

Stress Management Skills

Often, we do not realise that childhood is not always about having fun. A child may also feel worried and get stressed about small things, which adults fail to understand. Stress may come from various sources, including conflicts with others or within oneself. Sometimes, children may expect too much from themselves and worry about failing or underachieving. Therefore, it is important to impart positive coping skills at an early age to combat stress, especially for when they are transitioning to adulthood; stressors may not be evident to adults, but might be difficult for children to combat (Staff, 2016).

Time Management Skills

Understanding time helps children manage and utilise it well. To execute any kind of activity, it is essential to plan and prioritise. Developing a sense of time is a slow and gradual process. Helping children prioritise activities will aid them throughout their lives so that they complete the most important tasks daily and weekly, while setting up the foundation to complete long-term goals as well (Duncan, 2009).

Communication Skills

Communication is another important aspect that contributes to the holistic development of children, who need to understand others and be understood by those around them. It is fundamental to building relationships and is important during interaction, learning, and play. No matter the industry or career, good communication skills are desirable for nearly every job and will provide those with exemplary skills an advantage over other candidates. Like any other skill, communication skills can be refined with practice. By helping children develop good communication skills from when they are young, their parents and teachers equip them with the skills to build a successful future (Kumon 2016).

Analytical Skills

In today's world, children are exposed to various media that target them specifically. Most children are swayed by the messages they are exposed to and can get confused and overwhelmed. Children need to develop skills to analyse the messages they are exposed to in order to avoid negative repercussions. These skills are crucial today, especially with the growing rates of cybercrime against children, the availability of harmful products like *gutkha*, *pan masala*, *supari*, cigarettes and easy access to adult content. So, to safeguard children from bodily or psychological harm, it is essential to help them develop

analytical skills, which will allow them to be discerning of anything they are exposed to through any medium of communication.

Skills to Resist Social Pressure

As children grow, the expectations of those around them, and their own expectations, get higher. The pressure to perform well in school and among friends, relatives, and society starts to increase. They also develop new relationships, which can sometimes get complicated and negatively affect them. Selfish behaviour and temper tantrums that were once tolerated are now unacceptable. Many children struggle to cope with the pressure to act in acceptable ways. External pressure is now complemented by children's own internal feelings, as they cope with new sexual desires and interests that strongly motivate them to pursue relationships (and also cause stress). Various sources of social and internal pressure and demands on their time combine to make children's lives a potential emotional roller-coaster—there are many opportunities for extremely uplifting and exciting experiences, but also numerous difficult, upsetting, or confusing ones. Therefore, adolescence is the right time to introduce these skills, so that they can resist social pressures and develop into positive and healthy adults (Oswalt, 2010).

School is where children are taught to act with understanding. Thus, life skills education should be integrated into the regular school curriculum to enhance the mental health of students, equip them with skills to face challenges, and empower them to become fully functioning contributors in society.

Integration of Life Skills into Secondary Education

It is the need of the hour to integrate life skills into the secondary education curriculum. The education system in India has been continually changing and developing along with progress in science and technology. Emerging issues such as globalisation, privatisation, urbanisation, and industrialisation should also be a part of the curriculum. Students have to be prepared to face the effects of global warming, famine, poverty, suicide, and population explosion, in addition to social, emotional, physical, and psychological issues.

With development comes competition, unemployment, and a lack of job security—these are all concerns for many in today's world, especially in developing countries. We are all caught in a mad race. Everyone is so busy competing that they do not have the time for self-development and for contributing positively to society. These young minds are functioning ineffectively because apart from the aforementioned issues, social problems like alcoholism, drug abuse, sexual abuse, smoking, juvenile delinquency, and antisocial acts have a negative impact on adolescents and others around them.

Education is the key resource we have in confronting this challenging situation. Therefore, education is very important, but that the quality and approach of this system needs attention cannot be ignored. There must be a system that not only provides children with the requisite knowledge, but also allows them to develop skills that will help them contribute positively to themselves and to society. Thus, the fundamental focus of education should be developing such skills in students, as these skills are the foundation to creating dynamic citizens who can cope with future challenges and survive in the world.

School is where children are taught to act with understanding. In due course, schools mould students' attitudes, interests, and preferences and dislikes for objects, individuals, issues, and problems they might face in their lifetimes. Thus, the characteristics of children are moulded by the kind of curriculum prescribed and the way it is presented in schools. Needless to say, schools have to make a conscious effort to organise learning experiences such that children acquire a desirable balance of cognitive and non-cognitive characteristics.

An integrated approach infuses life skills across the curriculum or teaches specific skills and abilities in subjects such as science, civics, and physical education. This approach blends academic knowledge (e.g., geography) with life skills (e.g., problem-solving, negotiation, and advocacy), thereby allowing children to apply their knowledge and develop abilities. This approach is, of course, aligned with the aims of life skills education; however, curriculum design and delivery become challenging, especially in developing countries with limited resources and inadequately trained teachers and school leaders. After years of promoting the integration of social and emotional learning and soft skills into core subjects, UNICEF found that many teachers were still not following the suggestions in teacher-training manuals in classrooms, as they were too complex for the average teacher.

Life skills education bridges the gap between basic functioning and capabilities. It strengthens the ability of individuals to meet social demands. Thus, a relevant life skills education helps people deal with issues and put desired behaviour into practice (Prajapati, Sharma, and Sharma, 2017).

Imparting life skills education in classrooms has been researched meticulously—it generates positive outcomes when included in the curriculum (Yadav & Iqbal, 2009). It helps students interact with others and allows them to get to know one another, which enhances team building and team work. Educational games and stimulating exercises promote fun, active learning, and rich discussions, as participants work hard to earn points. These activities require the combined use of knowledge, attitudes, and skills and allow students to test their assumptions and abilities in a relatively safe environment. Case studies offer a chance to analyse situations, explore challenges and dilemmas, and safely test solutions. Students are given the opportunity to work together in groups and share ideas and new findings; this allows them to see things from new perspectives. Case studies are powerful catalysts for thought and discussion. By engaging in these activities, students improve their critical thinking and decision-making skills. It also gives them the chance to confront risks and challenges and find ways to cope with them.

Thus, life skills education should be integrated into the regular school curriculum and should be imparted on a daily basis by life skills trainers, teachers, and counsellors to enhance the mental health of students, equip them with skills to face challenges, and empower them to become fully functioning contributors in society (PrajapatI, Sharma, and Sharma 2017).

Organisations Making an Impact Through Life Skills Programmes

Over the years, there have been several organisations, both governmental and non-governmental, across the globe, that have realised the importance of imparting life skills to adolescents.

International

1 **WINGS for kids**

WINGS for kids is an after-school programme which teaches social and emotional skills to K–6 students in the US (Singh & Menon, 2015). The sessions are planed based on social and emotional learning (SEL) instruction, which includes 30 SEL skills, which are derived from five core competencies listed by Collaborative for Academic, Social and Emotional Learning (CASEL)—self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. The students are also linked to in-school and out-of-school learning programmes through collaborations with school principals and teachers. They also monitor and assess their students' growth through a sequence of behavioural assessment scales.

2 **Educate! Uganda**

Educate! is an organisation based in Uganda that works on building entrepreneurship abilities, critical thinking, team work, and citizenship in secondary school students, a year before they give their A-level examinations (Singh & Menon, 2015). The programme aims to provide the students with skills which are essential to make a livelihood. Youth entrepreneurs

or Educate! Mentors (many of whom are graduates of our program) are from the local community and facilitate workshops and share their practical experience running small businesses or community projects. The curriculum includes 80-minute lessons delivered over the course of 15 months. The impact is measured at the end of the training through a business competition at the end of the programme.

Character Lab

Founded by Angela Duckworth, Dominic Randolph and Dave Levin, Character Lab comprises a team of researchers, designers, and educators who work towards developing character development activities (teaching tools and practices) for teachers and schools through regular research (Singh & Menon, 2015). It aims towards systematically integrating the activities developed in the daily lesson plans and interactions of teachers with their students. Character Growth Card, is an interactive method which can help students reflect on their strengths and areas for growth. These methods help the teacher to have a formative, rather than a summative, conversation with students about areas they can concentrate on.

3 **UChicago 8/9 Teacher Network**

In 2015, a paper written by Professors Camille Farrington, Melissa Roderick, and several of their colleagues at the University's Consortium on Chicago School Research (CCSR) highlighted how non-cognitive factors like mind-set, perseverance, social skills, and learning strategies lead to improvements in the academic sphere (Singh & Menon, 2015). The 8/9 Teacher Network (89TN) was a consequential research/practice project that helped teachers apply the research synthesized in the paper to their teaching, thereby creating a replicable professional development model to help teachers guide students in becoming effective learners.

India

1 **Khel Planet, India**

Khel Planet is an out-of-school programme that contextualises games and activities to provide an experiential learning environment for children with focuses on life skills through play (Singh & Menon, 2015). It concentrates on six core life skills which include development of emotional intelligence, leadership, collaboration, creativity, cognition, and social and civic engagement. Workshops and products based on this model are being piloted in low-income private schools in Lucknow and Mumbai.

2 **Going to School**

Going to School (GTS) uses design-driven inspiring stories to develop entrepreneurial skills in children. GTS in partnership with the state government provides training to school teachers in delivering their content alongside the existing curriculum in Class 9 (Singh & Menon, 2015). A total 10 books are taught per year and children each have their own book. It's a weekly programme which runs on Saturdays, where teachers conduct a two-hour session during which they read one skill book and play a skills game. The children are instructed to create a skills action project in their community, based on the skills they learnt over the weekend and it is graded by the organisation and submitted back to the school. GTS uses an online monitoring system to track learning outcomes (Ibid).

3 **Dream a Dream**

Dream a Dream after School Life Skills Programme uses the medium of sports and arts to engage and develop critical life skills (Singh & Menon, 2015). Their programmes are designed in a way that the four systems—the child; the environment, which includes their closest influencers, parents and teachers; the ecosystem, which positively influences the child's life; and lastly. the community, which includes potential employers, administration, government, and policy-makers—are impacted, to create the best possible world for the young person. The approach has been adapted from the Creative Community Model developed by Partners for Youth Empowerment (PYE Global). The organisation ensures regular monitoring and that the learnings are documented and brought back to inform, impact, and transform their work with Teachers and Educators in the Teacher Development Programme thus providing a holistic methodology.

4 **Salaam Bombay Foundation**

Salaam Bombay Foundation (SBF) is a non-governmental organisation (NGO) based in Mumbai; its vision is to empower children to make the right choices for their health, education, and livelihoods, and to encourage them to commit to staying in school. To achieve this vision, SBF engages "at risk" children through in-school leadership programmes and after-school sports, arts, media, and vocational training activities. These programmes build their self-esteem and life skills, which gives these children the courage to face society and contribute positively.

The SBF programme's targets and objectives range from building awareness about the hazards of tobacco use among students in all participating schools, to developing life skills through a range of experiential platforms. These efforts are promoted through in-school programmes, focusing in the first year on awareness building (for students in Class 8), and in the second year on advocacy training (for students in Class 9). Additional after-school programmes offer "academies" that use the vehicles of sports, arts, and journalism to build confidence, peer relations, and refusal skills.

As per a study published in the Public Library of Science (PLOS) journal, the results of the SBF intervention demonstrate that the programme is successful in achieving a number of goals—reducing tobacco use, increasing awareness about tobacco and tobacco laws, and improving life skills. As noted in the description of the intervention, SBF aims to build life skills as a core strategy in tobacco use prevention. Indicators of life skills and self-efficacy were higher among students in SBF schools (Sorensen et al, 2012).

Life Skills Education Policies in India

The National Curriculum Framework (NCF), 2005, emphasises constructive learning experiences, development of an inquiry-based approach, work-related knowledge, and broader life skills. In 2005, the Central Board of Secondary Education (CBSE) introduced life skills education as an integral part of the curriculum through continuous and comprehensive evaluation (CCE) for Classes 6 through 10, and has developed life skills manuals for teachers of Classes 6, 7, and 8. These manuals provide teachers with broad guidelines for each of the 10 core life skills identified by WHO. Sarva Shiksha Abhiyan (SSA) also provides life skills training, in particular to upper primary girls. While there have been dispersed efforts to promote life skills, progress in terms of curriculum integration and teacher development remains poor. Most of these efforts take a general approach to life skills information delivery, and sometimes treat them more as moral/value education without any particular context.

To be effective, life skills ultimately need to be age-aligned and inculcated in schools that are inclusive, with trained and motivated teachers who can employ participatory and experiential teaching practices

There are certain difficulties associated with successfully integrating life skills into the Indian school education without a full systemic reform, including:

- Moving life skills from the margins (i.e., extra-curricular or passive value education) to the centre of schooling and creating multiple learning opportunities for reinforcement within schools.
- Introducing a learner-centric pedagogy, this is not solely reliant on rote learning or exam-based assessments.
- Building a school culture around life skills based education.
- Improving the capacity and motivation of teachers to develop and integrate life skills into their classroom practice (Singh and Sharma 2016).

Life skills education in schools clearly needs to occur in the context of broader education system reforms. To be effective, life skills ultimately need to be age-aligned and inculcated in schools that are inclusive, with trained and motivated teachers who can employ participatory and experiential teaching practices (Singh and Menon 2015).

TABLE 1: **Current status of life skills education in India**

Enabling Context/ System Alignment	Absent (No or Limited Progress)	Emerging (On the Way to Meeting the Minimum Standard)	Established (Acceptable Minimum Standard)	Advanced
Policies (System-level documents that provide guidelines for life skills education)		✓		
Curriculum (Curricular modules designed and developed for use by teachers, teacher educators, and students)		✓		
Learning/Quality Goals (Mechanisms in place to ensure the quality of life skills delivery)	✓			
Contextual Evidence Body (evidence based on the impact of life skills education interventions in the Indian context)	✓			
Funding (Allocated for life skills education)	✓			
Pre-service and In-service Teacher Training (Provision of preparatory and ongoing professional development for teachers to ensure that they develop skills and expertise in life skills education)	✓			

SOURCE Adapted from the World Bank's SABER and UNICEF

Role of NGOs

NGOs have developed innovative dissemination methods, relying on contact with groups or individuals. As life skills development intermediaries, they are good at reaching and mobilising people in remote communities. They empower people to take control of their lives, and they work with and strengthen local institutions. NGOs also carry out projects at lower costs and are more efficient than other agencies. The greatest strength of NGOs is that their programmes have been field tested and developed over a period of time, therefore, are sustainable.

NGOs can be instrumental in providing the requisite training to teachers who hold the primary responsibility of imparting knowledge and conducting activities. Training modules can be developed and shared with the government to further the programme.

Experience in several parts of India shows that NGOs focus on sector-specific issues such as livelihood, community organisation, community asset creation, and the formation of women's groups, and accelerate social and economic recovery after disasters. While the state follows a universal approach to supporting people in need, NGOs adopt a community-oriented approach and cater to the needs of vulnerable groups, who might otherwise find it hard to cope with the modern world (Ingle 2016).

Guideline for Partnerships Between the Public and Private Sectors

Both, NGOs and the Indian Government, have to realise the need for programmes that help individuals develop skills. For the smooth functioning of partnerships between the public and private sectors in the implementation of life skills programmes, both sectors must be open to changes and the exchange of ideas.

1 Governments and businesses should expand advocacy in developing and deploying solutions.
2 The government and NGOs should establish more common ground to use resources optimally.
3 Efforts must be made to share information and social auditing mechanisms must be established to increase transparency and accountability, which would raise the credibility of NGOs.
4 A holistic management information system (MIS) system database on organisational expertise, capacities, and resources should be prepared so that the government can identify NGOs that would build better partnerships and skills within the developmental work of the government.
5 Learning spaces should be created to enable the sharing of successes and challenges for wider dissemination among various stakeholders.
6 Alliances and networking between the public and private sectors should be strengthened in order to scale up initiatives sustainably across sectors.
7 A dynamic curriculum, which will enable the implementation of various life skills programmes throughout the country, with its varied contexts and realities, should be developed.

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Best Practices to Promote Safety in Schools

UPASANA SARAF

Introduction

Apart from home, children spend most of their time at school. Since they spend 30 hours of every week between the ages of three and sixteen years in school, their safety is largely considered the school's responsibility. The burgeoning demands of infrastructure, proliferation of schools, competition amongst various boards, presence of multiple authorities, and lack of trained school personnel has led to a situation where school personnel have very little time to attend to key areas of supervision and monitoring; thereby, schools are unable to deliver on the implicit promise of keeping children safe.

50% of abusers are persons known to the child or in a position of trust and responsibility.

A quick review of a few incidents of crimes against children in schools reveals an alarming picture.

Mumbai, 7 October 2017: Two minor boys of Class X were arrested for allegedly sexually assaulting and sodomising their classmate on the terrace of their school.

Gurugram, 8 September 2017: Seven-year-old Pradyuman was murdered in the bathroom of a reputable school. The case is yet unresolved.

Mumbai, 5 August 2017: A four-year-old girl was allegedly raped across four days by a peon inside the washroom of a renowned ICSE school in suburban Malad.

Bengaluru, 24 February 2017: Two toddlers were sexually assaulted by the live-in supervisor at a preschool in Marathahalli. The accused, Manjunath, turned out to be a serial predator who had sexually assaulted at least seven children in the last year.

Mumbai, 13 December 2016: A 13-year-old girl studying at a school in Navi Mumbai was allegedly raped twice by a teacher; the incident came to light only after the girl was found to be four weeks pregnant.

Delhi, 30 January 2016: A six-year-old was found dead upon drowning in the water tank of Ryan International School's Vasant Kunj branch.

These cases are merely representative of the metros; there is very little available data on smaller towns, so it is impossible to estimate the real depth of the problem. More alarming to note is the likelihood that cases have not been reported.

The number of boys and girls who reported abuse was not significantly different.

49.92%
of children in schools reported facing sexual abuse.

Two out of three children reported physical abuse, mostly by parents and teachers.

A significant pan-Indian study, the National Study on Child Abuse (2007), is the largest of its kind and covered 13 states with a sample size of 12,447 children, 2,324 young adults, and 2,449 stakeholders. It reported the following:

- 53.18% of children reported facing sexual abuse.
- 49.92% of children in schools reported facing sexual abuse.
- 61.61% of children at work (shops, factories, or other places) reported facing sexual abuse
- 54.51% of children on the streets reported facing sexual abuse.
- 47.08 % of children in institutional care reported facing sexual abuse.
- 20.90% of all children were subjected to severe forms of sexual abuse that included sexual assault, being made to fondle private parts, being made to exhibit private body parts, and being photographed in the nude.
- 50% of abusers are persons known to the child or in a position of trust and responsibility.
- The number of boys and girls who reported abuse was not significantly different.
- Two out of every three children reported physical abuse, mostly by parents and teachers.

The increase in the occurrence of child sexual abuse incidents can be attributed to various conditions and factors. Some of these are listed below:

1 **Authoritarian Cultural Beliefs** Our society holds deep-rooted beliefs about power, control, obedience, and punishment. Adults of the present generation have been brought up in an environment where conformity is expected at the expense of spontaneity; communicating values is considered more important than practising them; and a person's age is given more importance than the maturity of their actions.

2 **Children are Vulnerable in Terms of Strength and Power** Children's complete dependence on adults for resources compounds their inability to defend themselves. For those children who come from abusive households, the idea of abuse at the hands of any adult, including teachers, appears normal. Adults unable to manage children tend to use fear and coercion to demand compliance.

3 **Government Services Lack Credibility** Reports of atrocities against children in orphanages, remand homes, and detention centres cast doubt on the willingness of these agencies to offer any level of succour or protection to children under threat. The number of missing children in our country is testimony to the fact that tracking children or attempting to reduce crimes against them seems to have had little or no effect. Helplines offer some hope for children today, but there is a need for stronger advocacy to improve timely usage.

4 **Greater Exposure to Violence and Adult Media Content** As children have easy access to the internet, there is very little censorship of the content they watch. Parents struggle in vain to curtail screen time and access to gadgets. Having a cell phone offers as much safety as risk for misuse. Many seemingly innocent keywords lead to pornographic sites. In a world where adults are confused and money is a universal goal, children in their formative years are easily influenced and tend to engage in crimes. For example, cyber-bullying is an instance where children threaten, force, shame, or blackmail others, resulting in dire consequences.

5 **Social Media** Social media exchanges can lead children to dangerous situations as they lack the ability to distinguish between a friend and stranger. With the development of judgment and evaluation skills only in late adolescence, children who operate on social media platforms are extremely vulnerable to danger from strangers. There have been many reports of children being blackmailed by strangers whom they met on Facebook or eloping with strangers, only to be robbed and abused.

6 **Challenges in Parenting** Today, perhaps more than ever before, parenting is a huge challenge. Vacillating between being a firm parent and affable friend, parents struggle to find their feet in a society transformed by technology, and one that is vastly different from the world they grew up in. Everything they thought they knew now appears to be obsolete as children seem to equal them in knowledge. Such dramatic changes in society requires critical evaluation of old values and, perhaps, the introduction of new ones. As parents work hard to keep up with new information and earn money in an increasingly competitive world, their ability to supervise, guide, and thereby influence children has reduced.

Helping children learn how to be careful without developing distrust; encouraging them to report incidents without fear; and teaching them to judge situations critically without fear of censure are key challenges for adults that schools can help resolve.

The Role of Schools

Given these social conditions, schools have a dual role to play.

Their most important role is to educate—thus, they need to be at the forefront of information dissemination and skill-building. They should educate their staff and parent body on how to keep children safe, and should hold sessions for students on how to stay safe. Seminars, workshops, and discussions with mixed groups can be of great value in creating awareness and promoting advocacy. Life skills sessions in schools need to focus on capacity-building in areas such as self-awareness, reflection, critical thinking, decision-making, and problem-solving. Abuse, abduction, and accidents are three key risk areas for children, and it is imperative that the adults in the child's environment are conscious of threats and how they can safeguard the child. Listening; responding to reports of abuse; educating oneself about child protection laws and agencies; and being aware of the methods that abusers may use to engage the child will help adults observe risk signs, communicate with the child and authorities, reduce response time, and make decisions quickly. Helping children learn how to be careful without developing distrust; encouraging them to report incidents without fear; and teaching them to judge situations critically without fear of censure are key challenges for adults that schools can help resolve.

Another important task is for schools to ensure safety during all on-site and off-site activities.

On-site A few schools make use of GPS-enabled ID cards. Bangalore International School in Jayanagar monitors students' activities using a tracking system to ensure their safety during school hours. A number of schools have upgraded their security systems at the school gates. Poonam Arora, principal of Bombay Cambridge International School in Andheri, says, "We have issued a second ID-card for parents with their photo, to be used for picking up the child from school at any time. In the absence of the ID, the person may not be allowed to take the child." She adds, "At peak hours like break time, exit and entry times are closely supervised by teachers." Meenakshi Kilpady,

principal of Dr. S. Radhakrishnan International School, Malad, has trained her 250-strong staff in child abuse laws and has instituted a Child Protection Policy that has been operational since 2015. She says, "With the increasing number of incidents in society of crimes against children, I thought it was time we enrolled the staff in viewing child management as a serious priority. In fact, my student council drafted an anti-bullying policy for the entire student body of the school."

Monica Bhatia, principal, Veer Bhagat Singh International School, instituted a School Safety Committee in 2015 that has been working proactively for child safety at the systemic level. She holds regular third-party safety audits, maintains well-organised first-aid facilities, archives updated medical records of her students and staff, and offers open access to student counsellors.

While accidents can happen anywhere, it is important to ensure that no accident is caused by human negligence —be it on the part of parents, teachers, or students.

While schools are making active efforts to safeguard students, there are still many areas that require improvement. When teachers are permitted to tutor students privately, this may put teachers and students in a position where exploitation is possible.

Using social media to communicate with teachers requires professional maturity on the part of the teacher. Handling student indiscipline continues to be a challenge in most schools. The concept of punishment persists and often crosses all reasonable limits—for example, a Class I student in Jharkhand died five days after he was allegedly beaten by his school teacher in 2014. Reported by NDTV on 17 August 2014, a kindergarten teacher was arrested in Ghaziabad, near Delhi, for allegedly beating up a 6-year-old student with an iron ruler for not finishing his homework. Since then, there have been numerous reports in newspapers of inhuman punishments doled out by teachers to young students, some of whom have been in the news for committing suicide due to fear and/or humiliation. Behavioural correction must be approached objectively and not emotionally. As most well-meaning teachers will agree, "It is the behavior which is unacceptable, not the student."

Off-site Schools often take students off-site for events, field trips, camps, tours, picnics, and educational programmes, all of which are necessary for a well-rounded education. Students learn skills such as cohabitation, sharing, and social behaviour while engaging with events and places that have educational significance in a hands-on way. However, such trips can also mean increased risk. Manisha Arondekar, principal, Dr. S. Radhakrishnan International School, Borivali, says, "We have very clear rules and guidelines for staff who accompany students for off-site activities and events. I insist on a teacher-student ratio of 1:10 to ensure that very student is adequately supervised. We avoid locations that are potentially risky such as water-bodies or very crowded spots. Students are also taught to manage their own safety when off site." The off-site safety of students, and indeed all children, rests upon the social fabric and systemic infrastructure of society. The more automated the system, the higher the chances of predictability. Most countries have a code that requires school buses to be yellow. This is to enable easy spotting and helps in prioritising emergency services in times of crisis.

Giriraj Khandelwal, director, Bombay Cambridge Gurukul Schools, explains the responsibilities of the management with regard to student safety thus:

- Providing suitable infrastructure that is child-proof and safe.
- Providing suitable food and toilet facilities that are safe for children.
- Appointing staff after thorough background checks.
- Ensuring that no doors have locks except for those in the toilet (where the lock is only on the inside); ensuring that all rooms have glass panes in the door.
- Engaging the local community/parent-teacher association (PTA) in the functioning of the school to allow for the exchange of views and brainstorming for solutions to improve safety in the locality.
- Following all the safety guidelines issued by authorities in letter and spirit.
- Displaying emergency numbers at important locations in school.
- Implementing school policies that place the welfare of the child above all else.
- Building a good rapport with local authorities to ensure timely decision-making and allocation of resources in an emergency.

Role of Stakeholders

Parents In response to a public interest litigation (PIL) seeking a ban on the game Blue Whale, the chief justice said, "For everything, one cannot expect the court and government to take action and do something. Even the parents should check what their children are doing. Parents think their kids are in college, but they (kids) are, in fact, roaming elsewhere playing such games."

Parenting has never been as demanding as it is in today's society. However, a strong school–parent partnership can help reduce risk. Parents need to first seek a school they trust, and then demonstrate their trust through communication, coordination, and collaboration. They must:

- Consider the welfare of all the students in the school before demanding individual prerogatives for their child.
- Discuss all concerns about the child's behaviour and academics with the teacher or counsellor.
- Share important information with the child's teacher, viz., stressful home environment, medical issues, etc.
- Lay down safety rules for children regarding their internet usage, whereabouts, curfews, spending habits, and public behaviour.
- Provide a secure home environment where the child feels safe enough to disclose issues and seek help.

The above points notwithstanding, it is important that schools provide support to parents and help resolve difficulties. Although following the rules is important, there are times when humanity and compassion is needed, and schools should then be able to put aside rules for the benefit of the child.

Authorities The Government of Maharashtra has issued a number of notifications regarding safety in schools, some of which pertain to the following areas:

- No consumption of tobacco and cigarettes on school premises.
- Female staff to be appointed to monitor students on the school bus, which should be equipped with CCTV cameras, an escape door, and window grilles.
- Police verification of staff prior to appointment.
- CCTV cameras on school premises.
- Construction of a school compound wall.
- Provision of toilets for students.
- No corporal punishment.
- Mandatory reporting of sexual abuse.

All of the above notifications need to be followed in letter and spirit. The efficacy of these measures remains dependent on their implementation. For instance, a CCTV camera is really only useful in retrospect, when seeking information of what may have transpired. By itself, it can only act as a deterrent to potential offenders. Cases of sexual assault and abuse by school vehicle staff have prompted schools to improve security in buses by hiring female attendants and installing CCTV cameras. They have also forced school bus operators to conduct thorough background checks before hiring staff and insist on the proper use of identity cards. However, fresh cases of sexual assault and abuse continue to be reported.

While the school head is largely held responsible, there is no mechanism by which she can stop an illegal van from transporting her students or deter a cigarette vendor from operating within a kilometre's radius of her school. By placing the onus on the principal—especially with regard to matters that are outside her jurisdiction—the government does absolve itself of some of its own responsibilities towards student safety. Ameeta Mulla Wattal, principal of Springdales School, New Delhi, explains how

circumstances have forced parents and teachers to turn vigilantes. "I don't want to be an alarmist, but we do have unsavoury elements in our society. Schools can hike their security, but they can't be responsible for children's safety once they leave the campus. So, the onus of ensuring that the children reach home safe should be on parents, NGOs, and law enforcement agencies," she added.

On 20 September 2017, the Mumbai Mirror carried a report with the headline, "Police officers to attend PTA meetings". All 93 police stations have been asked to designate two officers to each school in their jurisdiction. This is in relation to new safety guidelines issued by the state government that mandate the use of strict identity verification benchmarks for employees who are not on the regular payroll and suggest the use of electronic surveillance in the school premises. Police verification, however, does not check the antecedents of a person who is from outside the state.

In a significant order, the State Consumer Disputes Redressal Commission held a Mumbai school responsible for failing to prevent an incident of assault that escalated from a spat between two Class IX students during school hours. The school was ordered to pay ₹2.3 lakhs to the father of the boy who broke the other's arm in the incident.

Mandatory reporting of child sexual abuse as part of the Protection of Children from Sexual Offences Act (POCSO), 2012, in contrast, has helped ensure that every citizen takes responsibility for the well-being of children. The school head should act as a consultant to local government agencies working on improving security in and around the school. More importantly, the accountability of government agencies becomes suspect if, in spite of following their directives, a child is hurt or in danger. The government's measures, therefore, need to be anticipatory and applied in schools in partnership with school heads and parents. Authorities must design directives that focus on student safety; schools must have a safety policy; the minimum qualification for teachers should be a graduate degree if they are to have the thinking and knowledge to manage unexpected student crises; and the role of parents must be delineated from school affairs to student welfare activities. The PTA should be involved in helping the school manage student exit and entry at peak times, traffic control at school gates, accompanying students on off-site activities, and flagging inappropriate staff behaviour.

The following are suggestions for further support that government agencies can provide schools:

- Local police stations could maintain positive relations with school heads. In case of an emergency, a quick response team should be available, and the police should provide instructions to principals in times of natural disasters or manmade crises.
- Doctors in hospitals and nursing homes near schools could provide emergency on-site interventions for school students if requested by the head, since in some crisis situations, moving the student could prove fatal.
- Special emergency numbers should be provided to schools in case of student emergency.
- All illegal student transport systems should be strictly brought to task. It is worth mentioning that most reported cases of child abuse have involved non-school managed transport staff.
- The Regional Transport Office (RTO) could be called upon to manage crowds outside schools; at peak times, it is difficult to screen visitors in schools.
- All illegal hawkers outside schools must be removed.
- School heads must be assured protection from the pressure of local political parties.
- School safety should be the responsibility of those present in the school, and not off-site authorities, failing which even the local educational authorities under whom the management functions would need to be taken to task.
- Reports on missing children must be attended to right away, rather than waiting for 24 hours; the first 24 hours are crucial to locating the abductor.

The guidelines issued by the Gurugram Police subsequent to the death of the child at Ryan International School are extremely comprehensive, and it is a recommended document for schools to follow.

Conclusion

The immediate reaction that instances of crime at school evokes is blame. Schools, government officials, parents, and members of the local community need to come together and take charge of potential threats in and around schools. The approach should be consultative and include discussions; responsibilities should be clearly assigned, and thus accountability and a balanced perspective regarding the role of parent and teacher established. Children today are bright, inquisitive, and tech-savvy; but, at the same time, they are isolated, insecure, and vulnerable. No matter how much they know, it is important to acknowledge that their brains are still in the formative stages, their cognitive abilities are limited, and their emotions unregulated. While accidents can happen anywhere, it is important to ensure that no accident is caused by human negligence—be it on the part of parents, teachers, or students.

As rightly stated by Mr. Vishnu Karthik, associate director, the Heritage group of schools, "No school, like anything else in life, can guarantee absolute safety. While the school may do everything in letter and spirit to substantially decrease the probability of an accident, it may not be able to totally eliminate the possibility of an accident. Safety is everybody's business—not just the school's or the government's. Parents should not delude themselves by abdicating or outsourcing their child's safety to the school."

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Inclusive Education

Adolescent Health Education in India: Current Status and Opportunity for the Private Sector

TSHERING BHUTIA & DR ABHIRAM MEHENDALE

Introduction

With a global population of around 1.2 billion, adolescents make up 18% of the world's population today (UNICEF, 2012). More than 50% of adolescents live in the Southeast Asia Region. In absolute numbers, India (243 million) is home to the highest number of adolescents, who make up 21% of its current population. These adolescents will become part of the workforce in the next five to ten years and have the potential to reshape the social structure, economic productivity, and overall well-being of the country, giving India a potentially massive demographic dividend over the next few decades. Hence, investing in adolescent health is of utmost importance for India.

As part of the transition from childhood to adulthood, adolescents undergo a number of physical, physiological, and psychological changes. Various factors, including a lack of awareness about bodily changes, increased stress and anxiety, and exposure to unsafe environments and addictive substances through peers, parents, communities, and media place adolescents at risk of developing behaviours and practices that could cause health problems later in adulthood.

Adolescents across the globe face common health issues with some regional variations. A review of literature on adolescent health in India showed that reproductive and sexual health issues, mental health disorders like depression, substance abuse in the form of tobacco, alcohol, and narcotic drugs addiction, undernutrition, anaemia, and overweight and obesity are the common health issues faced by Indian adolescents. The most common reproductive and sexual health issues among Indian adolescents include early pregnancies, HIV/AIDS, and other sexually transmitted diseases and infections (STDs and STIs). The National Family Health Survey 4 (NFHS-4) conducted in 2015–16 showed that 7.9% of adolescent girls in India were either married or already pregnant at the time of the survey. The practice of getting children married early, a lack of awareness of contraceptives, and the taboos

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associated with it are the major reasons for adolescent pregnancies. The NFHS-4 data also showed that 26.8% of women in India married before the age of 18 years, and 20.3% of men married before the age of 21 years, which are the legal ages for marriage for women and men in India respectively. A lack of awareness about the transmission of HIV/AIDS and other STIs and STDs, and a lack of knowledge and misconceptions about genitals, menstruation, and hygiene, are the other causes for reproductive and sexual health problems among Indian adolescents.

Conflictive social interactions, performance-related stress and anxiety, discrimination, isolation, broken families, and family fights are some of the most common reasons for mental health issues among adolescents in India. The National Mental Health Survey of India (2015–16) showed that the prevalence of mental disorders in the 13–17 years age group was 7.3% with equal distribution across both genders. The most prevalent mental health illnesses among children and adolescents are depressive episode and recurrent depressive disorder (2.6%), agoraphobia (2.3%), intellectual disability (1.7%), autism spectrum disorder (1.6%), phobic anxiety disorder (1.3%), and psychotic disorder (1.3%).

Substance abuse is yet another serious but neglected issue among adolescents in India. In a cross-sectional survey conducted among 4,024 children and adolescents (5–18 years) across India, most children reported a lifetime use of various substances. Tobacco (83.2%) and alcohol (67.7%) were the most common substances used followed by cannabis (35.4%), inhalants (34.7%), pharmaceutical opioids (18.1%), sedatives (7.9%), and heroin/smack (7.9%). The use of injectable substances was also reported by a significant proportion (12.6%) (NCPCR, 2013).

The most common reasons for substance abuse in adolescents are family factors, viz. substance abuse by parents and other adults in the family, parents' lack of awareness of the ill effects of substance abuse, conflicts in families, and a history of verbal/physical abuse. The other major factors that explain substance abuse include peer influence or peer pressure and the availability of addictive substances (NCPCR, 2013).

Adolescence is also a period where the body needs high quality nutrition. Adolescents require more calories, proteins, and micro-nutrients (vitamins and minerals) than children to meet the demands of the rapidly growing body. Studies on the status of nutrition in adolescents show the high prevalence of undernutrition in terms of protein-energy malnutrition and micronutrient deficiencies as well as overweight and obesity among Indian adolescents (e.g., Dwivedi et al, 2012).

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Dwivedi SN et al (2012) conducted a cross-sectional study on the prevalence of malnutrition and the implications associated with it among 1,000 randomly selected urban slum children from Bhopal, India. The prevalence of malnutrition among girls and boys was found to be 65% and 61.9% respectively. A total of 63.4% of the children surveyed had protein-energy malnutrition, 23.4% had a vitamin A deficiency, 16.2% had a vitamin B complex deficiency, and 7.2% had anaemia. In another cross-sectional quantitative study conducted in Shimla district to determine the prevalence of the dual burden of malnutrition (underweight and overweight/obesity) among 720 adolescents aged 14–19 years, 33.0% adolescents were found to be undernourished, 7.1% were overweight, while 1.3% were obese (Gupta et al, 2014).

The above data shows the pressing need for adolescent health intervention. Health education in secondary schools can be an effective strategy to reach out to a large population of adolescents as schools provide the environment to impart healthy attitude and practices among adolescents.

The present paper has discussed the role of school-based health education, the current status of health education in India, the case study of the National Health Education Programme of Nigeria and scope and opportunities for private sector in designing and implementing a national-level school-based health education programme in India. The paper concludes with recommendations by the author to formulate National Level Health Education Programme and various governmental and non-governmental stakeholders to be involved in the formulation process.

Role of School-based Health Education

Health education imparts knowledge that can foster a positive attitude, which in turn can have a positive effect on the emotional, social, physical, and mental health of an individual. Introducing health education into the school curriculum is a cost-effective investment for any nation as it simultaneously improves its overall health and education. Also, promoting and establishing healthy behaviours in young people is more effective, and often easier, than changing unhealthy behaviours already established in adult populations.

Literature from across the world on the impact of health education in secondary schools also shows that school-based health education programmes have a positive impact on the knowledge, attitudes, perceptions, practices, and behaviours of adolescents. An exploratory study conducted in Buraidah City, Saudi Arabia, to assess awareness of AIDS among secondary school students, and to measure the effect of a health education programme on this knowledge, showed that the programme significantly improved their scores in general knowledge on AIDS and views on its transmission and misperception (Saleh et al, 1999). In another interventional study conducted in Jos, Nigeria, to determine secondary school students' knowledge of HIV/AIDS, their attitudes towards people living with HIV/AIDS, and the impact of health education on the same, a statistically marked improvement was seen in the knowledge and attitudes of students in the experimental group (Umeh et al, 2008).

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A similar study conducted to assess the impact of health education on menstrual hygiene among female college students in Belgaum, India, showed that in the pre-test, only 75 girls (24.8% of those studied) reported that they washed their genitalia on every visit to the toilet, whereas in the post-test, a significant improvement was observed in their menstrual practice ($p<0.001$). Similarly, the practice of bathing during menstruation increased from 39.6% in the pre-test to 99.0% in the post-test (Pokhrel et al, 2014).

The findings of the above studies show how health education programmes delivered in school improve adolescents' knowledge of their health and help them reduce risky or unhealthy behaviours. Since children and adolescents spend most of their day at

school, health education programmes conducted in school present a convenient way to reach out to the maximum number of adolescents. Moreover, the institutional setup of a school makes this education more effective.

Adolescent Health Education in India: Current Status and Scope for Private Sector

In India, various components of adolescent health and welfare are looked after by a number of ministries. The Ministry of Health and Family Welfare (MoHFW) focuses on the delivery of health services. The Adolescent Education Programme (AEP) and sex education are implemented by the Department of Education under the Ministry of Human Resource Development (MHRD). Kishori Shakti Yojana, a programme for ensuring adequate nutrition for adolescent girls, and part of the Integrated Child Development Scheme (ICDS), is run by the Ministry of Women and Child Development (MWCD). The National Youth Programme (2003) of the Ministry of Youth Affairs and Sports (MYAS) covers Adolescent Sexual and Reproductive Health (ARSH) and provides life skills training among adolescents aged 15–19 years. Thus, with each ministry looking after a separate component of adolescent health, a comprehensive adolescent health programme is yet to emerge (Gupta et al, 2012). In addition, most existing adolescent health programmes in India are focussed on the provision of healthcare services, nutritional supplements, or health centre-based counselling services; only the School Health Programme and the Adolescent Education Programme have a school-based health education component.

School Health Programme

The School Health Programme, which falls under the umbrella of the National Health Mission, is a health check-up programme implemented by state health departments. Its main components are screening, health-care and referral, immunisation, micronutrient management, deworming, establishing health-promoting schools, capacity-building among teachers and concerned healthcare personnel, monitoring and evaluation, and the mid-day meal scheme. The component of 'health-promoting schools' involves providing counselling services for mental health and adolescent health education, creating peer leaders for health education, encouraging yoga and physical education, forming health clubs and health cabinets, etc. State health departments are, however, allowed to customise strategies for programme delivery (Guidelines on School Health Programme), leaving the School Health Programme to concentrate more on the provision of health services. Though adolescent health education is listed as one of the topics covered by health-promoting schools, there is no uniformity in the curriculum, and state health ministries are allowed to develop their own guidelines and monitoring mechanisms to implement various components of the programme.

The prevalence of malnutrition among 1,000 randomly selected urban slum children from Bhopal, India was found to be

65% in girls and **62%** in boys

Adolescent Education Programme

In 2005, the Ministry of Human Resource Development created the Adolescent Education Programme with support from the United Nations Population Fund (UNFPA). It is implemented by six national agencies, viz. the National Council of Educational Research and Training (NCERT), Council of Boards of School Education (COBSE), National Institute of Open Schooling (NIOS), Central Board of Secondary Education (CBSE), Kendriya Vidyalaya Sangathan (KVS), and Navodaya Vidyalaya Samiti (NVS). The introduction of the AEP was India's first step towards a national-level education programme which aimed to empower young people with accurate, age-appropriate, and culturally relevant information; promote healthy attitudes; and develop skills to enable them to respond to real-life situations in positive and responsible ways.

In 2010, NCERT published AEP's resource and training material for facilitators and peer educators. The training material covers the process of growing up in adolescents, shedding light on important health-related topics like nutritional needs and adolescent pregnancies and social issues like domestic violence and sexual abuse.

India, faced with the dual burden of undernutrition and overweight and obesity, is experiencing a rise in the prevalence of non-communicable diseases among adolescents. To counter this, the AEP should have an exclusive section on nutrition and healthy dietary habits to create awareness on the ill-effects of junk food and the long-term benefits of a healthy diet. The physical activity is also emerging as a major causative factor for non-communicable diseases among Indian adolescents (Swaminathan et al, 2011). Hence, information on age-appropriate physical activity could also be included in the programme along with the information on diet and nutrition.

The AEP provides comprehensive information on HIV/AIDS and substance abuse. Available literature also shows the rising prevalence of mental illnesses among Indian adolescents, but the AEP's training material does not contain a section exclusive to mental health issues or illnesses and ways to cope with them. In short, the introduction of the AEP by the MHRD at the school level is a welcome step, but the existing training material needs to be reworked to provide holistic coverage of all adolescent health issues within one school-based programme. Alternatively, the government could formulate an exclusive adolescent health education programme at the national level to reduce risky behaviours and practices among adolescents.

Nigeria has set a good example for resource-poor and developing countries by introducing skill-based health education in schools in its national-level health education programme in 2006.

Skill-based Health Education in Nigeria

In 2006, the Federal Ministries of Health and Education of Nigeria, in collaboration with the World Health Organization, introduced skill-based health education as one of the components of Nigeria's National School Health Programme.

The objectives of this skill-based health education programme are to provide information on key health issues affecting the school community; develop skill-based health education curricula for the training of teachers and learners; provide participatory learning experiences for the development of knowledge, attitudes, skills, and desirable habits in relation to personal and community health; and evaluate learners' progress towards healthy development (Ekenedo and Ekechukwu, 2015).

To counter the rise of non-communicable diseases, the AEP should create awareness on nutrition, healthy diet and physical activity.

The skill-based health education curriculum covers broad health topics, viz. personal health, diseases including HIV/AIDS, mental and social health, first aid and safety education, community health, family life education, environmental health, maternal and child health, nutrition, consumer health, drug education, ageing and death (bereavement) education, parts of the human body, and health agencies. It aims to provide basic information about health issues to learners as well as to help them develop life skills which influence the development of desirable healthy habits and discourage unhealthy practices. It also increases awareness of environmental threats to health, generates a feeling of responsibility for health and the environment, and improves the health of students (WHO, 2012). It informs students how to avoid health risks; creates an environment that is conducive to healthy living; and develops life skills, including value-based communication skills such as assertiveness, self-esteem, value clarification, and negotiation skills. Life skills provide children with the capacity to develop adaptive and positive behaviours that enable them to deal effectively with the demands and challenges of

everyday life. They enable them to resist peer pressure in various aspects of their lives, especially pertaining to substance abuse, sex, and other life choices (ibid).

The Indian government can design a similar, national-level school-based health education programme specific to the needs of its adolescent population in terms of its physical and mental health and life skills.

Role of the Non-Profit Sector in India in the Formulation of a National-Level Adolescent Health Education Programme

The Ministry of Health and Family Welfare, Ministry of Human Resource Development, and the Ministry of Women and Child Development are integral governmental stakeholders in the health and welfare of school-going adolescents. These ministries, along with the concerned departments of other ministries associated with the health and welfare of adolescents (e.g., the Ministry of Sports and Youth Affairs, the Ministry of Consumer Affairs, Food and Public Distribution, the Ministry of Law and Justice) could also be involved in the development of the programme.

Along with government ministries and departments, a vibrant non-profit sector can extend the reach of the government in certain fields and propose alternative models of development (Renjini and Mary, 2014). Currently, in India, NGOs are involved in the implementation of various government programmes. The private sector helps in service provision (e.g., self-help groups/ NGOs provide cooked food to children under the mid-day meal scheme), capacity-building (training of health educators), and technical support (development of curriculum and information, education and communication (IEC) material, and monitoring and evaluating overall programme activities, etc.). The government can utilise the expertise of NGOs and the private sector in the development of a national-level adolescent health education programme. A consortium of NGOs working on different adolescent health issues or associated risk factors could be formed to support the government in the formulation of a national-level school-based adolescent health education programme.

Recommendations

The first step in developing a national-level adolescent health education programme would be to finalise the aims and objectives of the programme, determine the components of adolescent health to be covered by the programme, and define the roles and responsibilities to be taken up by each stakeholder, including government ministries and private sector stakeholders, viz., NGOs, self-help groups, for-profit firms, etc.

The aim is to develop and implement a comprehensive national-level adolescent health education programme by creating a curriculum specific to adolescent health.

Objectives of the Programme:

1 To educate adolescents about risky behaviours and practices and promote preventive behaviours among adolescents in secondary schools
2 To create awareness among adolescents on the ill-effects of some habits, cultural practices, and traditions on health
3 To develop life skills among adolescents in order for them to abstain from risky behaviours and practices

Recommended Roles and Responsibilities of Government Stakeholders:

1 Appoint a national-level panel for finalising a health education curriculum specific to Indian adolescents
2 Appoint a panel of experts in the fields of secondary education, the health sector, public health, and child rights to develop guidelines for health educators and school authorities
3 Form a consortium of central and state education boards for monitoring health education programmes at the school level

Recommended Roles and Responsibilities of Private Sector Stakeholders:

1 Provide assistance to education boards in creating standard-wise health education curricula
2 Provide adolescent health education guidelines for health educators
3 Provide assistance to develop training modules for health educators, perhaps through the creation of a committee of NGOs working on specific adolescent health issues
4 Design information, education, and communication (IEC) material required for training
5 Develop monitoring and evaluation tools and reporting formats for the processes involved.

Conclusion

Improving adolescent health status is of prime importance for a country like India that has a huge demographic dividend in the form of its adolescent population. A nationwide skills-based health education programme at schools would be the most cost-effective way to reach out to the adolescent population. India also has a huge network of private sector organisation intervening in adolescent health issues at school and the community level. The multi-stakeholder engagement including these organisations will help government to design and implement health education programme more effectively and efficiently.

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Children with Special Needs and Inclusive Education

SHAMIN MEHROTRA & JEHANZEB BALDIWALA

Abstract

There is a large body of research in low and middle-income countries which demonstrates that investing in the development of children early, including children with disabilities, is a win-win situation. Children and families reach their best potential, and the community benefits as a whole economically (Gertler and Heckman, 2014).

About 15% of children in the world have disabilities as per the World Health Organization (*World Health Survey* 2004) and a Lancet series on ECD (*Lancet* 2007; 2011). While our official statistics suggest that prevalence of disability in India is 2.2% (Census 2011), it is a well-known fact that variances occur depending on how it is measured. More recent reports looking specifically at childhood disability in India suggest a prevalence of at least 12% in children under 15 years (Girmaji and Srinath 2006).

In the context of education, children with special needs experience barriers to learning due to the social, emotional, and academic problems they face.

While a policy framework for children with disabilities exists in India, it is far from exhaustive, and there is little ability to monitor how these policies are implemented (World Bank Report, 2007).

This article addresses the importance of inclusion of children with special needs within mainstream schools and looks at some of the gaps between existing policies and the implementation of these policies and the need to address this gap in services for children with disabilities and their families within the Indian context.

Introduction

Picture this… A young child on the autism spectrum is enrolled in a regular school. There are 50 children in the classroom and the noise level during the unstructured portion of class-time (break time,

practice for school events, music and sports class, extra-curricular activities like art class) is challenging for him. He seeks a quieter environment and a more predictable routine. Unable to express his wants but trying to communicate them, he approaches the other children and pushes them apart. He then runs to the teacher and starts to poke and prod her, hoping she will intervene and support him. Instead, he is made to stand facing the corner. He is later taken to the principal's office and is scolded for not owning up and apologising. He experiences confusion about what happened, but knows he is a bad boy and that no one will play with him today. He feels sad and unhappy.

The Need for Inclusion in the Context of Children with Special Needs

In the context of education, Children With Special Needs (CWSN), which include mental health concerns, experience barriers to learning due to the social, emotional, and academic problems they face.

Once children enter the school system—whether public or private—schools as well as families need ongoing support to manage a variety of issues. Some of the issues children and their families face daily include coping with academic demands, handling intolerance toward differences and disabilities, and managing peer relationships, mental health concerns, and bullying. This is especially true for children with varied learning and emotional needs.

One study on private schools in Mumbai by researchers from London School of Economics and Tata Institute of Social Sciences showed that children in so-called inclusive schools often experienced bullying and exclusion by peers and teachers (Das and Kattumuri, 2011).

Inclusion refers to efforts made to integrate children with special needs into mainstream schools. However, inclusion can succeed only if the benefits of schooling reach all children in any school system. In this context, anything that stands in the way of children being able to learn and participate on an equal basis with their peers constitutes a barrier to education. Inclusive education is an approach that aims to address these barriers and provide resources to support learning and participation, as well as to respond to the diverse needs of every child.

More often than not, inclusion is interpreted only as academic inclusion, i.e., helping children with special needs learn in the classroom. What often goes unnoticed are the social difficulties that children with disabilities face in school, including behavioural challenges, mental health concerns, and rejection by peers.

Inclusion is both a process—and an outcome—of achieving social justice and equity in society by understanding, accepting, and valuing differences among today's school children and youth (SSA 2011). It is more significant than the mere enrolment of children with special needs and mental health concerns in regular classrooms, and it acknowledges that a child's academic potential cannot be developed separately from her/his social, emotional, and physical potential, as these are interdependent aspects of a child's development.

Teachers who teach in inclusive classrooms tend to be more reflective, better problem-solvers, and more innovative overall.

Although inclusive education has gained momentum in India in recent years with new policies at the government level (such as The Persons with Disability [Equal Opportunities, Protection of Rights and Full Participation] Act, 1995, The Right of Children to Free and Compulsory Education Act, 2010), significant gaps still exist between these policies and their implementation at the school level. Efforts towards ensuring inclusive education in India are currently considered part of broader reforms to overhaul education. However, recent studies on the implementation and impact of the above mentioned inclusive education policies in India indicate that there still remains a lot to be done. In her recent paper on "Education of children with disabilities in India and Pakistan: An analysis of developments since 2000" (2015), Nidhi Singal has compiled research insights from several schools and classrooms since 2000. The main themes emerging from an analysis of this literature were: 1. Continued lack of basic facilities in schools; 2. Lack of teacher expertise and confidence in meeting the needs of children with disabilities; 3. Poor learning outcomes.

While there seems to be an undisputed consensus in the field about the need to build an inclusive system, commentators have pointed out some challenges in accomplishing this. Tulli (2002) has focused on issues such as social attitudes towards disability, lack of awareness, the scarcity of trained teachers, absence of a barrier-free environment, and lack of proper learning materials. Others, like Chadha (2000: 10), have talked about obvious impediments to progress, such as discriminatory attitudes, dearth of sufficient financial, technical, and human resources, a continued lack of community awareness, and limited parental motivation.

What We Know: The Data Speaks

There is sufficient data to suggest that when children with disabilities (CWDs) are included in the school system, it benefits not only them, but other students as well. There are other arguments for an inclusive schooling system—economically, it makes sense to invest in a single school system rather than in a costly parallel special school system (Singhal, 2005). Many have pointed out that teachers who teach in inclusive classrooms tend to be more reflective, better problem-solvers, and more innovative overall (Mani, 1994; Ahuja, 1996; Singhal, 2005).

The 15 million Children Gap

About 46 million children with disabilities between the ages of 6 and 15 years reside in India (according to the WHO/UNICEF prevalence estimate of 15%). A 2007 World Bank study on persons with disability in India stated that 38% of children with disabilities are out of school (The World Bank 2009) implying that 28.5 million or 62% of children with disabilities are in school. However, prevalence studies report that only 460,000 to 2.3 million (1% to 5%) of these children are in the regular school system (Sarva Siksha Abhiyan, 2011; Singhal, 2005). Given the small

15.7 million children within the regular school system are unrecognised and unsupported.

number of special schools in the country (2,500 as per Rehabilitation Council of India), the most likely explanation for the gap in accounting for children with disabilities is that there are a large number of children (15.7 million) within the regular school system who are unrecognised and unsupported. The fact that there are so many unrecognised children with disabilities in schools is not surprising because the statistics on CWD include two kinds of children—students with more visible but less prevalent disabilities (e.g., cerebral palsy, hearing impairment, visual impairment, intellectual disability, etc.), as well as students with less visible disabilities that may be milder but more prevalent (e.g., learning disability, ADHD, mild autism). The latter group of children particularly remain unrecognised within the school system.

India's total population as per recent Census data of 2011 is approximately 1.3 billion; of this total, children in the age group 6 to 13 years are estimated to account for approximately 195 million. However, as per a report released by UNICEF in January 2014, South Asia Regional Study for Out of School Children, approximately 11.9 million children in India are out of school, which is found to be higher than similar populations in Pakistan, Bangladesh, and Sri Lanka. The reasons for children dropping out of school or not making it to school at all vary, but causes are usually associated with the disadvantages children are born with—poverty, gender, ethnicity, or living conditions in rural areas or slums. Of these, one of the most neglected disadvantages is disability (UNESCO, 2013a). In 2007, India ratified the UN Convention on the Rights of Persons with Disabilities (UNCRPD), which resulted in a significant paradigm shift from charity and welfare for persons with disabilities, to enhancement of their rights and empowering them. The convention required India to make a number of changes to its laws, policies, regulations, notifications, programmes,

and schemes after consulting with persons with disabilities and related organisations on how best to fulfil the CRPD mandates. Article 24 of the UNCRPD talks extensively about the rights of children/persons with disabilities to access the same mainstream education that people without disabilities receive. India is now accountable in terms of international law, both to the UN and to its own citizens to publish national plans to implement its principles and articles.

Policies: While They Exist, There are Challenges

Possibly one of the most important legislations to date in India regarding people with disabilities is the People with Disabilities (PWD) (Equal Opportunities Protection of Rights and Full Participation) Act, 1995, which strives to address all major aspects of the education sector pertinent to students with disabilities. It states that children with disabilities have the right to access education in a "free and appropriate environment" until they are 18 years of age, thereby "promoting integration into normal schools".

The most recent and revolutionary change in the education system of India is the Right to Education (RTE) Bill. The Government of India decided to make an amendment to Article 21 of the Constitution, called Article 21A, giving all children between the ages of 6–14 years the right to a free, appropriate, and compulsory education. Sarva Shiksha Abhiyan (SSA), launched under RTE, aimed to achieve the goal of universalisation of elementary education (UEE) and adopts a zero-rejection policy. Three important aspect of UEE are: access, enrolment, and retention of all children between 6–14 years of age. The zero-rejection policy ensures that every child with special needs (CWSN), irrespective of the kind, category, and degree of disability, is provided meaningful and quality education.

While a policy framework for children with disabilities exists in India, it is far from exhaustive, and there are few mechanisms to monitor how these policies are being implemented (World Bank 2007). There are no mandated processes that identify children with disabilities early or provide early intervention for children with disabilities, either within the healthcare or educational systems. Children with disabilities and their families clearly fall between the cracks—they are most likely to receive poor healthcare, be out of school, and remain unaware of their rights (World Bank, 2007). For the estimated 50 million children in India in need of specialized services, the Rehabilitation Council of India (RCI), the official monitoring and regulatory body for disability-related services, has a total of 78,500 rehabilitation professionals registered under it. This means, at best, a ratio of one therapist to 600 children with disabilities. Realistically, a therapist cannot handle a load of more than 30 families at a time. Also, these professionals are usually clustered in urban areas while underserved areas, where the need is the most, do not have access to them.

There is a large body of research in low and middle-income countries that demonstrates that investing in the development of children early—including children with disabilities—results in a win-win situation. Children and families reach their best potential, and the community benefits as a whole economically (Gertler and Heckman 2014). In India, there is a clear gap between the need to access the untapped potential of young children (at risk of) with disabilities, and the investment in services that will achieve this. There is an urgent need for us to address this gap.

The Role of Private Sector Organisations

As care providers with a commitment to support children with disabilities to perform to the best of their potential, Ummeed Child Development Center cannot ignore the functioning of children in schools. The School Outreach team at Ummeed works with both mainstream and special schools to promote the development of inclusive environments and practices within schools. This involves creating an inclusive culture and working toward implementing policies so that children with disabilities can reach their maximum potential in both the social and academic arenas.

The team advocates for such children and their families by interacting with schools and supporting the participation, engagement, and the learning of these children within the school context.

Ummeed has worked with over 80 schools in the last five years as part of service delivery to support children with disabilities in the classroom. Our work with schools involves engaging in long-term training to build capacity within school systems to support CWDs, conducting short-term awareness-building sessions, and compiling a manual on "Best Practices for Inclusion" within the Indian context.

Conclusion

Now picture this… A young child on the autism spectrum enters the inclusive school. There are 50 children in the classroom. The class teacher knows that there will be noise and unpredictability during music and sports class. She takes him aside in drama class and seats him close to her with his work before instructing the class to break into groups and begin their work. She has made a plan with him to give her a non-verbal signal in advance whenever he feels that the environment is getting too loud or that he needs to be by himself. She will call out to him and give him the option to sit by her whenever he gives this signal. The class completes their work and they are all called to enact their pieces. He loves reciting and has a gift for memorising long paragraphs. He does an excellent job and the whole class claps. It is break-time and another little boy takes his hand and they move toward the lunchroom together.

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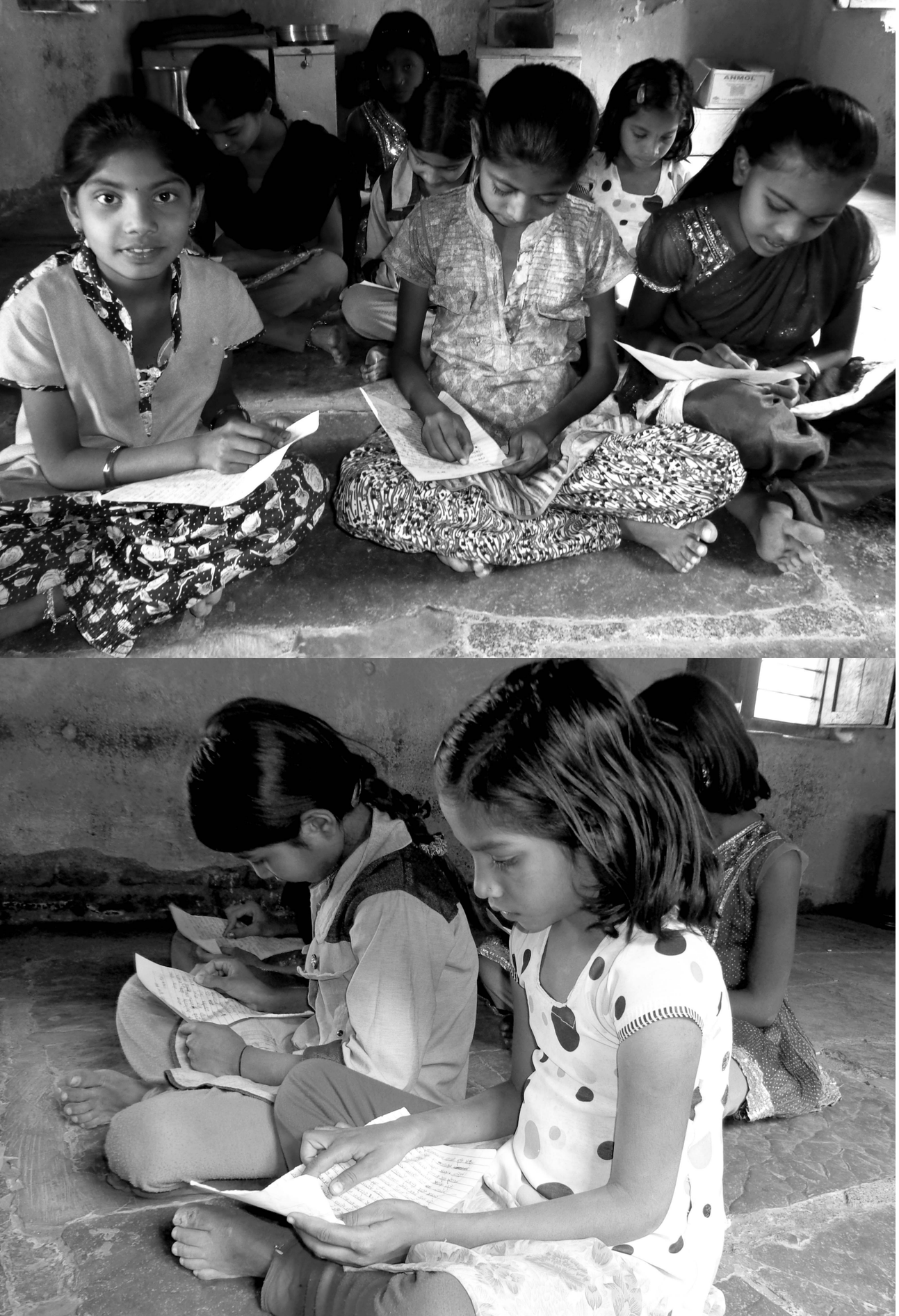

Education of Marginalised Communities with Special Focus on Scheduled Tribes, Nomadic Tribes, and Denotified Tribes

KISHORE DARAK

Introduction

"The destiny of India is now being shaped in her classrooms," stated the Kothari Commission famously (Kothari et al, 1966). The destiny of the nascent nation relied on the precondition that *all* children were present in classrooms and participated in the process of education. Five decades after the Kothari Commission report, there are a substantial number of children who are either absent from classrooms or are discouraged by these very classrooms from participating in meaningful education. Among them are children from marginalised communities, particularly the Scheduled Castes (SC), Scheduled Tribes (ST), Nomadic Tribes (NT), and the Denotified Tribes (DNT), who are more vulnerable to educational disadvantages due to the nature of their social marginalisation as well as the poorly informed strategies of the state.

While children from the ST community face severe systemic negligence, those from NT and DNT communities experience worse conditions and are systemically made almost "inexistent."[1] This becomes obvious on several fronts. It is estimated that for tens of millions of NT and DNT children, who form a major portion of India's out-of-school young population, schooling is impossible due to constant or seasonal migration. While NTs and DNTs migrate frequently for their livelihoods, DNTs also migrate due the historical stigma associated with their official listing as "criminal" tribes in the 1870s. This clearly affects the availability of quality education for nomadic children. In this regard, the Kothari Commission report clearly states, "There are several nomadic and semi-nomadic groups in the country whose educational needs have been hitherto neglected almost completely" (Kothari et al, 1966). In the case of education of tribal children, the problem

ranges from "non-provision and under provision to the provision of the most inferior facilities, even at the basic primary level" (Velaskar et al, 2005). The condition of children from NT and DNT communities is so severe that in spite of gross under-provisions, ST children are still better placed than NT and DNT children. Educational curricula and textbooks further marginalise these groups. In the post-Independence era, curricula are observed to be "urban elite are male-centric and [are] bereft of the country's rich cultural diversity," thus jeopardising the education of tribal as well as nomadic children (Velaskar et al, 2005). This elitist curriculum pushes the SC and ST communities to the periphery of its imagination and does not even acknowledge the lives of NT and DNT communities.

The destiny of the nascent nation relied on the precondition that all children were present in classrooms and participated in the process of education.

Demography and Sociocultural Background

According to the 2011 Census, the population of the ST community is over 104 million, i.e., 8.6% of the total population of India, while the estimated population of NT and DNT is about 13% (Renke et al, 2008). About 2.8% of urban dwellers in India are from STs, while the rest of the ST population lives in rural areas.[2] No such data is available for the NT and DNT populations.[3]

The SC, ST, NT, and DNT populations contribute hugely to the linguistic diversity of India. The estimated number of languages in India is 780, but only 22 of these are included in the Eighth Schedule of the Indian Constitution. Since most tribal languages are recognised by neither the state nor the education system, language becomes an immense hurdle in the education of these communities, if at all they can access it. Language is, in fact, the greatest hurdle to education, and multilingualism is a natural condition in India, but this fact is not considered while developing pedagogies or didactic strategies.

Education and Retention in Schools

While the ST enrolment rate has improved over the past decade or so, the transition of these students to higher grades, and their retention in school, remains a concern. About 86.44% of ST students transition from primary to upper primary, 84.4% from elementary to secondary, and 53.4% from secondary to higher secondary. Thus, in a best-case scenario, according to U-DISE data (2014–15), out of every 100 children admitted to Grade I, only 38 would enter Grade IX. The situation is worse for girl students.

Nevertheless, the U-DISE and other data sets from federal or state-level agencies do not consider the NT and DNT categories[4] in their reports. This shortcoming in maintaining data further pushes children from these groups to the extreme margins.

Educational provisions for ST, NT, and DNT children

Federal and state governments have been supporting residential schools for tribal children known as the Adivasi Ashram Shalas. These schools come under the jurisdiction of Tribal Development Departments (TDD). The Social Welfare Departments (SWD) in different states also provide residential schools for DNT and NT children. These children are entitled to facilities like:

- Education, including supply of textbooks, uniforms, and stationery free of charge at all stages of school education to children in government-approved hostels, ashram schools, and, in many states, in regular schools.
- Pre-matriculation stipends and scholarships at the middle and/or high school level.
- Hostels and lodging facilities in the hostels meant for backward classes, including SCs.
- Scholarships for higher education (Velaskar et al, 2005).

TABLE 1: **The following table shows the percentage of ST enrolment in total enrolment.**

Location	% of ST Enrolment in Total Enrolment 2011 Census	Primary (%)	Upper Primary (%)	Secondary (%)	High Secondary (%)
Maharashtra	9.4	12.26	11.10	8.77	6.79
All India	8.6	10.83	9.76	8.49	6.45

SOURCE: UDISE 2014–15, all numbers are in percentage.

While these facilities exist, and these provisions have even increased over the past five decades, specific data on how they are provided to students remains unavailable. Such a situation puts NT and DNT children at a great disadvantage in the era of data-driven administration and governance. In this regard, below are some major issues in the provision of education to ST, NT, and DNT children:[5]

- The number of residential schools, especially for NT and DNT children, are disproportionately low.
- Almost all schools under the TDD and SWD[6] are under-staffed. Rules concerning filling staff vacancies, appointing female wardens (in the case of schools that enroll girls), or providing the minimum number of rooms, bathrooms, and toilet facilities, etc. are not followed. There is a mismatch between the infrastructural requirements laid out by the rules of TDDs and SWDs and the grants provided by them.
- In many states in India, primary schools have been observed to deviate from the norms prescribed by the Right of Children for Free and Compulsory Education Act, 2009 (RTE). Even in secondary schools, the norms set by the Directorate of Secondary Education, Maharashtra, or the Rashtriya Madhyamik Shiksha Abhiyan (RMSA) at the national level, are not fulfilled by these schools.
- These schools are inadequately staffed. Standards set by the RTE for the Pupil–Teacher Ratio (PTR) are not met because the pre-RTE PTR rules have not been amended. Moreover, as these schools are residential, the teacher has to play multiple roles, such as that of a teacher, guard, cook, driver, doctor, etc., therefore working round the clock.
- Teachers do not always live on campus although they are expected to do so in remote areas.
- The lack of infrastructure adversely affects the quality of education on the one hand and proves dangerous for the children on the other. Recent reports show that a shortage in basic facilities like toilets, bathrooms, bedding, electricity, healthcare, etc. has resulted in the deaths of 882 tribal children in schools across India between 2010 and 2015 (The Economic Times, 2016).
- On-campus security is a serious concern for marginalised children. There has been an increase in the number of cases of sexual assault—including rape—reported at both state and

1 The invisiblisation of NTs and DNTs takes place at all levels, inside and outside the state system. The dearth of material on education of NTs and DNTs I faced while developing this strategy paper also reiterated this fact.

2 It is a limitation of the Census data that a person is recognised as living either in an urban area or in a rural area. However, there is a large ST population that lives close to or in forests without access to many facilities available in rural areas, but is still considered rural.

3 The number of NTs and DNTs, as supplied by the Renke Commission in 2008, is 107.4 million, but this figure is only an estimate.

4 Some castes among the NTs and DNTs fall under the SC or the ST category and may be counted in the collective data; but the unavailability of separate data can be interpreted as failing even to recognise the existence of millions of NT and DNT children.

5 Apart from some publicly available reports and data, this list is also based on: (i) my earlier unpublished study submitted to the Government of Maharashtra; (ii) telephonic conversations I conducted with the officials of TDD and SWD; and (iii) an interview of the headmaster of a SWD school.

6 The schools are either directly managed by these departments, or by private trusts or NGOs operating on financial grants from these departments.

private schools. The lack of simple provisions, like a resident female warden, is listed as a cause for such brutalities against young girls.

- The lack of basic facilities accelerates the dropout rate, especially among adolescent girls, leading to poor transition rates from elementary to secondary and secondary to higher secondary schools. Thus, a lack of facilities at the school level means a lack of opportunities in post-school life.
- The grants given by the government to care for each resident child is inadequate for the intended purpose. It leads to unhealthy compromises in the quantity and quality of food and other facilities given to students, affecting their health and nutrition. This is considered one of the main reasons for the poor status of education among tribal, NT, and DNT children.
- There are no specific structural provisions under the TDD and SWD to enrich the skills and knowledge of teachers. Consequently, teachers continue to use old methods and pedagogies that only further low-quality education.
- Ashram schools appear not to consider the fact that tribal and nomadic children may have immense physical capacities, and that they belong to oral cultures. Teachers' insensitivity towards these two factors adversely affects the quality of education.
- Student performance in these schools is lower than the average performance of comparable schools at the elementary level. At the secondary level, some data shows that ST children do better than their SC and, sometimes, OBC counterparts.[7]
- Schooling and education fall under the gambit of the TDD and SWD. However, these departments lack the expertise to handle schools, and thus fail to offer sufficient capacity-building for teachers.

From the above, it is clear that ST, NT, and DNT children, and the systems that provide them with education, both need several kinds of support. This can be provided in various ways by non-governmental organisations (NGOs), foundations, and under corporate social responsibility (CSR) programmes.[8]

Some suggestions include:

1 Infrastructure

Most TTD and SWD schools require:

- Well-equipped kitchen sheds
- Safe drinking water
- Usable classrooms and dormitories
- Clean and hygienic toilets and bathrooms
- Utensils for cooking and serving food
- Electricity and electrical fittings like lamps, fans, etc.
- A supply of quality clothes for children
- Recreational facilities

Support to setup such infrastructure may be rendered either one-time or on an annual or bi-annual basis.

2 Academic Needs

Academic activities can be supported at two levels:

A. Establishing and maintaining basic infrastructure like:

- Functional libraries
- Well-equipped laboratories
- Adequate supply of writing material
- Teaching and learning material
- Sports equipment
- Computers and allied digital equipment

B. Providing teacher training by identifying the needs of teachers and arranging meaningful, rigorous training and education programmes. The most efficient way to achieve better learning outcomes would be to implement capacity-building programmes for teachers. Teachers at the secondary level complain that incoming students lack basic competencies; they, therefore, need special training to deal with such students.

7 A recent National Achievement Survey (NAS), quoted in Pragat Shaikshanik Maharashtra and issued by the Department of School Education and Sports, Maharashtra, 2016, shows numbers leading to this observation.

8 These provisions are primarily the responsibility of the state. The suggestions listed should not be seen as the state shirking its responsibility, but rather as a stop-gap arrangement to ensure that no child from these vulnerable communities is deprived of their constitutional and human rights.

3 Language Education

A. Students' scholastic achievements depend largely on their language proficiency. As the native language of most of these children is different from the medium of instruction in their schools, they find it challenging to cope with classroom teaching. Teachers are not trained to teach students who do not know the language of instruction; therefore, training teachers to handle multilingual situations needs to be a top priority.

B. Knowledge of English forms another important aspect of language learning, as it is directly related to the social aspirations of the parents. Secondary school students also aspire to communicate in English. Therefore, schools that follow other language mediums should make arrangements to offer better instruction in English. Teachers also need strong support in this area.

4 Development of Miltilingual Material

Since ST, NT, and DNT children speak different languages, their first few years at school are a very difficult experience. States like Odisha and Maharashtra have developed bi- and trilingual reading material for the first three or four grades so that the transition from the child's native language to the language of the school (which is generally that of the state) becomes smooth and easy. CSR foundations can support such endeavours at the state or district level through NGOs or individuals working in this field. Such practices need to also be extended to secondary schools in some identified areas. Considering that unfamiliarity with the language of instruction is one of the main reasons for poor learning levels, multilingual material is needed not only for language education but also for mathematics and other subjects.

5 Building Capacities of Teachers

Apart from the above two methods of providing support, CSR foundations may also consider supporting NGOs and individuals working in the areas of capacity-building in pedagogy, evaluation and assessment, child rights, etc. Foundations can prioritise support for language and mathematics teaching, and may extend it further to social and natural sciences.

6 Documentation

The state machinery is not equipped to record data about the population and status of NT and DNT communities. The absence of records leads to forced, systemic "inexistence". CSR foundations could support the government in the development of a system to capture the data required for extending the benefits of the welfare schemes meant for these communities. Such support may prove to be a step towards the Kothari Commission's view that "such groups have to be assisted in developing more settled ways of living" (Kothari et al, 1966).

The above suggestions chart how CSR foundations can play the role of catalysts in the education of ST, NT, and DNT children. Their educational rights, long overdue, seem close to becoming a faded promise of the Indian Constitution. With the enforcement of RTE, denial of education or even providing low-quality education is considered a violation of a child's fundamental right. Further, schemes like Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Rashtriya Uchchatar Shiksha Abhiyan (RUSA) seek to maximise the number of students accessing higher education. The universalisation of secondary education is expected to become a reality by 2030. These national targets can be met efficiently if governments and civil society work together using the support extended by CSR foundations.

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The Importance of Developing Vernacular Languages

ANJALI NARONHA

Abstract

Vernacular languages are the medium of instruction in most Indian schools. They are, therefore, the medium in which children learn to think in all areas of learning. Yet, scant attention is paid to their learning and pedagogy. In addition, given that India is a multilingual country, every classroom consists of speakers of more than one language. It is therefore necessary to develop a robust pedagogy for learning vernacular languages not only in primary but also in secondary school, as it promotes cognitive and social development.

Introduction

Without language, it is impossible to express thoughts, communicate, or even think. Communication is a core part of a child's conceptual development and, therefore, should be given great importance in her education. Yet, the development of language abilities, whether oral or written, is taken for granted. This is one of the reasons for the lack of conceptual development among school-going children. In a multilingual country like India, the choice of language as medium of instruction becomes an additional issue.

Language education at the middle and high school levels must be considered separately from language education at the primary school or college level. At the primary school level, children learn to read and write in the language of instruction. It is assumed that they know the language. However, for several children, the medium of instruction is an alien language. Recognising this, recent policy documents have suggested developing children's competence in the language of instruction by making classrooms multilingual (National Curriculum Framework, 2005). According to policy documents, in the middle and high school levels, there is a twofold focus on:

- The learning and development of three languages, including one which is the medium of instruction;
- The use of the medium of instruction across different subjects and registers, both formal and informal.

This strategy approach paper will attempt to review the language education policy in India; the nature of language and literacy learning and development; the social, cultural and cognitive context of multilingualism; and the implications of these for curricula and pedagogy in middle and high schools. Based on this review, it will recommend programmes to support in vernacular languages at the middle and high school level.

What is Language? Implications for Pedagogy

Language is a distinguishing aspect of the human species, allowing for complex communication. Scientific research demonstrates that the human brain is endowed with a mechanism to learn languages as part of human development; the famous linguist Noam Chomsky called this the 'language acquisition device'. Each language is a self-referential, meaning-making system, drawing its references from a specific social and cultural context.

Language as a Rule-governed System

Every language is a structured system governed by certain rules (grammar) that are internal to that language (or sometimes a group of languages), and comprise elements common to all languages. For example, all languages have groups of sounds—phonemes, syllables, and words—that together make sense. They also have certain categories of words, such as foundational elements (nouns and noun phrases), subjects and objects, and verbs and verb phrases. All languages have a particular word order for their sentences. The human brain has the ability to make sense of all these aspects of language.

Given the above two points, rather than didactic teaching processes, language teaching requires the designing of opportunities and stimuli using which children can extract, use, and practice elements of the language.

Vernacular languages are the medium of instruction in most Indian schools. It is necessary to develop a robust pedagogy for learning vernacular languages, not only in primary but also in secondary school, as it promotes cognitive and social development.

1,652

mother tongues are spoken in India as reported in the 1962 Census.

Social, Cultural, and Contextual Features of Language

Small groups, like family and friends circles as well as larger communities like countries develop many cultural features. For example, in certain cultures, it is considered inauspicious to say, "I am going"; instead, a phrase like, "Just shut the door" may connote not just the actual fact that the door needs to be shut, but may also indicate that the person is going somewhere. Seemingly unrelated responses may be offered due the contextual meaning of the initial phrase.

It is important for students to understand these cultural and contextual cues; pedagogy must present them with opportunities to do so.

Language as a Vehicle of Thought and a Medium of Instruction

Because language has the properties outlined above, verbal and written language serve as mechanisms for thinking as well as means of communication, and therefore, are a crucial part of a child's education.

In order for a child to develop the skills necessary to understand a language as a medium through which other subjects are taught, as opposed to learning the language in itself, somewhat different pedagogies and emphases are needed, though many principles may remain the same. Understanding or writing a scientific text is quite different from understanding and writing a poem.

Language as a medium of instruction requires a language across-the-curriculum policy, where the language level of learning materials across subjects are reviewed and brought to the same level, language exercises are built into subject texts, and teachers are oriented to help children understand the language of the subjects.

Which Language(s), with What Purpose

One Language or Many: The Case for Multilingualism

For a long time, it was believed that the human brain best learned one language at a time. Moreover, exposure to too many languages was considered a hindrance to the learning of each language. Relatively monolingual colonial powers, such as Britain, propagated this idea to their advantage.

In the last few decades, however, extensive international research has demonstrated the advantages of bilingualism and multilingualism. In addition to aiding in the development of brain plasticity, it also proves advantageous in cognitive functioning, as the multilingual brain processes more data and is therefore more active. Some research also points to multilingualism being instrumental in delaying the onset of dementia and Alzheimer's disease. Though this research is in its early stages, it clearly indicates the lifelong advantages of being multilingual (Perquin et al, 2013).

Knowledge of different languages gives one the opportunity to compare and analyse linguistic features as well as cultural contexts, thus enhancing one's meta-linguistic understanding and improving language proficiency.

A language connects one to a people and their culture. Multilingualism grants one access to different worlds, different literatures, and different histories, presenting the opportunity to build a greater understanding of the world.

Internationally, various countries, both advanced and developing, are now encouraging bilingualism and multilingualism in their education—Hong Kong, USA, Canada, Denmark, South Africa, etc. are cases in point; some, like Hong Kong, encourage the use of more than one language as the medium of instruction. Each of these countries has different language and language education policies for different schooling levels. It is not possible to do a comprehensive review of these policies in a short strategy paper. Suffice it to say that in countries like Hong Kong, Canada, Ethiopia, South Africa, Denmark, etc., there is ongoing research on the effects of multilingualism and the use of the mother tongue as the medium of instruction. Research in Hong Kong shows that Chinese-medium students retain a significant advantage in all social science subjects at the higher secondary level over those who switch to the English medium, while there was no difference in science subjects (Government of Hong Kong, 2004). An Ethiopian study also revealed the advantages of making a late exit from the mother tongue and the vernacular medium (Heugh et al, 2010).

So, while competence in the language of available research is important for an advanced understanding of the subject, there are unequivocal advantages to trying to understand the subject in one's native tongue. The more vernaculars are developed, the more access to advanced comprehension of subjects is possible.

Review of the Language Policy in India and the Three-Language Formula

The 1961 Census reported that 1,652 mother tongues are spoken in India. The entirety of Section XVII of our Constitution is dedicated to policies on languages.

Article 350A of the Constitution provides for the education of every child, particularly those from linguistic minorities, in her mother tongue up to the primary stage (Class 1–5). While this article has been in the Constitution since 1956, its implementation has been limited, as the use of minority languages is often seen as a sign of backwardness.

In 1957, a decade after Independence, the Central Advisory Board of Education suggested a three-language formula. This formula was further reviewed at the Meeting of the Chief Ministers of the States in 1961. They concluded that a school-going child should study (i) the regional language; (ii) Hindi in non-Hindi areas and any other Indian language in Hindi areas; and (iii) English or any other modern European language.

The Education Commission, 1964–66, recommended a modified three-language formula according to which (i) the mother tongue or regional language was

to be taught as the first language from Class 1 to 10; (ii) the second language, taught from Class 5 to 10, could either be Hindi or English, and the other could be studied as an optional language; and (iii) the third language, to be taught between the Class 8 to 10, could either be Hindi or English, whichever had not been studied previously. At the higher secondary stage, a student is required to study any two of the languages she had studied earlier or any two of the following and one or more Indian language:

1 Modern Indian languages
2 Classical language (Indian or foreign)
3 Modern foreign languages

The idea behind this formula was that children would learn at least one language of a different state. However, the three-language formula was operational in letter, but not in spirit.

The first, second, and third languages were to be studied for ten, six, and three years, respectively, and any two of the three languages studied earlier could be continued for two more years (Languages and Media of Instruction).[1] It is logical then to use the language studied for ten years as the medium of instruction. Unfortunately, however, in the clamour for English-medium schools, this is often missed. English is often the second and sometimes the third language to be studied and yet becomes the preferred medium of instruction, thus leading to a lack of comprehension among a large number of students.

The National Curriculum Framework (NCF) 2005 recommends that in addition to being taught as a language, the mother tongue or the regional language should also be the medium of instruction in school. It therefore encourages bi- and multilingualism by allowing students the option of having multiple languages as the medium of instruction. This is a major step forward from the three-language formula.[2]

1 The Education Commission of 1964, popularly known as the Kothari Commission, was the first comprehensive education commission in independent India to study both school and higher education. Its work lead to the National Policy on Education, 1968.

2 The NCF 2005 Focus Group Paper on Indian Languages recommends the mother tongue as the medium of instruction at the primary school level, with the regional language, second language, and English taught as subjects.

The State of Language Education Policy and Practice in India

While three modern Indian languages (MIL) are the minimum requirement in the three-language formula policy, some states like Tamil Nadu make do with just two—Tamil and English. States of the Hindi belt introduce Sanskrit, a classical Indian language, as early as primary school, thus losing the opportunity to make children actively multilingual in live Indian languages. Another barrier to multilingualism is the perception that some languages are inferior to others, despite the fact that linguistically, this is not true—all languages have the potential to communicate in the most complicated situations.

Secondly, the Constitutional right of receiving education in one's mother tongue, especially in the case of tribal and minority languages, has been largely ignored in primary schools, except in certain pockets of Odisha, Andhra Pradesh, and Chhattisgarh in the last decade. Research into mother tongue-based education in tribal areas of Odisha and Andhra found that those learning in their mother tongues consistently from Class 1 to 5 performed significantly better than those who did not (Longitudinal Study on MLE IInd Phase).

There are almost no research efforts in the Indian context that look at language education, particularly of the vernacular languages, even though about

70% or more

of Indian children are estimated to go to vernacular-medium schools.

While three languages are taught in schools, they are all taught as subjects. Research on first language development, second and third language acquisition, and development of reading, reading comprehension, and writing skills informs neither the curricular nor the pedagogical development of schools nor language teacher education. As a result, learning materials and pedagogy are unsuited to the learning of languages. Language learning requires a multiplicity of materials, rather than a textbook rigidly organised into sequential chapters. Digital resources and processes are very useful in supporting language education. Most curricular reform is reduced to overhauling textbooks and fails to take cognizance of research in the above fields.

The National Council of Educational Research and Training (NCERT) 2005 edition of middle and high school language textbooks did, however, make an improvement of sorts. In this round of textbook-making, in both English and Hindi textbooks, there is more emphasis on activities outside the immediate texts. One can also see the difference in the English and Hindi textbooks. There is much more support for English learning—with a glossary running alongside the text and many more language exercises. In the Hindi chapters, there is intentional selection of good literary texts with ample use of colloquial regional words and phrases.

Language as Medium of Instruction

Another problem is the lack of recognition of the distinction between language as language and language as medium of instruction. We take it for granted that a language learned as a subject is good enough to be used as a medium of instruction. Little do we realise that the effort required to understand and communicate in subject domains is different from that required to understand and express ideas for general use and in literature—as is done while learning languages. This means that subject materials should pay attention to language in subject teaching, and that subject teachers should be oriented towards the language requirements of subjects.

While primary education curricula and pedagogy have received a fair amount of attention across the country, middle and secondary school curricula, particularly in the area of language(s), have been neglected. There are almost no research efforts in the Indian context that look at language education, particularly of the vernacular languages, even though about 70% or more of Indian children are estimated to go to vernacular-medium schools. According to

28.73%

of schools at the secondary stage use English as a medium of instruction.

the Eighth All India School Education Survey, 2009 (2016), English as medium of instruction is used in only 15.49% schools at the primary stage, 21.08% schools at the upper primary stage, 28.73% schools at the secondary stage and 33.06% schools at the higher secondary stage. The corresponding figures in the Seventh Survey in 2002 were 12.98%, 18.25%, 25.84%, and 33.59%, respectively. It may be assumed that the remaining schools make use of the vernacular medium.

There is also a very small and declining number of schools which are double medium schools. As can be seen above, there is a push to make English the medium of instruction at lower levels of schooling. While there have been government English language training institutes in almost every state of India for a long time, and even district centres for English teaching, and in the last decade, a large number of private English language teacher training courses, there are only two government institutes focussed on vernacular languages and none in the private domain. The first is the Central Institute of Indian Languages (CIIL), Mysore, with seven Regional Language Centres located at Bhubaneswar, Pune, Mysore, Patiala, Guwahati, Solan, and Lucknow. These centres conduct teacher training in non-mother tongue languages for secondary school teachers. Second is the Kendriya Hindi Sansthan at Agra with associated colleges at Aizawl, Guwahati, Mysore, Delhi, Hyderabad, Bhubaneshwar, Shillong, Dimapur, and Ahmedabad, that impart Hindi education. Both institutions are able to do very little work on language pedagogy issues and can only address Hindi and a few languages.

Given the above, this is an appropriate time to draw attention to the field of language education at the middle, secondary, higher secondary, and higher education levels.

Libraries a Crucial Aspect of Language Education

In order to develop higher order competence in language(s), a wide network of public and school libraries are necessary to encourage reading. There are many articles to this effect: "Of interest to us is that access to books, again a combination of school library holdings and public library circulation, is a significant predictor of the difference in NAEP reading scores between Grade 4 and Grade 8," to quote Krashen et al (2012). It is interesting to note that while poverty has been found to be a strong predictor of reading scores in early classes, the scores of Grade 4 to Grade 8 students improved with library access.

Library Policy and The State of Libraries in India

It is, therefore, surprising, and a pity that 70 years after Independence, there has been no strong policy for the provision of school, college, or public libraries, particularly in the middle and upper grades. It is only in 2005 that the National Curriculum Framework for school education and the Knowledge Commission focussed on the development of libraries in schools and in the public domain. In 2014, a National Library Mission was launched, and subsequently, there have been efforts to digitalise and provide resources through the internet.

Recommendations

Supporting Research

There is no systematic research available on the language competence of vernacular medium students in India (it is probably not available for English either, the way it is now available for students of primary schools). It is extremely crucial to develop tools to properly assess students' abilities and to get an understanding of the state of language education at the secondary level.

Research into the acquisition and development of comprehension and writing skills in Indian languages, both from the perspective of adults (teachers) and middle and secondary school students, is crucial for the development of curricula and pedagogy in these languages. The research can be done with the support of language and linguistic departments; research

There is a dire need to support pilot projects in bilingual and multilingual education that develop students' knowledge of multiple languages, use multilingualism as a resource, and use more than one language as a medium of instruction in mainstream schools.

institutes like the Central Institute of Indian Languages (CIIL), Mysore; and Tribal Research Institutes and non-government organisations that work in languages. The National Multilingual Resource Consortium (NMRC) does research into the nature, acquisition, and development of different languages sequentially as well as in parallel, and also helps support multilingual education. As mentioned earlier, there are 22 official languages. All these languages are either used as a medium of instruction or are taught in the schools of different states. Hindi is the medium of instruction in the largest number of schools: in Madhya Pradesh, Chhattisgarh, Uttar Pradesh, Uttarakhand, Rajasthan, Jharkhand, Bihar, Himachal Pradesh, Haryana. It is also taught as second language in a large number of schools in other states. Other languages like Odia, Telugu, Urdu, Tamil, Kannada, Malayalam, Gujarati, Marathi, Bengali, Meitei, Konkani etc. are also taught as medium of instruction as well as languages. Their popularity increases and decreases at different times.

There are some general features of language that make it more or less comprehensible—features like sentence length and number of clauses, distance of references from what they are referring to, even word length sometimes, and familiarity and abstractness of words and phrases, play a role. Some of these features have been incorporated into tests assessing levels of readability as in Fletch Kincaid readability scale for English. Such scales have not been developed for vernacular languages. Hence, textbooks often do not match grade level competence. Research into—and development of—such tools for assessing the language levels of texts is an area to be explored.

As much research shows the advantages of multilingual education, research into the effects of learning in double-medium schools vis-a-vis single-medium ones may help shed light on this further.

A review of the CIIL, Kendriya Hindi Sansthan, and their extension centres and affiliated colleges can be undertaken to understand their current state and operations. Some languages—Hindi, because of its wide use, and one or two languages each from the West, East, and South—can be further researched to understand its nature, acquisition, and pedagogy, particularly at the middle and high school levels where advanced competencies, comprehension, and literary abilities become more important. Collaborative projects between research organisations and universities in the different fields would be of help. In the recent past, there have been such collaborations between Ambedkar University, Delhi, Azim Premji University, Bengaluru, TISS, Hyderabad, and two non-governmental organisations in Maharashtra and Karnataka on early literacy.

Supporting Pilot Projects on Curriculum, Pedagogy and Material Development

Almost no work has been done on the development of curricula and pedagogy in different languages at the middle school level. Most organisations that work at the middle or secondary school level tend to focus on science, English, and mathematics. Alternative schools do attempt to develop robust language and integrated education programmes, but again, many of them function in the English medium. Some schools, like Muskaan in Bhopal, Adharshila in Sendhwa, Madhya Pradesh, and Pragat Shikshan Sansthan in Phaltan, Maharashtra, have done some interesting work in multilingual education at the pre-primary and primary school level. Shishu Van, Mumbai, is notable for its teaching of Hindi as a second language.

There is a dire need to support pilot projects in bilingual and multilingual education that develop students' knowledge of multiple languages, use multilingualism as a resource, and use more than one language as a medium of instruction in mainstream schools. Such projects are being taken up by organisations like Muskaan, Aadhaarshila, and Eklavya in Madhya Pradesh and Chhattisgarh, Promise Foundation in Bangalore, Quest in Maharashtra etc.

There is also a need to work on the development of reading and writing skills in multiple languages as the structure, social context, and literature of different languages varies and needs to be integrated; meaning-making requires inputs from all three areas. As a medium of instruction, language requires the development of different registers—the language used for science is very different from that meant for history or social sciences. Meaning-making exercises need to be done for each kind of language. Middle and high school language competence across subjects requires Cognitive Academic Language Proficiency (CALP), which requires students to demonstrate an advanced understanding and comprehension at the lexical, syntactic, and semantic level, including of academic terms. Exercises need to be built around these in subject textbooks and teaching-learning pedagogy. Bi- and multilingual mediums of instruction need to be encouraged at the middle and secondary stages, through pilot programmes. Programmes that emphasise language across the curriculum need to be developed, subject teachers need to be trained

Projects that involve developing interactive, non-textbook material across different languages and cultures, and which use multiple media like games, texts, films, and software, need to be encouraged.

Local communities and parents also need to be educated about multi-lingualism— its pedagogy and its benefits.

to include language-based activities while teaching their respective subjects, and new learning materials for core subjects should be developed, which include language activities.

Language programmes—particularly multilingual ones—could be taken up in both urban and rural areas. Heavy migration into cities often leads to the exclusion of children from other linguistic backgrounds since they do not understand the language of instruction.

Projects that involve developing interactive, non-textbook material across different languages and cultures, and which use multiple media like games, texts, films, and software, need to be encouraged. Curricula that enhances the use of such materials would also be necessary.

Organisations working in secondary education can be supported to strengthen their work in languages. A national resource group can be formed to support this work.

Supporting Vernacular and Multilingual Libraries

As mentioned above, access to rich and well-organised libraries go a long way in advancing children's language abilities at the secondary school level. However, it is also clear that there is scarcity of libraries with books of any language across the country in schools or in the public sphere, except in a few states. There needs to be a collaborative and concerted effort to increase the reach of books through libraries in secondary schools as well as in the public domain. Provision of e-libraries could increase outreach at a minimal cost. Libraries must be equipped with literary and non-fiction books and computer resources and must organise orientations for teachers on their use. The Bread Society, Andhra Pradesh, has developed a model for school libraries at the secondary level, which can be studied and its lessons be used for expanding library access further.

Supporting Teacher Education

For any education programme to be implemented, orientation, capacity-building, and scaffolding of teachers' competence is necessary. Teachers do not understand processes of developing language comprehension and writing abilities, as these are not part of their pre- and in-service teacher education programmes. Workshop-based or online courses, as well as programmes enabling language-based activities in non-language subjects, need to be supported. These could form part of pilot support in the first phase.

Use of Computer Technology in Promoting Multilingual Literature and Pedagogy

Language development requires access to dictionaries and translations. In the last two decades, these resources have been developed and made accessible online—particularly, for several major international and some Indian languages. The development of fonts, editing, and readability software, dictionaries in multiple languages and scripts, and translation services across languages can make the pedagogy of vernacular languages more accessible across different regions. This would also help multilingualism. The development of this technology needs to be supported.

Supporting Development of Discourse Through Seminars, Journals, Films, and Webpages

The discourse around language education is very limited. It focuses on purity and correctness rather than interactivity and expression. It is archaic and colonial, and privileges monolingualism. There is, therefore, a need to inform the academic community of new research on brain development and language education, and to update their understanding and approach. To enable this, journals, annual seminars and workshops, and webpages need to be supported.

Local communities and parents also need to be educated about multilingualism and various aspects of vernacular language development—its pedagogy and its benefits. It is important that students not only learn English, but they also understand that a strong vernacular base aids—not hinders—English competence. Such issues can be taken up in seminars and journals.

Additionally, bi- and multilingual journals need to be seeded and supported.

Supporting Development of Literature in Minority Languages

Minority languages have a very rich oral tradition, but are often without scripted literature, thus inhibiting their use. To make mother tongue-based multilingual education—particularly of the minority languages—functional, such literature would be needed. Projects aimed at developing multicultural literature in many languages can be supported.

Conclusion

Given that more than 65%–70% of schools at the secondary and higher secondary level use the vernacular regional language as the medium of instruction, and a large percentage of students of these schools have home languages different from the medium of instruction, there is a dire need to work on vernacular language education and the vernacular as the medium of instruction. When understanding at primary stages is how, one can hypothesise that there would be serious problems at the secondary level too.

As more and more of the young population are coming into secondary education and require both written and oral communication skills, it would be timely to support secondary language education in some of the ways recommended above.

As the problem is widespread geographically, each support programme can be designed along with other organisations and universities and research institutes.

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The Importance of Girls' Education at the Secondary Level: Gender Stereotypes and Interventions

MEDHAVINEE NAMJOSHI

"*A quality education has the power to transform societies in a single generation. Provide children with the protection they need from hazards of poverty, labor exploitation and disease, and give them the knowledge, skills and confidence to reach their full potential.*"

AUDREY HEPBURN

Girls' education in India has come a long way—what started as primarily home science or grooming schools for girls has evolved into formal and all-inclusive education for girls today. That said, several critical issues persist, such as the lack of gender parity at all levels of education, especially secondary and higher education; poor access to and quality of education; and the societal mindset towards girls' education.

The origins of girl's formal education in India can be traced back to approximately 1810, when British and American missionaries started schools for girls in Bengal Province. For example, around 1824, several girls' schools were established by the Ladies Society for Native Female Education in Calcutta. The oldest secular girls' school in India, currently known as Kalikrishna Girls' High School, was established by two Indian brothers, Nabin Krishna Mitra and Kali Krishna Mitra, in 1847, in the town of Barasat in Bengal Province.

Mahatma Jyotiba Phule, the noted social reformist, with Savitribai and Fatima Begum, established a school for girls in Poona in 1848. They later established three more schools for girls (Sanglikar 2017).

It is estimated that 165 million women aged over 15 years are illiterate in India today, and only one in 100 girls reaches Class 12. While equal numbers of boys and girls attend primary school in India, the gap widens as girls hit puberty and are forced to drop out to work at home or marry. The school dropout rate among adolescent girls in India is as high as 63.5%. Nearly 45% of girls in India are married before the age of 18 years, and roughly 50% of all working children

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are girls (Dasra et al 2015). These disparities in education are reflected in India's position on the UNDP Human Development Index, where it is ranked 131 out of 188 countries (UNDP 2016).

In the last few decades, government policies and budgetary allocations have focused on primary education, which has yielded positive results such as a higher rate of enrolment and literacy. However, policies focused on retaining these students at higher levels of education are very recent additions. Some of the key government policies and programmes for promoting and accelerating girls' education are Sarva Shiksha Abhiyan, District Primary Education Programme, National Programme for Education of Girls at Elementary Level, Prarambhik Shiksha Kosh, National Institute of Open Schooling, Midday Meals Scheme, Mahila Samakhya, Rajiv Gandhi Scheme for Empowerment of Adolescent Girls (RGSEAG) Sabla, Kishori Shakti Yojana, Kasturba Gandhi Balika Vidyalaya scheme, National Scheme of Incentives to Girls for Secondary Education, and the Beti Bachao, Beti Padhao campaign (Uma 2012).

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At the international level, the Sustainable Development Goals (SDGs), a universal call to end poverty, ensure peace and prosperity, and to save the planet, provide guidance on the way forward. The targets for Goal 4 include the following:

- By 2030, ensure that all girls and boys complete free, equitable, and quality primary and secondary education leading to relevant and Goal-4 effective learning outcomes.
- By 2030, ensure equal access for all women and men to affordable and quality technical, vocational, and tertiary education, including university.
- By 2030, eliminate 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.
- By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy.
- By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, education for sustainable development and sustainable 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.
- Build and upgrade education facilities that are child, disability, and gender sensitive, and provide safe, nonviolent, inclusive, and effective learning environments for all.
- By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing states (UNDP n.d.).

In spite of all these supportive policies and programmes, the ground reality of girl's education is not satisfactory. India still has a long way to go, as traditional ideas remain entrenched. According to the Working Group on Child Rights for the 12th Five-Year Plan (2012–17), it would be possible to negate the root causes of exclusion and exploitation of children only if mindsets and long-standing social norms and traditions that violate the rights of children are addressed (Planning Commission 2011).

As per the 2011 Census of the Government of India, India is home to more than 1.21 billion people, of whom around 65% are below 35 years of age. The literacy rate of India as per the 2011 Census is 74.04%, which has improved by a meagre 9.21% since 2001. Given the population size of India, the high child dropout rate among girls can be seen as an endemic problem. Though we have seen a steady rise in the enrolment rates of girls at the primary level, retaining them in schools is still a challenge as, compared to the 57.39% of boys, 60.39% of girls dropout by the time they reach the upper primary level. The gap gets larger at the secondary education level—as against 78.40% of boys, 81.72% of girls dropout by the time they reach secondary education (Census 2011).

The reasons why more girls drop out at the secondary education levels are multifaceted. It has its roots in institutional, economic, social, as well as cultural causes.

Institutional

The below table (Table 1) shows the difference in the number of primary and secondary level schools in India in the year 2014–15 (MHRD 2016).

The unavailability of schools in general, and specifically within the vicinity, is one of the core reasons for high dropout rates at every level of education.

In rural India, the scarcity of schools at the secondary level, lack of female teachers, running water, toilet facilities, and transport adversely affect the enrolment and retention rate of girls.

In rural India, the scarcity of schools at the secondary level, and the distance girls need to travel to reach these schools, increases, reducing physical access to these institutions. The lack of female teachers, running water, toilet facilities, and transport adversely affect the enrolment and retention rate of girls in secondary schools. The quality of education, especially in the STEM subjects (science, technical, engineering, and medical), in state-run schools affects the learning levels of girls. The lack of support such as tuitions or coaching classes results in poor academic performance, which in turn is often cited as a reason to keep girls out of schools.

Education as a system has not succeeded in going beyond an examination-based rote learning system and is not seen as a tool of citizenship and personhood building exercise. At times it fails completely to relate to the lived realities of majority of people or even to provide skill sets necessary for income generation or sustainability.

TABLE 1: **Number of schools at different levels in India, 2014–15**

Number of schools/institutions at different levels	
Primary	8,47,118
Upper Primary	4,25,094
Secondary	1,35,335
Senior Secondary	1,09,318

SOURCE: MHRD (2016): "Educational Statistics at a Glance," Department of School Education and Literacy, http://mhrd.gov.in/sites/upload_files/mhrd/files/statistics/ESG2016_0.pdf.

Economic

The lack of government schools at the secondary level means that students needs to be enrolled in private schools to continue their education. Many studies have indicated that families tend to spend on boys' education and enroll them in English medium schools, or in any other school that is perceived as good, whereas daughters are enrolled in regional language schools. This phenomenon is rampant in Mumbai, where boys attend private English medium schools, but girls from the same family attend government-run or locally run schools. Post Grade 7, government schools with a medium of instruction other than Marathi (the state language), Hindi and Urdu hardly exist, making it impossible for girls to continue their education.

Adolescent girls from marginalised communities such as poor, rural, or tribal populations are at greater risk of dropping out compared to their richer counterparts due this additional burden of fees and transport costs. Studies have shown that as far as nutrition and education are concerned, women and girls are further marginalised in their own families.

Social/cultural

Patriarchal notions and beliefs adversely affect girls' and women's access to opportunities for self-actualisation, making survival itself a matter of struggle for girls. Though much has been made about India's potential demographic dividend, it is important to keep in mind that adolescence is not a monolithic experience, and each person's experience is different and determined by their age, gender, socio-economic status, geographic area, and religion.

For girls from marginalised communities, adolescence is when they have to confront harsh realities such as the consequences of poverty, the burden of domestic chores, and family responsibilities. While the world expands for adolescent boys, as they are expected to perform small errands like going to the local grocer shop, post office, or bank, for girls the boundaries of their freedom and mobility start to shrink. They are not allowed to play outdoors and are expected to pay more attention to their daily chores at home.

Many global development agencies and UN agencies have acknowledged the need to target adolescents, especially girls, as investing in girls helps in reducing vulnerabilities and developing their agency in personal, social, as well as commercial spheres.

Girls from marginalised sections are often robbed entirely of their childhood. Once they come of age, their mobility and exposure to the outside world is restricted. This is when most girls drop out. She is confined to the private realm of her home, cut off from the public domain, and has zero social capital outside her immediate family. This is the time when their training for womanhood begins. Patriarchy does not see a role for women beyond household responsibilities and hence does not value education for girls. Fear of losing the family's honour and the safety concerns around girls and their sexuality are often cited as justifications for restricting women to the private domain of the home. These gender disadvantages get compounded if the girl is from a tribal, nomadic, poor, minority, or migrant community.

Efforts to Bring in a Paradigm Shift

India, with its young population, has attracted the attention of global markets in the last few years. It is well-positioned to take advantage of this large consumer market as well as workforce. This cannot be achieved without bringing the other half of the population—girls and young women—into the main workforce. Many global development agencies and UN agencies have acknowledged the need to target adolescents, especially girls, as investing in girls helps in reducing vulnerabilities and developing their agency in personal, social, as well as commercial spheres.

This has been the driving motivation behind policies and campaigns, both in the public and private sectors. While corporates are targeting girls' education through corporate social responsibility (CSR) projects, advertisers are tapping into the theme of girls' education and empowerment to sell commercial products. The non-governmental sector has also played a pivotal role in terms of improving access, providing relevant skill-building, and influencing societal mindsets in favour girls' education, especially during the adolescent phase.

There have been some very successful experiments that have proved effective in increasing enrollment, helping the transition from primary to secondary education, providing quality education, and improving infrastructure as well as teaching and learning standards.

Solutions

Growing awareness has led to the legislation of new policies and campaigns to support girls' education and skill building. Corporate spending through social responsibility projects have also made a difference in terms of budgetary allocations for girls' education. Non-governmental organisations have also played a vital role in improving access, accountability and quality of education.

There have been some successful interventions by civil society organisations and NGOs that have boosted enrollment rates, helped the transition from primary to secondary education, improved quality of education, and added to infrastructure as well as standard of teaching and learning.

Educate Girls This is a Rajasthan-based non-profit that strengthens government primary schools and brings girls into the education system in districts with the worst gender gap in India. It focusses on the enrollment of girls, the retention of girls in schools, and also on improving infrastructure and teaching quality. The Government of Rajasthan has asked Educate Girls to scale the project and extend the model to schools in other districts. Educate Girls, along with UBS Optimus Foundation (UBSOF) and Children's Investment Fund Foundation (CIFF), launched the world's first Development Impact Bond (DIB) in education on 16 June 2014. It is a three-year pilot that began in the academic year of 2015.

Vacha Charitable Trust This organisation has been working towards empowering adolescent girls from 1995 through its various after-school girls' resource centres in the bastis (poor neighbourhoods habited by marginalised communities) of Mumbai and Thane. It aims to train girls in 21st century life skills and creates opportunities for them to contribute in their civic and personal lives as active agents, thinking critically and making informed choices. It also works to influence stakeholders, including various government departments, to create a supportive environment for girls' education. Vacha has managed to ensure that 95% of its girls complete at least 12 years of education in formal schools. It has a scholarship programme to support the retention of adolescent girls from Class 8 and above. Vacha also brought out of the first report on girls' education, "Interim Report of Action Research on Girls in Pre and Early Adolescence," on the status of adolescent girls in BMC schools in 2002.

The non-governmental sector has also played a pivotal role in terms of improving access, providing relevant skill-building, and influencing societal mindsets in favour girls' education, especially during the adolescent phase.

Ibtada Ibtada believes that without the involvement and cooperation of government schools, the availability and quality of education cannot be improved. Ibtada has been trying to coordinate with the government school system in various capacities since 2003, and has worked toward

opening libraries and placing teachers/animators in government schools. It also organises training programmes for government school teachers to improve their effectiveness. The organisation also run a project called Taleemshal, where modern approaches of education are used to give children the flexibility to learn at their own pace.

CULP CULP organises innovative projects that ensure that maginalised children have access to quality education at the elementary level. It also aims to drive pedagogic improvements in formal schools. CULP mobilises communities to create a positive environment in rural areas for the education of children—and in particular girls—of excluded communities. The innovative and contextualised material of CULP is used by other NGOs and the government for the education of similar groups.

Nandi The Nandi's Nanhi Kali project sponsors education for girls through an average, annual ₹3,500 grant. This provides girls with six days of remedial education and material such as uniforms, school bags, and shoes to enable them to go to school.

Going to School This unique organisation creates design-driven stories to teach the poorest kids on the planet 21st century skills. It currently works across ten states in India. Besides graphic novels, games, apps, movies, digital games, and nationwide television shows, they also work with government systems to ensure that teachers are trained to use of innovative teaching techniques. Going to School stories have been incorporated into the NCERT curriculum.

Lend a Hand This NGO works at the intersection of education and livelihood and aims to create employment and entrepreneurship opportunities for aspiring youth. It makes children's school education relevant to the real world by providing job/life skills training, aptitude testing, career counseling, and bridge loans for micro-enterprises. In addition to directly implementing its programmes in schools, Lend a Hand have entered into a MoU with RMSA Department of Education of Maharashtra and Gujarat and with Andhra Pradesh State Skill Development Corporation to provide programme management and technical support for the vocational education projects implemented by the states.

It has also launched a project to equip youth in India's rural areas with jobs and life skills. This unique time-tested model of vocational training has evolved after 12 years of sustained grassroots efforts by the Vigyan Ashram located at Pabal, near Pune in Maharashtra.

Room to Read, India The Girls Education Program (GEP) of Room to Read works with adolescent girls (aged 11–17 years) to ensure that they not only stay in school longer and complete Grade 12, but that they also build critical skills to negotiate key life decisions. GEP aims to do this by offering life skills training and mentoring to girls. The programme also works on increasing the preparedness of family and community members and creating circles of support around girls.

Centre for Catalyzing Change It implements various programmes, like Bridging the Digital Divide; UDAAN – in School, at Scale; Adolescence Education Program; TARANG – Inroads to Adolescent Development; SABLA – Information, Life Skills, Health and Nutrition Information for Out of School Girls; SWANIRBHAR – Building Agency and Skills for Adolescent Girls. It works primarily in the states of Bihar, Jharkhand, Orissa, and Chhattisgarh. It believes in working at scale and integrating the models with government systems.

These are some of the organisations working in the field. In addition, there are other organisations such Door Step, Sahiyar, Mann Deshi, and many others who work on various aspects of girls' education.

The strength of theses interventions lies in their participative nature and context-specific content. These organisations consult adolescent girls before formulating their intervention plans and incorporate their concerns and needs into the intervention strategies. Their interventions are not restricted to just classrooms but extend to the community.

Conclusion

Enrolling and retaining girls in formal education is vital for India to reap the true potential of its demographic dividend. Adolescent girls completing secondary and higher secondary education have proved to improve other indicators like health and the work participation of girls. The studies and interventions of various NGOs have also proved that every year completed in school delays girls' marriage and child bearing. It helps to build their agency in personal and civic life.

Adolescent girls completing secondary and higher secondary education have proved to improve other indicators like health and the work participation of girls. It helps to build their agency in personal and civic life.

To ensure the retention of girls, curb their absenteeism, and to ensure that they get enough time to study at home, it is equally important to work with the families and the communities they reside in.

Just as access to infrastructural facilities and curricula and teachers who are not patriarchal and who are sensitive to the religious and class vulnerabilities of the girls are crucial, the conducive and supportive mindset of the parents, extended families, as well as society in general is equally vital to achieve better results for girls.

The government needs to build linkages across the various ministries and departments like Education, Health, Minorities, as well as Women and Child Development to work on achieving the desired results for adolescent girls. It needs to welcome young people into the decision-making process. NGOs' intervention models need to address the nuances of the local region and the class, religious, and tribe specific needs of certain populations. Though scale is important when it comes to girls and girlhood issues, supporting and documenting region and need specific interventions is key to ensure more girls enroll, complete, and academically perform well in secondary education.

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School Assessment for Whole School Development

BASANTI ROY

Introduction

Education relevant to the lives, needs, and aspirations of people is a powerful instrument of social, economic, and cultural transformation and is necessary for the realisation of national goals. Education prepares citizens to take their place in a knowledge-based society.

Thus, the necessity to cultivate good-quality schools has been reiterated by several policies and documents, right from the Indian Education Commission (1964–1966) (IEC) to the Right to Education Act, 2009, and Rashtriya Madhyamik Shiksha Abhiyan (RMSA) (2009).

The IEC (1966–68) suggested a nationwide programme to qualitatively improve education by developing criteria to evaluate schools on a scientific basis and improve their performance through structured planning. The commission envisaged a system of self-evaluation by school teachers and school authorities, followed by monitoring by inspecting authorities.

School Performance and School Effectiveness

Models for evaluating school effectiveness are based on a "systems" approach. A school is an open "system" that exists in an environment and interacts with it. The environment includes parents, governmental authorities, various organisations in the neighbourhood, and the school management. It receives its inputs, i.e., educational goals, curriculum, physical infrastructure, educational resources, teachers, support staff, and finances from its environment. The inputs, including physical and financial resources, are used for various processes including classroom teaching, co-curricular activities, and school administration.

Origin of School Inspection

The practice of conducting school inspections to improve school quality can be traced to the British educational system. In 1839, Dr Kay, who headed the Privy Councils' Committee on Education in England, appointed the first inspector for schools. His duty was to ensure that the grants that were

given to schools were spent wisely. In addition, the inspector was given the responsibility of inspiring and encouraging schools. These educational reforms in England affected India too. Consequently, inspecting officers were expected to not only perform their routine duties of examining pupils and school administrations, but also to guide teachers in adopting better teaching methods and improving overall standards. Yet, the inspection system continued to be bureaucratic and non-academic in character. This is evident from the report submitted by the Secondary Education Commission (SEC) (1952), popularly known as the Mudaliar Commission. It observed in its report that the present system of inspections faced criticism from several who were subject to it. It was pointed out that the inspections were perfunctory and abrupt, with more time spent on routine work such as checking accounts and examining the administration of the school. The report also stated that the number of schools entrusted to the care of a single inspector was too many and too widespread for him or her to become familiar with their work and appreciate their problems, nor was the inspector able to advise and guide the teaching staff on improving the performance of the schools. Therefore, since inspections tend to be largely unsympathetic and critical, they were looked upon with some degree of apprehension if not resentment. The report of the IEC (64–66) listed three weaknesses of the inspectorate staff at the district level:

1 Inadequacy in numbers
2 Comparatively poor quality of personnel because of inadequate pay scales
3 Lack of specialisation because most inspecting officers are generalists

To find out why some schools succeed where others do not, McKinsey studied 25 school systems across the world, including 10 of the top performers. Their description of these top school systems suggest that there were three things that differentiated them from the rest:

1 Getting the right people to become teachers
2 Developing them into effective instructors
3 Ensuring that the system is accessible and delivers the best possible education for every child

Gradation

In 2000, the Maharashtra Government introduced an online tool to grade primary and secondary schools. The tool was for self-evaluation and helps schools understand where they stand in terms of various aspects concerning school functioning like physical facilities, quality of instruction, academic qualifications of teaching staff, and the overall development of students including the results of various examinations, teaching methodology, supervision and administration systems, co-curricular activities, relationship with parents, etc.

The weightage given to different factors of the gradation process were:

1 General information
2 Physical Infrastructure **20%**
3 Management **20%**
4 Educational **50%**
5 Information Technology **10%**

The intention here was to make a school aware of its strengths and weaknesses by providing it with a realistic picture of itself, thus enabling it to decide on a course of action to improve quality. Schools were expected to strive to rise from their current grade to a higher one.

The grades, being indicators of a school's performance, enabled the government to take policy decisions.

National Programme on School Standards and Evaluation (NPSSE)

The National University of Educational Planning and Administration (NUEPA), under the aegis of the Ministry of Human Resource Development (MHRD), operates the National Programme on School Standards and Evaluation (NPSSE). It is an initiative that aims at evaluating each school and creating a culture of progress and accountability. The NPSSE visualises "school evaluation" as the means and "school development" as the goal. The programme envisions reaching every school in the country by creating a sustainable and institutionalised system of school evaluation.

NPSSE aims to evaluate individual schools and their performance in a holistic and continuous manner. The major objectives of NPSSE are to develop a technically-sound conceptual framework, methodology, instrument, and process of school evaluation to suit the diversity of Indian schools; it also aims to develop a critical mass of skilled personnel to adapt and contextualise the school evaluation framework to suit different practices across states.

The programme aims to evaluate 1.6 million schools across the country. As part of this endeavour, the School Standards and Evaluation Framework (SSEF) has been developed as an instrument to evaluate school performance. This will enable schools to evaluate their performance against well-defined criteria in a focused and strategic manner. The NPSSE framework comprises seven "key domains" which will serve as criteria for evaluating the performance of schools. The framework has been developed through a consensus-based approach with the broad objective of evaluating diversified Indian schools for incremental improvement. Only the SSEF has the flexibility to do so, which makes it eminently suitable for adapting to different circumstances.

Key Domains

1 Ensuring the availability of adequate resources for schools
2 Teaching, learning, and assessment
3 Learner progress, attainment, and development
4 Managing teacher performance and professional development
5 School leadership and management
6 Inclusion, health, and safety
7 Productive community participation

The SSE framework is a strategic instrument which can be used for self-evaluation as well as by an external entity. The intention of self-evaluation is to provide school personnel with a collective understanding of the school's overall performance and to identify priority areas for development. External evaluation follows as a complementary exercise to self-evaluation so as to ensure that the two processes work in tandem. It aims to develop a complete picture of the school to support its overall improvement.

Some Questions Going Forward

To implement this programme effectively, it will be necessary to ponder on the following key points:

Who Inspectors of schools who have multifarious duties and numerous routine tasks are also tasked with conducting external evaluations.

What Validating the information provided by the schools.

Why To ensure that the school development programme is being conducted, and progress is visible.

How A self-evaluation is conducted and is followed by validation by an external inspecting officer. A plan of action is formulated to enable improvements in each evaluated area. The plan is implemented with due monitoring to ensure that it is carried through. Reviewing, supervising, and monitoring all processes will be essential to achieve the goal.

Proposed Intervention

The following points may be considered in both the assessment and development of schools:

1 Sensitise stakeholders regarding the Whole School Development Programme for improving the quality and performance of schools
2 Empower schools to conduct evaluations
3 Assist schools in addressing weaker areas by developing short-term and long-term plans
4 Support schools in the implementation of their plan to achieve the goal of quality education
5 Support existing resource centres such as block resource centres and cluster resource centres under Public–Private Partnerships (PPPs)

A few schools can be selected and adopted as pilot projects so that the success story can be emulated by other institutions.

Education Ecosystem

School Counselling: Ensuring Positive Mental Health for Secondary Education Students

UPASANA SARAF

Introduction

Children's lives in the 21st century are harder than they ever were before. Although every generation has its own set of issues, this generation of children will face a particular challenge: as it is impossible to predict what today's children will need 20 years from now, or when they reach adulthood, adults may be ill prepared to offer them the right guidance. So, how can our children help themselves? One of the most important factors increasingly being used by psychologists to predict future success is emotional intelligence—it is the ability to take responsibility for one's emotions, manage consequences and conflict, evaluate one's reactions, and build caring relationships.

The Problems of Children

Stress in children has various origins—pressure from parents who want their children to gain a competitive advantage in school, technology that acts as a source of distraction for students, peer pressure and developmental issues, mental disorders, dysfunctional family systems, migration and need to adjust to new communities, rising rate of crime against children, and a lack of space for play and free expression. Key indicators of stress in children include:

Poor Academic Performance Inconsistent performance in school indicates that the student is an under-achiever or a low achiever. Such students typically do not perform to their full potential, as their psychological complexes and cognitive abilities prevent them from concentrating on studies. According to a 2013 study by ASSOCHAM, 87% of primary school students and 95% of secondary schools students attend private tuitions in Indian metros. In addition, the chief cause of suicide among school-going children is reported to be examinations. This shows that the academic system puts immense pressure on children.

Social Maladjustment Adults often consider socialising a natural process. While this may be largely true, socialising is not without costs. Children who are teased, bullied, ostracised, or rejected by their peer groups frequently

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show disruptive behaviour, enter into conflicts, damage property, cause injuries, engage in antisocial behaviour, or use foul language. On the other extreme, children may withdraw, become isolated, turn to the use of toxicants, and engage in self-injury. A large number of adolescents show adverse behaviour in matters concerning infatuation, rejection, or dating. Research data indicate that:

- The average age at which children have their first sexual encounter in India is 14 years.
- Occurrences of teenage pregnancy are becoming more common.
- Bullying is a key reason for skipping school.
- Substance abuse among school children begins at an early age (11 years).

Developmental Maladjustment Each developmental stage poses a unique set of difficulties. As children grow, their comprehension abilities, bodies, and emotions undergo changes. Without support, children may use faulty mechanisms to deal with changes, including nonparticipation, avoiding interactions and activities, skipping school, developing irrational fears, developing anxiety, eating too much or too little, and so on. Sometimes, they may have physical or biological problems that they do not understand, which leaves them confused and scared.

Medical research on childhood disorders estimate the incidence of developmental difficulties to range from 1%–10%. The World Health Organization estimates that 15%–20% of children, worldwide, have disabilities. A study published in the Indian Journal of Psychiatry regarding mental disorders in childhood and adolescents pegs the figure for India at 6%–15%.

According to an article in The News Minute, children as young as 5 years of age are becoming conscious of their skin colour, and insecurities related to appearance, complexion, body shape, weight, etc. are seen in children as young as eight years old in India. These lead to mental health issues later in life, the most common being eating disorders.

Problems Caused By the Family

The Competitive Parent Most families today pressurise their children to study and they supervise outdoor activities too little or too much. Parental anxieties are transferred to children, causing them to experience diffused tension, uncertainty, insecurity, a sense of inadequacy, and low self-esteem. Competitive parents also infuse in their children a sense of entitlement, a mercenary attitude, and little regard for others.

The Troubled Family Families today experience stress because of issues related to financial success, marital discord and/or divorce, being single-parent families, busy schedules, and having little support from relatives because families have shrunk. Parents try their hardest to cater to their children's needs against all odds—including managing personal work, expectations of in-laws, and health and financial issues—and they pay very little attention to their own needs and health. They have no mirror held up to them to provide them with the larger picture or perspective.

The Unaware Family Such families have few resources and little information or awareness about their children's stress and often fail to identify stressors in time in order to help regulate them. Parents may not have the time to stay in touch with their children's feelings; the available time may be spent discussing academics, classes, routines and schedules, and requirements. It may take parents a long time to notice changes in the behaviour or habits of their children.

Parents may also be too preoccupied to notice children's illnesses, both physical and psychological. By the time parents realise something is wrong, the illness may have already significantly affected the child's academic, social, or personal life, apart from its effects on self-esteem, self-image, and world view.

According to a *Times of India* report, self-harm is the top reason for adolescent or youth deaths in India, causing close to 60,000 deaths annually in the 15–24 years age group, a latest global study shows. It is also the biggest reason for disability among youths. The data shows that self-harm has increased rapidly over the last two decades, indicating a rise in stress, mental disorders, and changing lifestyle and behavioural patterns. Global studies show that at least 90% of teens who kill themselves have some type of mental health problem—such as depression, anxiety, drug or alcohol abuse—a behavioural problem, or have been victims of physical and/or sexual abuse.

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deaths annually in the 15–24 years age group.

The Unskilled Parent Parents grapple with frustration, despair, fear, anxiety, and helplessness when it comes to raising children. Many parents approach child-rearing instinctively, which actually means that they reproduce their parents' styles of parenting. They use old solutions to old problems and are completely at a loss when faced with new problems. They believe that their role is limited to providing food, clothing, and shelter, and that other aspects get taken care of automatically, just as they did when they were children themselves.

The Antisocial Family Family members who are involved in unsuitable or inappropriate activities may not always realise the impact their behaviours have on children, or they may not care. Activities such as drinking, smoking, substance abuse, gambling, engaging in abuse and violence, using bad language, not being gainfully employed, or being involved in criminal activities such as stealing, exploiting, embezzlement, and fraud may cause stress in children, which is often ignored.

A 2007 study by the Ministry of Women and Child Welfare revealed that 69% of children reported having been physically abused. Of the children who were abused in family situations, 88.6% were abused by their parents.

Problems Caused by Technology

Current research indicates that technology directly impacts children's social behaviour and the development of social skills. Parents and teachers find themselves ill-equipped to guide children who have been exposed to technology from a young age and have learned to operate gadgets from when they were less than a year old (Patel 2017). A recent survey conducted by a cartoon channel in India revealed that 95% of kids live in homes with a mobile phone while 73% of Indian kids are mobile phone users. They are part of various social networking sites and are constantly in touch with peers. Without adequate social skills, children are vulnerable to online fraud, participating in fake relationships, cyberbullying, and other types of exploitation. Children have been known to harass others by posting incorrect or private information and photos on the internet. With these potential threats, children who are harassed may resort to extreme behaviours such as self-harm and suicide.

Children have access to pornographic material and information that is age inappropriate. Many cases

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90%

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have been reported of teenagers falling for honey-traps, which leads to blackmail, eloping, abuse, and stealing. One of the most heinous drawbacks of internet access and engaging with the wrong people is that children may be filmed to make pornographic movies and videos; further, they may be blackmailed into engaging in further harmful and criminal behaviours using these videos.

Children's abilities to judge people and discern false identities are yet undeveloped. Exposure to media and technology has also had an adverse impact on children's health, social skills, moods, and participation in routine activities necessary at their age such as sports, interaction, and outdoor activities.

Psychiatrists across the world are treating internet addiction and an obsession with taking selfies as clinically diagnosable conditions. Statistically, the top reason for death among teenagers is car accidents; many of these are related to texting or talking on their mobile phones while driving (in addition to drinking).

Why School Counselling?

All the above issues are difficult to locate in family systems; therefore, the school becomes the ideal institution in which stress can be prevented, identified, and remediated. Students' behaviour, academic performance, and social adjustment in school make it possible for professionals to identify red flags early.

A comprehensive school counselling programme is an integral component of the school's academic mission. Data-driven comprehensive school counselling programmes promote and enhance the learning process for all students. Effective school counselling programmes are a collaborative effort between the school counsellor, parents, and other educators to create an environment that promotes student achievement. Staff and school counsellors value and respond to the diversity and individual differences in our societies and communities. Comprehensive school counselling programmes ensure equitable access to opportunities and a rigorous curriculum for all students to participate fully in the educational process.

According to the American School Counselors' Association, a comprehensive school counselling programmes is systematic, sequential, clearly defined, and accountable. It should be proactive and preventive in focus. It is founded upon developmental psychology, educational philosophy, and counselling methodology. School counselling programmes should employ strategies to enhance academics, provide career awareness, encourage self-awareness, foster interpersonal communication skills, and impart life success skills for all students. At the foundation of the school counselling programme is the delivery of counselling, consultation, coordination, and advocacy services to all students, parents and the school community. Individual and group counselling, classroom guidance, consultation, including meeting with parents, teachers, administrators, staff and community members, and coordination of special programmes and initiatives are integral parts of all school counselling programmes (ASCA 1994).

Individual and group counselling, classroom guidance, consultation, including meeting with parents, teachers, administrators, staff and community members, and coordination of special programmes and initiatives are integral parts of all school counselling programmes.

Some benefits of in-house school counsellors are:

Early Identification Stressors related to illness, technology, and family issues are easily evinced in school. Since schools have a large number of children of similar age, any deviant behaviour is immediately evident. Teachers often describe children exhibiting these behaviours as disobedient, careless, nervous, clumsy, aggressive, distracted, or unmanageable. Their approach to these behaviours largely revolves around control. While educators are well positioned to identify students with difficulties, they rarely do so. This is because they lack the knowledge, skills, and right approach to address developmental issues.

School counsellors are trained to identify a variety of deviant behaviours and diagnose children so that proper treatment can be provided. Common disorders seen in schools are autism spectrum disorder (ASD), attention-deficit/hyperactivity disorder (ADHD), learning disabilities (e.g., dyslexia), intellectual disabilities, anxiety and depressive disorders, abuse and neglect, communication and motor disorders, and even some physical and/or genetic disorders. School counsellors can provide crucial interventions, which can make a huge difference in children's abilities in successfully dealing with their issues.

Prevention Experience in the formative years can have a life-long impact on children. They affect the choices children make in life, including those related to their careers, marriages, personal habits, socialisation, citizenship, and environmental contributions. The World Health Organization (WHO) has identified key skills for adolescents, which are essential for successful lives. They are:

- Problem-solving and decision-making skills
- Developing critical and creative thinking skills
- Communication and interpersonal skills
- Self-awareness and empathy
- Coping with stress and emotions

Students in the age group of 10–16 years undergo tremendous issues.

Counsellors help students develop self-help skills and coping mechanisms, build a strong support group amongst their families and at school, and prioritise what is important in the context of their futures.

Students in the age group of 10–16 years undergo tremendous issues; their well-being (present and future) is inextricably linked to how well they cope with the stressors associated with adolescence, along with the academic pressure of external board examinations. Without adequate professional support, many students fall to the side lines—their inherent potential and capabilities get wasted due to a lack of awareness, poor self-management, and mental confusion. Counsellors can provide the much needed emotional support that students require to make a smooth transition into this stage of their lives. Their interventions help students develop self-help skills and coping mechanisms, build a strong support group amongst their families and at school, and prioritise what is important in the context of their futures. School counsellors arrange life skills programmes and other information sessions that help students. They also organise preventive programmes that help sensitise people in the school environment and educate students on how to navigate their technological, social, and personal choices. Without intervention, students may develop distorted thinking, faulty coping mechanisms, misbehaviours stemming from their feelings of guilt and shame, and unresolved relationship issues.

Counsellors help replace the concepts of punishment with empathy, emotional intelligence, and maturity, and academic pressure with all-round development.

Counselling School counsellors provide counselling programmes in three domains: academic, career, and personal/social. Their services and programmes help students resolve emotional, social, or behavioural problems and help them develop a clearer focus or sense of direction. Effective counselling programmes are important in the school climate and are crucial to improving student performance. In India, school counsellors provide the following services:

- Train parents and teachers to identify signs of stress and distress in children.
- Empower parents and teachers with the necessary knowledge and skills to understand and manage children's issues.
- Guide school authorities in creating sensitive environments for the students.
- Provide activities and programmes for students' social and personal development via expert lectures, life skills education, and awareness workshops.
- Provide assessment services for student's cognitive, social, and personality development.
- Aid diagnosis and make referrals to professionals, such as psychiatrists, paediatricians, and occupational therapists.
- Hold planned interventions to help children build skills related to self-regulation, emotional management, stress management, relationship management, school–life balance, and coping skills to handle loss, grief, and personal disabilities.
- Strengthen bonds between parents, teachers, and students to create a strong support system that works coherently.

School and Family Support

Often, when children are in distress, well-meaning parents and teachers can confuse matters further. Inexpert handling of children's issues leads them to reinforce incorrect behaviours and develop a faulty self-image, causing them to underestimate their capabilities; further, this may delay much needed professional intervention. When problems in children are identified, adults need to provide emotional support and engage in active interventions. This support may include restructuring daily schedules, redefining goals, organising visits to the doctor and providing access to medication, and so on.

Depression among youths has increased from 2% to 12% in the last five years.

School counsellors help parents understand their child's difficulties, plan interventions for the child's academic, social, and emotional needs, organise resources, involve family members, and guide them in planning for the child's future and building skills to manage their child's life.

Counsellors help schools plan the integration and mainstreaming of children with difficulties so that they experience no stigma, discrimination, or victimising. Schools can do a lot to help children with problems cope, including modifying time schedules, choice of subjects, and evaluations, applying due provisions in examinations, planning seating and socialising, and training teachers to handle special children in the classroom.

Counsellors help replace the concepts of punishment with empathy, emotional intelligence, and maturity, and academic pressure with all-round development. A 2007 study by the Ministry of Women and Child Welfare showed that two out of every three school-going children reported facing corporal punishment. Creating a sensitive school environment is a large part of the counsellor's role.

Global Impact Studies

Global impact studies show that:

- Schools with counselling programmes had students who were more likely to report that (a) they had earned higher grades; (b) they felt that their education was better preparing them for the future; (c) their school made more career and college information available to them on careers and colleges; and (d) their school had a more positive climate (greater feelings of belonging and safety at school, classes less likely to be interrupted, and peers behaving better) (Lapan, Gysbers, and Sun 1997). After removing the variables of school enrolment size, socioeconomic status, and the percentage of minority students in attendance, positive programme effects were identifiable (Lapan, Gysbers, Sun, 1997).
- A study on the effects of counselling on classroom performance shows that under-achieving students who received counselling improved significantly on the Self-Rating Scale of Classroom Behaviour and in their mathematics and language arts grades (Gerler, Kinney, and Anderson 1985).
- Studies on high school attrition rates indicate that preventative counselling, occurring before students are in crisis, reduces the risk of these students dropping out later on (Bearden, Spencer, Moracco, 1989).
- A study done in Georgia shows that school counsellors impact students' academic performance and can increase students' on-task productivity and reduce disruptive behaviours (Mullis and Otwell 1997).
- School counsellors have proven effective in preventing students from committing suicide (Jones 2001).

10% of the child population is in need of special care and treatment.

Only 1/100 get the treatment they need.

Status in India

School counselling in India is not a recent phenomenon—the first Child Guidance Clinic was started in 1938 by the Tata Institute of Social Sciences at Wadia Hospital. The Ministry of Education, Government of India, established the Central Bureau of Educational and Vocational Guidance in 1954. By 1966, a meagre 3,000 schools across the country had a "career master", whose was tasked with guiding students' educational choices. The first school mental health clinic was set up at Nair Hospital in 1979. Unfortunately, progress since these beginnings has been slow. School counselling is now largely limited to career guidance and vocational training. Although a few schools, such as the Bombay Cambridge School at Andheri West, have started counselling centres, they were not easily accepted by either parents or teachers. The stigma associated with "mental problems" was too high, and counselling centres were rejected outright. Common methods of dealing with students' underperformance or bad behaviour were (and still are) corporal punishment, humiliation, verbal abuse, rustication, detention, and threats.

As of 2015, statistics indicate a sorry state of affairs:

- Ten percent of the child population is in need of special care and treatment. Only one in 100 get the treatment they need.
- According to psychiatrist, Dr Harish Shetty, only about 5% of schools in Mumbai have a counseling facility.
- Only 3% of schools in Delhi provide counselling services (Hindu 2014).
- According to an epidemiological survey by the Indian Council of Medical Research, the prevalence of mental health problems among children in the age group 0–16 years is 12.5%.
- Depression among youths has increased from 2% to 12% in the last five years.

While some private schools do make the effort to include counselling services, the sustainability of this endeavour seems difficult, considering issues of finance, accountability, and a lack of impact studies. While the country's 188,000 private primary-secondary (day, boarding, and international) schools are becoming more aware of the need to address the emotional well-being of students, there is little

awareness about the value of counselling in the government school network. The 135 million children enrolled in 1.09 million government schools countrywide are deprived of mental health support programmes (Kodad and Kazi 2014). There is an urgent need to provide counselling services to the 1,000,000-plus government schools, 509 universities, and 31,000 colleges in India. Issues related to government will, financing, accountability, and a lack of impact studies obstruct the establishment of counselling services. Meanwhile, there is a desperate need for support and guidance for children transitioning through developmental stages and facing issues that are environmental and biological in nature. In 2013, the Andhra Pradesh Government made school counselling mandatory for all schools. The Maharashtra Government has not yet taken a stand, despite growing insistence from educationists, doctors, and activists. Two establishments that have successfully run professionally managed mental health services for students are the Bombay Cambridge schools in Mumbai and the Kaveri Institutes in Pune.

Setting Up a Counselling Centre

Typically, while staffing a counselling centre, one needs to plan for a 500:1 student–counsellor ratio. The centre itself requires space (for cubicles), materials for assessments and play, and stationery. The costs, as worked out by noted psychiatrist, Dr. Harish Shetty, do not exceed ₹50 per student per month; the standard salary for a counsellor is approximately ₹20,000 per month. School counsellors are required to have master's degrees in counselling or developmental psychology, or a professional equivalent. Foundations that support quality education and student care basically need to provide:

1 Infrastructure to set up the centre
2 Access to and appointment of trained staff
3 Guidelines (or manual) for supervision, accountability, and research

Counselling centres also need to engage the services of special educators who are experts in handling learning difficulties.

According to one widely used estimate referred to by UNICEF, some 93 million children—or 1 in 20 of those aged 14 or younger—live with a moderate or severe disability of some kind. Children with disabilities are more vulnerable to physical, sexual, and psychological abuse and exploitation than non-disabled children. Social isolation, powerlessness, and the stigma faced by children with disabilities make them vulnerable to violence and exploitation in their own homes and in other environments such as care centres or institutions. Research shows that children with disabilities are three to four times more likely to experience violence than their non-disabled peers.

History is replete with examples of school dropouts, those with social maladjustment, and people who are "different"—these people have made history with their contributions.

Special children may form a mere 10% of any population, but they are the most vulnerable. They are at risk in terms of the future ahead of them, the contributions they can make to society, the level of safety they can feel, and the possibility of the environment around them turning adversarial. Their only shortcoming is that they are different—a label that can just as effectively be a gift or something positive. With some timely help, all the negatives can be transformed and children's special abilities can be made productive and, indeed, turn into creative participation. History is replete with examples of school dropouts, those with social maladjustment, and people who are "different"—these people have made history with their contributions. In our schools, there might be an Albert Einstein, Newton, Tom Cruise, Alan Turing, or Stephen Hawking; but will we recognise them?

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Community Participation in the Universalisation of Equitable Quality School Education

NIRANJANARADHYA VP

Introduction

Mahatma Gandhi wanted India to be a decentralised democracy. He told Louis Fischer, the eminent American publicist, that "there are seven hundred thousand villages in India each of which would be organised according to the will of the citizens, all of them voting. Then there would be seven hundred thousand votes and not four hundred million votes. Each village, in other words, would have one vote. The villages would elect the district administration; the district administrations would elect the provincial administration and these in turn would elect the President who is the head of the executive" (Dharampal 1962).

The Government of India appointed the Balwant Rai Mehta Committee in January 1957 to examine the implementation of the Community Development Programme and the National Extension Service and to suggest measures to better their working. The recommendations of the committee were approved by the National Development Council (NDC) in January 1958, setting the stage for the launch of Panchayati Raj institutions throughout the country. The committee recommended decentralising governance through a scheme which finally came to be known as the Panchayati Raj System.

Establishing the three-tier Panchayati Raj system entailed setting up gram panchayats at the village level, taluk panchayats at the block level, and zilla

Community involvement would thus establish a close linkage between the school and the community and help in improving the quality of education and reducing absenteeism and irregularity.

The National Curriculum Framework (NCF) 2005 emphasises community participation as a means to enhance quality and accountability. The framework also suggests that parents and other community members should engage with schools as resource persons by sharing their knowledge and experiences in relation to the topics being studied.

panchayats at the district level. During the 1950s and 1960s, laws were passed to establish panchayats in various states. The programme also found backing in the Indian Constitution with the 73rd Amendment in 1992. The amendment contains provisions for the devolution of powers and responsibilities to the panchayats for preparing economic development plans, ensuring social justice, and implementing programmes related to the 29 subjects listed in the Eleventh Schedule of the Constitution, including primary and secondary education.

The idea that community participation is integral to education gradually became the norm in policy-making. In 1966, the First Education Commission, popularly known as the Kothari Commission, clearly spelt out the need for decentralising school education and involving local bodies in school improvement. According to the commission, the immediate goal was to involve communities in the administration of schools in their locality (GoI 1970). The idea that community participation can be a primary strategy for ensuring the decentralisation of school education received another boost with the adoption of the National Policy on Education, 1986.

The policy emphasises community involvement in education management. It states that through appropriate bodies, local communities can play a major role in school management. Community involvement would thus establish a close linkage between the school and the community and help in improving the quality of education and reducing absenteeism and irregularity.

The Declaration of the World Conference on Education for All, Jomtien (1990), has provided a great deal of momentum to the community participation movement across the globe. Paragraph 35 of the declaration states that community associations, cooperatives, religious bodies, and other non-governmental organisations also play an important role in supporting and providing education. Their experiences, expertise, energy, and relationships with various constituencies are valuable resources for identifying and fulfilling basic learning needs. Their active involvement as partners in basic education may be promoted through policies and mechanisms that strengthen their capacities and recognise their autonomy.

In 2000, the Dakar Framework for Action spelt out the prerequisites for community participation in education. It states that learners, teachers, parents, communities, non-governmental organisations, and other bodies representing civil society must be granted new and expanded political and social scope at all levels of society to engage governments in dialogue, decision-making, and innovation around the goals of basic education. Civil society has much experience in this sector and, therefore, plays a crucial role in identifying barriers to Education for All (EFA) goals and developing policies and strategies to remove them.

The policy also states the importance of going beyond symbolic participation. It emphasises that such participation, especially at the local level, i.e., the partnerships between schools and communities, not be limited to endorsing the decisions of, or financing the programmes designed by, the state. Rather, at all levels of decision-making, governments must put in place regular mechanisms for dialogue that will enable citizens and civil society organisations to contribute to the planning, implementation, monitoring, and evaluation of basic education. This is essential to foster the development of accountable, comprehensive, and flexible education management frameworks. In order to facilitate this process, capacity-building is necessary in civil society organisations.

The National Curriculum Framework (NCF) 2005 is a principal document which provides the framework to evolve a national system of education. It emphasises community participation as a means to enhance quality and accountability. The framework also suggests that parents and other community members should engage with schools as resource persons by sharing their knowledge and experiences in relation to the topics being studied.

Keeping in view these policy recommendations at both the national and international level, the government established Village Education Committees (VECs) in all elementary schools under the District Primary Education Programme (DPEP). These are statutory bodies that oversee the educational development of children in village schools. The role of VECs is vital in promoting enrolment, retention, performance, and school effectiveness. Although VECs have been constituted in almost all schools, their effectiveness is still to be ensured. Nevertheless, their role in promoting universal elementary education is worth noting.

Community participation at the grassroots level is essential for the successful implementation of any programme. The Sarva Shiksha Abhiyan programme is also an attempt to provide all children with the opportunity to improve their capabilities through community-owned, quality education.

Community Participation and Sarva Shiksha Abhiyan (SSA)

Community participation at the grassroots level is essential for the successful implementation of any programme, and the universalisation of elementary education is no exception. Under Sarva Shiksha Abhiyan (SSA), concerted efforts have been made to mobilise local communities to promote education, help in the development of educational facilities, and oversee the functioning of schools in every state. The SSA programme is an effort to universalise elementary education through community ownership of the school system. It emerged in response to the demand for quality basic education all over the country. The SSA programme is also an attempt to provide all children with the opportunity to improve their capabilities through community-owned, quality education.

For this to happen, bodies such as village education committees, school management and development committees, urban slum-level education committees, parent teacher associations, school development and monitoring committees, mothers' committees, etc., have been set up at the village or school level in most states. Their roles and functions have been defined clearly, and efforts have been made to effectively involve them and other grassroots-level structures in the management of elementary education as delineated under the framework of SSA. This framework was amended in 2006 to ensure the centrality of panchayats in the supervision and monitoring of elementary education. Through this model, by-laws were created under legislations to link schools and VECs with the statutory standing/sub-committees of gram panchayats to ensure their overall supervision.

States have initiated policy reforms and programme interventions in this regard. SSA provides for training and capacity-building of members of state education committees.[1] Its norms provide for the training of four persons in a village plus two persons per school for two days in a year. Other programmes, such as the

1 The term "education committee" includes village education committee (VEC), parent-teacher association (PTA), school development monitoring committee (SDMC), Vidyalaya Shiksha Samiti (VSS), Vidyalaya Kalyan Samiti (VKS), etc. These bodies are entrusted with the task of management and supervision of elementary schools under SSA.

The Constitution
(Eighty-sixth Amendment) Act, 2002
12 December 2002

An Act further to amend the Constitution of India

BE it enacted by Parliament in the Fifty-third Year of the Republic of India as follows:

1 Short title and commencement.
a. This Act may be called the Constitution (Eighty-sixth Amendment) Act, 2002.

b. It shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint.

2 Insertion of new article 21A.
After article 21 of the Constitution, the following article shall be inserted, namely:
Right to Education
"21A. The State shall provide free and compulsory education to all children of the age of six to fourteen years in such manner as the State may, by law, determine."

3 Substitution of new article for article 45.
For article 45 of the Constitution, the following article shall be substituted, namely:
Provision for early childhood care and education to children below the age of six years.
"45. The State shall endeavour to provide early childhood care and education for all children until they complete the age of six years."

4 Amendment of article 51A.
In article 51A of the Constitution, after clause (J), the following clause shall be added, namely:
"(k) who is a parent or guardian to provide opportunities for education to his child or, as the case may be, ward between the age of six and fourteen years."

National Programme for Education of Girls at Elementary Level (NPEGEL), also provide funds for intensive community mobilisation in educationally backward blocks, and to bring out-of-school girls into schools in urban slums. Community ownership is a strategy that is central to the SSA programme. States have been working in this direction for the last few years, but it is not known how effectively such institutions function and to what extent they have achieved the objectives for which they were created.

The Constitution (Eighty-sixth Amendment) Act, 2002

At the time it was drafted, the Indian Constitution mandated the provision of free and compulsory education to all children until the age of 14 years within ten years of its commencement as part of the Directive Principles of State Policy. This, however, was never actualised; the government cited the lack of adequate resources, but there was a fundamental lack of political will to initiate the necessary processes. Eventually, the Supreme Court intervened and interpreted the Right to Education as a fundamental right that was an extension of the Right to Life in 1992[2] and 1993.[3]

This historic supreme court verdict was followed by a peoples' campaign that compelled the central government to amend the Constitution of India. The 86th Constitutional Amendment Act, 2002, provided the status of fundamental right to the Right to Education for all children in the age group of 6–14 years. A new article to this effect, 21A, was inserted after Article 21 in the Constitution. Nearly seven years and multiple drafts later, the Right of Children to Free and Compulsory Education Bill was introduced in the Rajya Sabha on 15 December 2008 and was enacted into law after it was passed by both houses of the Indian Parliament and signed by the president of India. This law came into force from 1 April 2010.

The Right to Education Act (RTE) and School Management Committees (SMCs)

One of the core provisions under the Right of Children to Free and Compulsory Education Act 2009 (RTE Act) is the constitution of school management committees (SMCs), comprising parents and local authority representatives, in all schools except unaided schools. The act mandates that at least 75% of an SMC consist of parents. Additionally, proportionate representation is to be given to disadvantaged groups and weaker sections of society, including a minimum of 50% representation of women. The SMC is assigned the functions of monitoring the working of the school,

2 Mohini Jain vs State of Karnataka, AIR 1992 SC 1858.
3 Unnikrishnan JP vs State of Andhra Pradesh, 1993,1SCC 64.

School management committees have played a significant role in increasing access, enrolment, and retention, and in the overall monitoring of schools.

SMC Provision under the RTE Act

School Management Committee

Section-21(1): A school, other than a school specified in sub-clause (IV) of clause (n) of section 2, shall constitute a school management committee consisting of the elected representatives of the local authority, parents or guardians of children admitted in such school and teachers:

Provided that at least three-fourth of members of such Committee shall be parents or guardians.

Provided further that proportionate representation shall be given to the parents or guardians of children belonging to disadvantaged group and weaker section.

Provided also that fifty per cent of members of such Committee shall be women.

preparing school development plans, and monitoring the grants received from the state and local government. It is, furthermore, tasked with developing a school development plan which, as per subsection 22 (1), is to be the basis for any plans or grants to be made by the appropriate government or local authority as the case may be. It is crucial to note that this structure—unlike the majority of pre-RTE Act structures—is a legal entity with a degree of uniformity across the nation.[4]

4 See Sections 21 and 22 of the Right of Children to Free and Compulsory Education Act, 2009.

The Impact of Community Participation in School Education

The policies and legal changes around boosting community participation in the universalisation of equitable quality elementary education brought about a phenomenal change in the country. Community participation not only increases ownership, but it also empowers communities to take important decisions concerning the future of their children. It has been proven that when parents get involved in the education of their children, the children are motivated and perform better. Moreover, it ensures the sustainability of the processes adopted and innovations undertaken.

School management committees have played a significant role in increasing access, enrolment, and retention, and in the overall monitoring of schools. However, there is still a long way to go in relation to the committees' influence on classroom processes and quality education.

Scope for Support to Enhance Community Participation

Many research studies across the nation have demonstrated the vast potential of SMCs as statutory bodies under the RTE Act. Their role is closely connected with the effective implementation of the act. The state can work wonders in the area of elementary education provided that the mechanisms for the democratic constitution and functioning of this body are combined with adequate financial assistance and capacity-building. Given the importance of community participation, it is imperative to further capacity-building so that communities can take forward the agenda of universalising equitable quality education in India.

Funding for the above can be approached in several ways. Some suggestions are as follows:

- Fellowships for community ambassadors to mobilise and empower members of SMCs with the knowledge and skills necessary for more active, democratic, and collective participation at school-level meetings. This can begin with a few panchayats or wards and then can be extended to the block, district, and state levels.

Given the importance of community participation, it is imperative to further capacity-building so that communities can take forward the agenda of universalising equitable quality education in India.

- Intensive training for all members of SMCs on their roles and responsibilities under various policies and laws to ensure transparency and accountability in their functioning.
- Constituting SMC coordination forums at the panchayat, taluk, and district levels to bring about effective coordination between the community and the government.
- Supplementing existing support measures available to SMCs through reading material on their duties.
- Organising community conventions at the panchayat level as part of sensitisation programmes to popularise the concept of community participation.

NOTE

It is desirable to support academic and research institutions through field extension programmes in order to bring curriculum development, teacher training, conferences, and research into the ambit of working with communities.

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Gaps in the Public Teacher Education System and Opportunities for Non-governmental Organisations

HEMANGI JOSHI

Introduction

There are many factors responsible for the educational progress of children in schools, such as the availability of basic infrastructure, community participation in school processes, and accessibility and affordability of the school. However, the quality and extent of learner achievement is determined primarily by the content—such as curriculum, textbooks, and teaching and learning material—and the process of education, as designed by teachers. The purpose of this paper is to discuss inadequacies in teacher preparation.

This paper is based on various evaluation reports concerning District Institutes of Education and Training (DIETs) by the National University of Educational Planning and Administration (NUEPA), the National Council of Educational Research and Training (NCERT), and other organisations as well as the writer's experience of over fifteen years in the field (Government of India, 2012; MHRD, 2010; NCTE, 2009). It analyses the need for teacher education (TE) and the present state of systems available for the same. It goes on to discuss the need for engaging non-government players, and the channels through which they can contribute to TE, which is a mammoth task.

The purpose of this paper is to discuss inadequacies in teacher preparation.

Need for TE

National and state achievement surveys show that students' learning levels in schools are not satisfactory. These surveys have highlighted the gaps in students' knowledge of school subjects. For example, Class 5 students were tested on a range of reading skills and only 40% to 54% of students could give correct answers. In mathematics, students' proficiency in a range of mathematical domains (the number

Low learning levels in school is directly linked to teaching and learning processes in the classroom. For teachers to participate in building schools they require support to develop their professional capacities.

system, basic operations, measurement, geometry, and patterns) and cognitive processes were tested. The percentage that selected correct answers ranged from 51% to 54% (NCERT, 2012).

The Maharashtra State Learning Achievement Survey (SLAS) 2013–14, conducted by the Maharashtra State Council of Educational Research and Training (MSCERT), shows that Class 5 students scored an average of 53.48% in Marathi and 50.76% in mathematics (MSCERT, 2014). The Annual Status of Education Report (ASER), 2016, shows that in India, only 47.8% of Class 5 students and 73% of Class 8 students are able to read paragraphs (ASER Rural 2016). The results are even poorer in the area of arithmetic skills—tests show that only 38.2% and 38.7% of children from Classes 5 and 8 respectively recognised numbers 10–99; only 18.9% and 32.9% of Class 5 and 8 students respectively could do division.

Low learning levels in school is directly linked to teaching and learning processes in the classroom. The Yashpal Committee Report (1993), *Learning without Burden*, also notes the connection between learning in schools and teacher preparation: "inadequate programmes of teacher preparation lead to unsatisfactory quality of learning in schools" (Aggarwal, 1993). For teachers to participate in building schools that are places of learning, they require support to develop their professional capacities. Even in a digital classroom, it is the teacher who organises learning experiences suitable to the children's needs and capacities. She facilitates the teaching and learning process.

The Kothari Commission (1964–66) and the National Policy on Education, 1986, strongly argue in favour of investing in teacher education. The Right of Children to Free and Compulsory Education (RTE) Act, 2009, shows the political commitment of the government towards education for all. However, "…the goal of achieving universalisation of elementary education is likely to remain elusive unless the centrality of the teacher is recognized in the process of educational reforms" (Department of School Education and Literacy, 2011).

TE in India: Status and Issues

Teacher Education in India Since Independence: A Historical Overview

Recognising the need for teacher education in India, a robust government system for the same has been developed since Independence. The 1948 University Education Commission; 1952 Secondary Education Commission; 1964 Indian Education Commission; National Commission on Teachers, 1983–85; the National Policies on Education, 1968 and 1986; the reviews of these policies; and the Planning Commission have all provided a fillip to teacher education by treating it at par with other sectors of education (Arora and Panda, n.d.).

The establishment of NCERT in 1961; National Council of Teacher Education (NCTE) in 1973, which was granted a statutory status in 1993 by the Parliament of India; State Councils for Education Research and Training (SCERT) in various states in 1971; and Regional Institutes of Education in 1963 at five locations in the country is evidence of the importance that TE receives.

In 1992, following the adoption of the National Policy on Education (NPE), 1986, by the Government of India, a decentralised system for professionally training teachers was established. The NPE envisages teacher education as a continuous process comprising pre-service and in-service training as inseparable components.

The RTE Act, 2009, which became operational from 1 April 2010, has important implications for teacher education. It makes the central and state governments responsible for developing and enforcing standards for teacher training; providing technical support and resources for innovation and research; providing training facilities for teachers; ensuring that teachers acquire minimum educational qualifications; and notifying academic authorities.

Present Institutional Mechanisms for Teacher Education

There are 1,449,078 primary and higher secondary schools in India, of which 74.3% are government schools, 23% are private schools (including self-financed and government aided), and the remaining 0.7% are unrecognised and Madrasa schools (NUEPA, 2017). The following institutional structures operate at the national and state levels to provide pre- and in-service training to elementary and secondary school teachers. They also provide academic resources to elementary and secondary schools and function with the broad objective of improving the learning levels of school children.

Pre-service Training

The National Council for Teacher Education (NCTE), a central government body, is responsible for the development of teacher education in the country. The NCTE lays down norms and standards for various teacher education courses; minimum qualifications for teacher educators; course content; and duration of training and minimum qualifications for the entry of student–teachers into these courses. It also grants recognition to government, government-aided, and self-financing institutions interested in offering such courses and has in-built mechanisms to regulate and monitor their quality.

This table presents data on TE institutions in Maharashtra and their approved intake. It is evident from the table that the main provider of pre-service training for teachers is the private sector. This is also the case in the rest of the country. After the NCTE was set up in 1993, the number of TEIs exploded, to about 16,000 (over 90% private) by 2011. This increased the supply of teachers (Behar, 2017).

According to the NCTE website, there are currently 11,010 TE institutes in the country that offer diplomas in education (D.Ed.) that qualify individuals to teach

The National Policy on Education envisages teacher education as a continuous process comprising pre-service and in-service training as inseparable components.

TABLE 1: **Institutions providing pre-service teacher education in India**

Maharashtra	Government Institutions		Private Institutions	
Course	Number of Institutions	Approved Intake of Students	Number of Institutions	Approved Intake of Students
D.Ed. (Elementary)	757	49,089	4,831	298,278
B.Ed. (Secondary)	224	20,031	5,730	609,486
M.Ed.	102	3,672	790	25,285
B.P.Ed	19	1,284	538	28,150

SOURCE: GoI MHRD guidelines on TE, 2012

in primary schools (Classes 1–5), and Bachelor of Education degrees (B.Ed.) that qualify individuals to teach in upper primary and secondary schools (Classes 6–10). B.Ed. and D.Ed. programmes typically run for one and two years, respectively.

Issues in Pre-service TE

While hearing a case regarding the erroneous approval of 291 D.Ed. colleges by the NCTE in 2011, the Supreme Court (SC) established a high-power commission, under the leadership of the late Justice J.S. Verma, to review the TE system. The commission suggested a complete overhaul of the TE system, including its regulatory, institutional, and educational aspects. Its report is a first-of-its-kind, in-depth study of pre-service TE. Some of its observations are as follows:

- *Quality of curriculum content*: Most teacher education programmes (such as B.Ed. and D.Ed. degrees) do not adequately engage with subject knowledge. Teachers are not exposed to the idea that a layered understanding of the subject can influence pedagogic encounters and influence learning. Most teacher education programmes package fragmented knowledge unrelated to the ground realities of classroom practice. Often, the methods taught are made to appear to apply to all school subjects with little connection to the subject being taught.
- Sound pedagogy involves integrating knowledge about learners, and of the subject, with that of the socio-cultural context and philosophical basis of education and learning. Current programmes fail on two counts: lack of engagement on each of these in depth and in a meaningfully integrated manner.
- Current teacher education programmes pay more attention to the forms of arrangement of courses rather than their content. As a consequence, student teachers spend hours decorating their lesson plans rather than reading and reflecting on what to teach, why, and how.
- Currently, student teachers enrolled in teacher education programmes rely on low-quality literature. There is an urgent need to replace such literature with authentic reading material in education. These need to be made available in English and the languages of the students across the country.
- The eligibility criteria for enrolling in the D.Ed. programme is clearing the Class 12 exams, while the minimum qualification for a B.Ed. is an undergraduate degree in any stream. The Justice Verma Commission report aptly observes, "the plus two entry level does not equip prospective teachers with the basic knowledge of the subjects to teach… Neither does the short duration of the course equip them with the necessary pedagogic knowledge…" (Justice Verma Report, 2012).

However, Anurag Behar notes that "other than on the most innocuous of recommendations, nothing really happened. The majority of dysfunctional TEIs are owned by people with significant political and financial capital, the TE mafia. Taking on this mafia required doggedly energetic execution and political will, which wasn't there." He further states, "In every other aspect, the NCTE was a colossal failure" (Behar, 2017).

Currently, student teachers enrolled in teacher education programmes rely on low-quality literature. There is an urgent need to replace such literature with authentic reading material, made available in English and the languages of the students across the country.

Teacher Eligibility Tests

The central and state governments instituted teacher eligibility tests (TETs) that candidates must pass to teach in a school. Average performance in TETs nationwide tend to be poor (pass percentage of 2%–8%), and thus point towards the poor quality of pre-service teacher education.

TABLE 2: **Decentralised system for in-service teacher education in the states**

Level	Institutions	Number
State	State Council of Educational Research and Training (SCERT) and State Institute of Education (SIE) (one in each state)	36
District	District Institutes of Education and Training (DIETs) (one per district)	648*
Block	Block resource centres (BRCs) (five per block)	6,472**
Cluster	Cluster resource centres (CRCs) (one for 12–15 schools)	69,268**

SOURCE: *NCTE, **TE India, *** Role of BRC and CRC, 2010

The reasons for poor-quality pre-service TE, according to various reports, are teacher education practices; curriculum design; proliferation of sub-standard, private teacher education colleges; lack of professional development opportunities for teacher educators; paucity of talented faculty with disciplinary specialisations; low-quality study material; and many others.

The total number of teachers in the country is estimated to be 80,76,756

In-service Training

The total number of teachers in the country is estimated to be 80,76,756 (NUEPA, 2017). India has a large network of government-owned Teacher Training Institutions (TTIs) that provide in-service training to school teachers. The spread of TTIs is both vertical and horizontal. At the national level, the NCERT, along with its five regional institutes of education (RIEs), prepares modules for teacher training courses and offers training programmes for teachers and teacher educators. NUEPA also provides institutional support in organising pre-service and in-service training programmes in the area of educational planning and administration and allied disciplines; Both NCERT and NUEPA are national-level, autonomous bodies.

State governments are primarily responsible for providing teacher training. A decentralised system is used to provide TE to in-service teachers.

At the state level, the SCERT prepares modules for teacher training and conducts specialised courses for

India has a large network of government-owned teacher training institutions (TTIs) that provide in-service training to school teachers.

teacher educators and school teachers. The Colleges of Teacher Education (CTEs) and Institutes for Advanced Learning in Education (IALSEs) provide in-service training to secondary and senior secondary school teachers and teacher educators. At the district level, DIETs offer in-service training. Block resource centers (BRCs) and Cluster Resource Centers (CRCs) form the lowest rung in the institutional framework for in-service training of school teachers.

Issues Associated with In-service TE

Creating such a widespread network is an achievement in itself. However, there are several problems inherent in the system.

DIETs

DIETs were envisioned in the National Policy of Education, 1986, and were established by the

Ministry of Human Resource Development (MHRD) in the early 1990s to strengthen elementary education and decentralise education to the district level. DIETS primarily aim to support elementary and secondary school teachers by providing training, engaging in research and experimentation, and developing institutional infrastructure for pre- and in-service training.

However, DIETs are not equipped to provide the ground-level support required for the professional development of teachers. Infrastructural, financial, and recruitment-related issues hinder DIETs from performing their role efficiently and they remain largely dependent on SCERTs. The principle of decentralising education, which was envisaged at the time the DIETs were set-up in the early 1990s, can only be achieved if they are ensured autonomy. Nevertheless, DIETs can yet play a key role in universalising quality education. The MHRD has taken efforts to enhance their capacities after reviewing the reports and recommendations of various committees.

BRC and CRC

Block Resource Centres (BRCs) and Cluster Resource Centres (CRCs) shift the emphasis from inspections to resource support, in-service training, mentoring, on-site support, and training follow-up. School improvement is considered an integral part of their work. Each CRC monitors a small number of schools. Cluster Resource Persons (CRPs) are expected to visit schools frequently and observe classes to provide on-site academic support. They also disburse academic resources including Information and Communication Technology (ICT), science and math kits, and teaching and learning material.

However, CRPs are often unable to guide schools and teachers as they are overloaded with administrative work, such as gathering various data from schools, compiling and consolidating it, checking and correcting inaccuracies, and relaying the data to the block and district administration. Inadequate infrastructure, insufficient autonomy, lack of recognition for good work, and a lack of transport facilities adversely affects the performance of BRC and CRC functionaries. Some problems at the CRC level include insufficient capacity-building of coordinators, poor subject knowledge and mentoring skills, unwillingness of teachers to adopt innovative teaching methods, and CRC coordinators' low confidence in teachers' capabilities. The MHRD has commissioned various studies to improve the status of BRCs and CRCs, but these recommendations are yet to be fully implemented. Considering their importance in the decentralised structure, it is vital that they collaborate with the government to improve the quality of education in India.

On a per school average, teachers hired by private schools is

9.5 vs 4.3

hired by government schools. Government training centres at the state, district, and block level do not cover private school teachers in any of their training programmes.

Inadequate Systems for Unaided Private School Teachers

The number of private schools in India has increased exponentially—out of the total 1,449,078 schools in India, 23% are unaided private schools. Of India's students, 39% are enrolled in private schools. Private schools hire 9.5 teachers per school on average, as against 4.3 teachers hired by government schools. These figures show that private schooling is a growing trend. However, it is important to note that government training centres at the state, district, and block level do not cover private school teachers in any of their training programmes. There is a complete lack of policy support for the training of unaided private school teachers.

Non-government Agencies as Provider of TE

The non-governmental sector, though on the small scale, is also playing an important role in creating new models for education delivery, particularly in the area of teacher capacity development. Examples are listed in the paper elsewhere.

Suggested Role of Civil Society Organisations and Not-for-Profit Foundations to Strengthen TE

Vision for TE

The Supreme Court, in 2016, while delivering a judgment on capitation fees at colleges, noted categorically that the commercialisation of the education sector is not permissible and put the onus on the government to curb malpractices. It ruled that capitation fees as charged by educational institutes is illegal. The RTE Act, 2009, promises free education to all children aged 6–14 years. It prohibits private schools from collecting capitation fees and conducting screening procedures. Many states, such as Tamil Nadu, Rajasthan, Maharashtra, and Gujarat, have passed acts establishing government bodies to monitor school fees. Schools are not permitted to profit from providing education and are obliged by law to be run as non-profit, charitable organisations. Therefore, civil society TE interventions must act as providers of free or reasonably-priced quality education for educators, instead of promoting education as business. Discourse in the area of TE need to focus on strengthening state institutions by either identifying possible collaborations with them or by facilitating the creation of complementary initiatives that promote the spirit of free school education.

It must be noted that the government operates the most widespread and established system of TE in the country. Apart from some small scale and sporadic efforts by NGOs, there are no non-government players who provide in-service TE. Despite several flaws and weaknesses in the government TE system, it appears to be making efforts to address them by forming various commissions and inviting recommendations.

The government operates the most widespread and established system of TE in the country. Despite several flaws and weaknesses in the government TE system, it appears to be making efforts to address them by forming various commissions and inviting recommendations.

Not-for-profit foundations can contribute meaningfully by collaborating with i) government institutes at the state, district, and block levels; ii) NGOs involved in TE; iii) universities and research institutes; and iv) schools for the continuous professional development of their teachers.

Suggested Practices for Influencing Government TE Structures and Programmes Through NGOs

Though the state plays a vital role in providing in-service teacher education, the contribution of the non-governmental sector cannot be denied. It plays an important role in creating new models of education delivery, particularly in the area of teacher capacity development. Listed below are some models of collaboration between non-government agencies and the government:

- In Chhattisgarh, DIET and SCERT faculty members, along with resource persons from NGOs and institutes such as Azim Premji Foundation (APF), Bangalore, and HBCSE, Mumbai, collaborated to redesign their D.Ed. programmes in three major areas: course content, nature of transaction, and school experience (Misra, 2012).

- The MA (Education) programme at TISS was collaboratively created by TISS, Mumbai; HBCSE, Mumbai; Vidya Bhawan Society, Udaipur; Digantar; Jaipur, Eklavya; Bhopal; and the National Institute of Advanced Studies (NIAS), Bangalore. These organisations have significantly contributed to the field of elementary education in terms of research and innovative practices, which is reflected in the vibrant curriculum of the programme. Professionals from these organisations and other experts in the field contribute to teaching in the programme (TISS, n.d.).

- Eklavya, a Bhopal-based organisation, worked with NCERT in developing the National Curricular

Framework (NCF) 2005 and the textbooks, resource materials, etc. that emerged from it. It aided the development of NCF for Teacher Education, 2009, and a model DEd syllabus based on it. It is working with the governments of Chhattisgarh, Rajasthan, and Madhya Pradesh to carry this reform forward. The creation of learning materials for DEd student–teachers is also being planned (Eklavya, n.d.).

• Digantar, an NGO based in Jaipur, has been organising a Certificate Programme in Foundations of Education since August 2005. The programme is an attempt to situate teaching practices within the realms of theory by inculcating in students an understanding of the larger sociological, philosophical, and psychological concepts that underlie the educational endeavour. Those working in the education sector—including teachers—may take up this programme (Digantar, n.d.).

• The Mumbai-based Centre for Equity and Quality in Universal Education (CEQUE) offers professional programmes for cluster resource persons (CRPs), who are at the lower rung of the decentralised government TE system, with a focus on developing their mentorship skills. The course aims to teach them to assess teachers, coach them on effective lesson planning and delivery, and finally, on how to work towards professional development in their clusters. The organisation also offers free online resources and social learning platforms for teachers. It offers a large repository of short, high-quality videos of effective teaching strategies filmed in real-time in the classrooms of innovative teachers. The idea is to facilitate wider sharing and discussion on these strategies, so that teachers can teach, motivate, and spur further innovation within the teaching community.

• Muktangan, a Mumbai based organisation, has adopted municipal schools. The organisation has developed an in-house teacher education programme for their own teachers, which is offered to the teachers from other schools also.

• Homi Bhabha Centre for Science Education (HBCSE), a Mumbai-based National Centre of the Tata Institute of Fundamental Research (TIFR), works to promote equity and excellence in science and mathematics education from primary school to the undergraduate level. HBCSE has been conducting workshops in teacher education for Mumbai Municipal Corporation schools; Tribal Department schools; Rayat Education Society; Satara, Sarva Shiksha Abhiyan (SSA); Rashtriya Madhyamik Shiksha Abhiyan (RMSA); Kendriya Vidyalaya school system; DIET faculty of Bihar, West Bengal, Gujarat, and Uttarakhand; and varied individual school/teacher education colleges of Mumbai and Maharashtra.

Fostering sustainable and enduring links with the non-government sector will contribute towards the goal of realising quality education.

The government can use inputs from non-government agencies, where innovation, experimentation, and various models of implementation and training have evolved, to improve its TE system. Fostering sustainable and enduring links with the non-government sector will certainly contribute towards the goal of realising quality education.

Suggestions for Collaboration with Government Institutes such as SCERT, DIETs, BRCs, and CRCs

Working with the government can be an unpleasant experience due to delayed responses, changes in staff, and inadequate resources. It is important to understand differences in work cultures, work on equal terms, and sustain collaborations till the end to achieve the desired impact, which, due to its potential for scaling up, can be long-lasting. Collaboration should lead to sustainability—that is, the recommendation should be implemented even when the collaboration comes to an end. Some possible areas for collaboration include:

- Conducting capacity-building programmes for SCERT and DIET personnel and BRCs
- Developing web-based induction training programmes
- Developing various certificate and diploma courses at state (SCERT) and district (DIET) levels
- Developing model BRCs and CRCs with adequate reference material, teaching and learning resource material, and academic resources
- Developing print and video material
- Documenting and disseminating good practices and teaching and learning methods
- Promoting research
- Enriching government publications on education which are circulated to teachers, such as *Jeevan Shikshan*
- Creating teachers' handbooks on various school subjects
- Appreciating and rewarding teachers at the block and district level
- Supporting SCERTs in the development of videos for language teaching, mathematics, and other subjects, which could be used to run online and offline courses for teachers
- Developing systems to measure learning outcomes
- Developing and running education resource centres or enhancing libraries to make available a range of resources for teachers, teacher educators, and district education planners
- Creating professional forums for teachers to interact and exchange perspectives, experiences, and experiments with the teaching–learning process, learning material, and training
- Organising periodic congress of DIETs to enable sharing of research and innovative pedagogies and generating a community of teachers and teacher educators

Suggested Areas of Collaboration for the Non-government Agencies Working for the Professional Development of Teachers

NGOs play a key role in assisting the state. They should assume a larger, more consultative position by providing training and support to government institutions. These collaborations could include:

- Developing modules for teachers on various subjects
- Developing training programmes for teachers
- Developing curricula and courses for in-service teacher education in various subjects, such as constructivist approaches to teaching learning, continuous comprehensive evaluation, teaching strategies for children with special needs, etc.
- Developing web-based programmes
- Developing self-assessment tools for teachers
- Developing academic leadership programmes
- Developing and implementing fellowship programmes for teachers to take up action research or work on teaching learning methods, continuous comprehensive evaluation etc.
- Creating video material and translating them to regional languages
- Organising state and district level seminars, workshops, and consultations for teachers
- Developing summer institutes
- Promoting innovations in teacher education strategies

Medium- or large-scale non-profit foundations could carry out the above suggestions through partnerships with other non-governmental organisations equipped to provide technical expertise.

The government can use inputs from non-government agencies, where innovation, experimentation, and various models of implementation and training have evolved, to improve its TE system.

Suggested Areas of Collaboration with Universities

- Research in the area of teacher education
- Development of online, offline, and correspondence courses for teachers
- Development of programmes such as integrated B.Sc. or B.A. with B.Ed., or B.A. in education
- Development of the subject of education at the graduate level
- Instituting research in education and developing Master of Education programmes such as M.Ed., Mel.Ed., and M.A. (Education)

Conclusion

Teachers are the vital link between students and learning. Recognising this, all policy documents, from the Indian Education Commission (1964–1966), popularly known as Kothari Commission report, to the Right of Children to Free and Compulsory Education (RTE) Act, 2009, has deliberated on improving teacher quality and status.

National Curriculum Framework, 2005, taking cognizance of the changing needs of education, advocated strongly for a constructivist perspective, wherein learners actively construct their own knowledge by connecting new ideas to existing ones on the basis of the materials/activities presented to them (experience). The teacher is envisaged as being the creator of an encouraging and engaging atmosphere for children. Active engagement involves enquiry, exploration, questioning, debates, application, and reflection, leading to theory-building and the creation of ideas/positions. Teaching is envisaged as a means to harness the child's creative nature. The RTE Act 2009 has taken away two important controlling tools, that is, failing of children and punishments, out from teachers' hands. This is a paradigm shift in terms of teaching approaches. Changing the perspective of 80,76,756 teachers is a huge task. The government has created an institutional structure from the state to the cluster level, to take up this challenging task. Historically, civil society organisations have played a vital role in the development sector. It is not just limited to gap-filling, but these organisations have created an impact in terms of developing the capacities of various stakeholders and influencing policies. In the area of teacher education also, there are some examples of such engagements, but looking at the magnitude of the subject, they are very few. Hence, there is great potential for change if civil society organisations and not-for-profit foundations collaborate with the government and universities for enhancing continuous professional development of teachers. Suggested areas of collaboration are capacity-building of teachers and teacher educators; research and innovation; developing resources and training programmes; and exploring and developing open and distance learning options.

The teacher is envisaged as being the creator of an encouraging and engaging atmosphere for children.

There is great potential for change if civil society organisations and not-for-profit foundations collaborate with the government and universities for enhancing continuous professional development of teachers.

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Building Teachers' Productivity: Mathematics Education Training

SHWETA SHRIPAD NAIK

The Problem of Mathematics Teachers' Education

Mathematics teachers matter a great deal, especially since mathematics has the reputation of being a difficult and gate-opening topic. There is growing awareness across the world that any educational reform cannot be brought about without adequately addressing teachers' roles in it. In India, when two major policy initiatives were launched, in 2005 and 2009, which aimed at providing quality basic education to all children, teachers bore the brunt of the repercussions. The first policy was the new National Curriculum Framework for school education (NCF 2005) that prioritised child-centred teaching and learning with understanding. The second was the Right to Education Act (2009), which made elementary education compulsory for all children and gave the government the mandate of providing education. India struggled to implement these two initiatives, as teachers faced challenges like providing children quality education through student-centred pedagogy, assessing students comprehensively and continuously, and relating school subjects with the daily lives of children. Neither of these policies understand what the work of teaching entails, and hence, the workload that some aspects of these policies burdened teachers with. NCF 2005 has been criticised for its silence on how teachers are supposed to bring about change in their classrooms and for neglecting to provide for much-needed teacher development necessary to support curriculum renewal (Batra 2005).

While support for teachers is lacking in India at the moment, the relevant infrastructure is not. The New Education Policy of 1986 recommended the rapid expansion of infrastructure for educating teachers, in the form of institutions at the district and block levels, which would deal with both pre-service and in-service teacher education (Government of India 1986). While the infrastructure for teacher education has indeed expanded vastly, issues such as poor quality and the low relevance of teacher preparation

Teaching is the only profession where one's success is measured by someone else's performance.

> "Teacher education needs to build capacities in the teacher to construct knowledge, to deal with different contexts and to develop the abilities to discern and judge in moments of uncertainty and fluidity, characteristic of teaching-learning environments."
> (NCFTE 2010: 19–20)

to their actual classroom experience still remain (Sharma and Ramachandran 2010). A renewed attempt to address the problems of pre-service and in-service teachers' education was made with the new National Curriculum Framework for Teacher Education (NCFTE 2010).

NCFTE supports a system of teacher education that directly addresses the teacher's conceptions of teaching, learning, and the subject, instead of merely overhauling the content of textbooks or interaction techniques in the classroom. Based on the NCFTE guidelines, I propose the construct of 'teachers' productivity', which is based on the following three principles required to design any in-service teachers' education programme:

- Design authentic tools that enable teachers to construct knowledge relevant to the teaching of mathematics.
- Design opportunities to learn mathematics, which include gaining experience in unpacking familiar mathematical ideas, procedures, and principles.
- Design frameworks and settings that support teachers' communities to study the teaching of mathematics collaboratively.

In the section on new strategies, I elaborate on each of the above principles and provide suggestions for specific projects. Before that, I describe the problem of teaching mathematics in detail, and how it connects to teachers' productivity.

What is Productivity in Teaching?

Teaching is the only profession where one's success is measured by someone else's performance. Whether or not teachers do their job well is decided by their students' performances. This aspect of teaching is taxing, and many a time, makes teachers impatient. Let us explore contemporary pressures on teachers following the emergence of a new theory of learning—constructivism. NCF 2005 suggests that constructivism as a theory enables us to understand students' learning. It proposes that every child learns through the construction of ideas based on their prior knowledge. It strongly states that *telling* students will not cause any learning and will only lead to a higher cognitive load. Therefore, teachers will have to create opportunities for students that facilitate this construction of ideas. Now, for a moment, imagine that a teacher believes in this theory and brings novel practices into her classroom. She allows students to discover concepts on their own. However, when it comes to assessing students, there is no way to assess the process of construction and, therefore, she may need to fall back on assessments that encourage rote leaning. Also, letting students construct their own ideas can lead to students developing alternative conceptions, and guiding them in the right direction may increase the knowledge demands on teachers (Ball, 1999).

We all need to understand that this is a special problem which requires a specialised solution. Here, I attempt to define teacher productivity with reference to student learning and elaborate on ways to improve it. Teacher productivity is the ability to influence student learning by designing a teaching method that facilitates students' thinking; it enables them to hear students' responses from a mathematical perspective, and to process mathematical content from textbooks in an "intellectually honest"[1] way (Bruner 1948). Planning an instructional framework that facilitates the students' ability to think requires a lot of advance preparation, as it is necessary to anticipate how students will react to, question, or access the ideas discussed. Hearing the mathematics in students' responses requires teachers to not only listen to what students are saying, but also to make sense of the responses in terms of their mathematical significance to the content currently being discussed, or to be brought up again later. A brief understanding of each aspect of teachers' productivity is discussed below.

1 Teaching in an intellectually honest way involves bringing mathematical content of any level to the level of the students.

Designing Instruction This involves choosing representations, contexts, and models to teach mathematical concepts, and being alert to students' potential conceptions or questions relevant to them. It also involves framing and choosing examples that would allow one to understand and track students' learning.

Hearing Students In my several years of research, I have found that teachers do hear students, but they may not listen to them every time. Later on, I cite an example of a student learning to test prime numbers, and highlight the difference between listening and hearing.

Processing Textbook Content Even though textbooks are currently the only resource that many teachers have, it is common knowledge that they are insufficient. Teachers need to familiarise themselves with textbooks, grasp the level of difficulty they pose for their students, arrange the curriculum accordingly, and prepare introductions to and examples of many concepts.

To perform these three teaching tasks and be productive, our teachers require training programmes. The existing in-service teachers' education programmes in India appear, on paper, to emphasise high achievement among students, but lack the specific tools that teachers can use in their classrooms. Disappointment in these programmes is expressed not only by teachers, but also by the Sarva Shiksha Abhiyan coordinators and programme officers. In a study conducted by Dewan (2009), teachers shared: "We were called to the headquarters for 3–4 days. We were told about the objectives of SSA, how to ensure cent percent enrolment and help out-of-school children join the mainstream. We were also advised to execute the programmes in such a manner that the community got a sense of ownership and participation." It appears that the SSA teacher education programme, which is promoted as a "teacher training" course, imparts administrative information to participants (Dewan 2009).

Even though all organisations, such as Regional Institutes of Education, SSA, and various NGOs, including the State Council for Educational Research and Training (SCERT), see teachers' education as a critical component of enhancing education of children, many do not have a clear idea of what such teacher education programmes should entail. The rise of technology has puzzled these education institutions further. A state SCERT director mentioned that they plan to bring in Microsoft employees to organise training so that teachers and educators can learn how to prepare lessons on computers. However, what this initiative will achieve for students, and whether it would solve any immediate problems related to teaching, has not been considered.

> The existing in-service teachers' education programmes in India appear, on paper, to emphasise high achievement among students, but lack the specific tools that teachers can use in their classrooms.

What Do Mathematics Teachers Need to Know?

Teachers must know their content well to teach it effectively. Still, many equate knowledge of teaching mathematics with holding a degree in the subject. Schulman (1987) made a huge breakthrough by proposing that pedagogical content knowledge is a special kind of teacher knowledge, which intertwines content and teaching and learning. Ball and colleagues (2008) further developed this paradigm by introducing a construct called Mathematical Knowledge for Teaching (MKT). MKT refers to the knowledge of and about mathematics that helps

FIGURE 1: **Work of teaching: Analysing students' mathematical responses**

A	B	C	D
25 × 41 25 + 1000 1025	25 × 41 25 + 100 125	25 × 41 25 + 800 825	25 × 41 1000 + 25 1025

a teacher be effective. MKT is situated in the work of teaching mathematics, which includes planning, choosing examples or representations, leading discussions with students, and building on their ideas. Therefore, MKT is mathematical knowledge but it is geared more towards understanding the construction of mathematics. Let us consider some examples of such mathematical knowledge that our teachers should use.

Listed above are four responses from students to a multiplication problem. When such responses emerge during classroom interactions, the actual ability to calculate 25×41 is not only what the teacher needs. A cursory analysis of the students' work demands the following from the teacher:

- Identifying the correct responses (responses A and D are correct).
- Understanding the method used to arrive at the correct response, and whether it follows a logic that allows the method to be generalisable (i.e., finding the correct answer was not just luck).
- Diagnosing the reason for the emergence of the wrong answer and incorporating the analysis into the pedagogy; for example, an analysis of response C suggests the student has forgotten to add the carried over number, and in B, there is a problem with place value.
- Figuring out an appropriate response to each student, so that they understand how to move ahead without getting discouraged.

By responding to these students, I don't mean that the teacher has be nice with the students, which is the only response suggested to teachers. To respond to these students meaningfully, the teacher would need to identify the relevant mathematical issues in students' responses. Many teachers have contacted me for over a decade with the common complaint that they have taught the same concepts multiple times to students and, still, students have not understood them. In response, I always ask them whether they give the same explanation every time—saying the same thing repeatedly does not always clarify the issue. In fact, it discourages students by making them believe that they will never understand the concept. In response to my question, every teacher has given me an assenting smile. In various studies conducted at the Homi Bhabha Centre for Science Education (HBCSE) we found that teachers do not have command over several layers of knowledge, which inhibits what they notice while teaching and prevents them from being able to provide multiple explanations.

Mathematical Knowledge for Teaching (MKT) is situated in the work of teaching mathematics, which includes planning, choosing examples or representations, leading discussions with students, and building on their ideas.

However, the problems do not end here. Often, teachers fail to hear mathematics in students' responses (see Naik 2015). For example, while trying to decide whether or not a figure is a prime number, a student in Class 7 said, "One can start dividing with 2, but only needs to go up to half of that number." This suggestion[2] was in accordance with the algorithm the student was using, which involved dividing a number (say n) by all the numbers between 2 to n–1 to check its primeness. In order to know or figure out what to do with such a response, a teacher needs to grasp a combination of ideas:

- Knowing why going only up to half of the number (n) would work.
- Being aware that identifying such patterns is a by-product of the work that students are engaged with.
- Knowing that checking until half the number is a good strategy, but not the quickest.
- Knowing how checking till the root of the number would allow for the fewest possibilities for checking a number's primeness.
- Figuring out how to engage other students in the mathematics of the pattern verification process that the student has identified.
- Foreseeing the kind of mathematical knowledge that students will gain after discussing the student's identified pattern.

These examples reiterate the kind of mathematical experience that teachers require. Although such knowledge dimensions have been identified as useful constructs to describe the essential knowledge required for teaching (Shulman 1986; Ma 1999; Ball, Thames, and Phelps 2007; Naik 2008), they are rarely the central focus of any phase of teachers' education in India. Teachers' education programmes are often designed in response to curricula reforms; this strategy often views teachers as agents of the state, who just implement reforms rather than participating actively in the process of reconstructing the curriculum (Batra 2005). In-service teacher education is seen either as training for pedagogy or content, but not a combination of the two. Content-focused interventions often consist of lectures delivered by experts on mathematics, which are usually advanced and typically divorced from the teaching–learning context. The transmission model offers guidance to teachers

2 Example taken from a discussion during a Collaborative Lesson Planning meeting conducted by Kumar, Subramaniam, and Naik (2014).

In the Indian context, we require teacher education that interweaves content and pedagogy.

Encouraging the use of practice-based tools and the development of specialised content knowledge, will allow teachers to develop abilities that they can utilise in their classrooms.

(Dewan 2009), but recommendations on how to teach topics tend to be recipe-like. In pedagogy-focused interventions, teachers are exposed to activity-based learning that is often disconnected from disciplinary content and is not practised in the classroom. Therefore, in the Indian context, we require teacher education that interweaves content and pedagogy. Moreover, to bring changes in classrooms that will increase students' achievements, teacher education must utilise artefacts of teaching. Artefacts of teaching usually mean any material outcome of the teaching–learning process. This would involve students' work in notebooks, on the blackboard, videos of teaching, different curricula, etc.

The tasks proposed here encourage the use of practice-based tools and the development of specialised content knowledge. Practice-based tools are authentic in nature and allow teachers to develop abilities that they can utilise in their classrooms. Many researchers (Borko 2009; Sherin 2007; and Ball and Cohen 1999; Naik and Ball 2014) have identified the importance of professional development that focuses on practice as an authentic medium for building teachers' productivity. Borko (2009) specifically considers different kinds of professional development programmes over 40 years and examines

FIGURE 2: **Understanding teaching as collection of interactions**

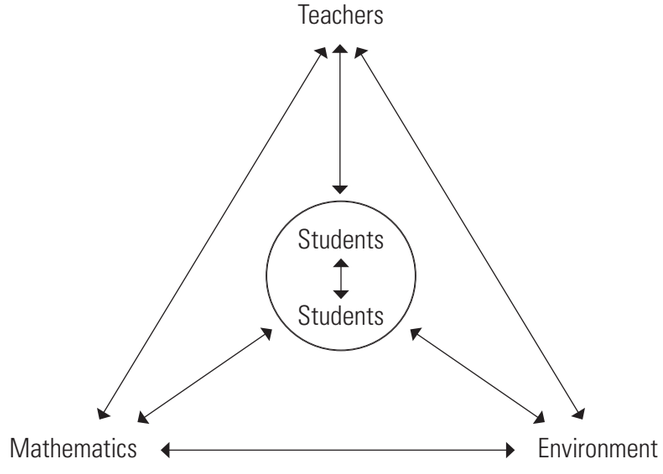
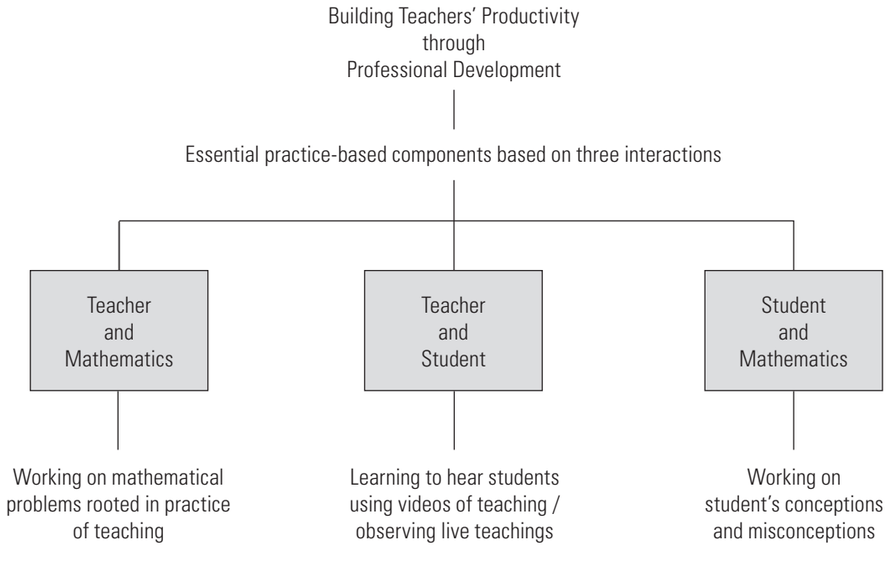


FIGURE 3: **A proposal for a practice-based professional development**



their effectiveness. She found that a common element among successful programmes was that they were practice-centred.

The final section of this paper unpacks such professional development programmes in detail, as a strategy for achieving mathematics teachers' productivity.

New Strategies for "Productivity Building"

Professional development programmes in India that impact teaching practices and, therefore, students' learning, are scarce but not entirely absent. There have been a few programmes that focus on the skills and knowledge required to facilitate this kind of teaching (see Digantar 2008 and Kumar, Subramaniam, and Naik 2014). However, a holistic appraisal of them is necessary. An instructional triangle (FIGURE 2) that reveals the intricacies of classroom interactions highlights avenues that need to be a part of effective professional development programmes. The most important interactions are between teachers and mathematics, students and mathematics, and teachers and students. Practice-based professional development would build on these three basic classroom interactions.

A professional mathematics development programme that includes developing a specialised understanding of mathematics through such tasks as solving mathematical problems (teachers ↔ content) that are rooted in teaching practice (APPENDIX 1), working on artefacts of teaching (students ↔ mathematics) that exhibit students' thinking and mathematical abilities (FIGURE 1), and learning to understand students (teachers ↔ students) through videos (for example, see video links given in the references) would be the one that will create the most authentic site for teacher learning. The strategy for such professional development is summarised in the Figure 3.

Developing such opportunities for teacher learning is a challenging task, but it is time for us to develop criteria for teacher education that positively impacts student learning. This strategy document recommends that such criteria are developed based on three practice-based components, which I believe every professional development programme ought to have, with detailed outlines of sessions and topic-wise descriptions of sessions in each component.

Practice-based professional development programmes will emphasise the use of artefacts of teaching. Initiatives such as teacher clubs with weekly meetings could be encouraged. The groups could focus on finding the logic in students' thinking and not on students' forgetting or misremembering concepts.

Specific Suggestions for the Future

Institutions such as Narotam Sekhsaria Foundation could play a major role in supporting efforts to help teachers develop a specialised and pedagogical understanding of the content. Among many possibilities, a few suggestions for developing or supporting projects is as follows:

- **Practice-based Professional Development**
  These programmes will emphasise the use of artefacts of teaching. Initiatives such as teacher clubs with weekly meetings could be encouraged. In these club meetings, the teachers could bring students' work, pictures of their blackboards, and sections from the curriculum, and attempt to investigate students' thinking on concepts discussed. The group could focus on finding the logic in students' thinking and not on students' forgetting or misremembering concepts.
  Such practices would slowly improve teachers' sensitivity towards understanding the mathematics in students' responses.

- **Teacher Fellowships**
  The NSF could offer fellowships to those willing to change their practices. These teachers could be assigned to researchers or other educational mediators who could assist them in designing and successfully teaching some milestone topics in mathematics. The incentive to participate could be the provision of support tools for teaching, such as some technical support (camera, tablet, etc) that would enable them to record and document their own teaching.
- Supporting projects that will develop a curriculum for teachers that goes beyond the textbook and give examples of pedagogical and specialised content knowledge.
- Developing professional communities that bring teachers together and who observe others' teaching (or videos of their classes) or participate in collaborative instruction planning (CIP).
- Making students' work, thinking, and ideas a central part of any teachers' education programme.

I would like all educators to design and use tasks that are situated in good teaching practices such that they form an authentic part of teaching and learning processes. There is one such example given in Appendix 1, where a teacher was required to analyse a student's response. Analysing such a response would give teachers insight into students' thinking, and can help them figure out that what the child has not understood—the algorithm for division, the meaning of the division process, or the meaning of remainders. Moreover, teachers' own conception about the process of division and its solution are contested and clarified. Designing such tasks requires a deep familiarity with students' thinking and a profound understanding of the content.

The only way we can provide teachers with relevant and useful material is by keeping the process of teaching and learning alive in the tasks used in teacher education.

To end, I will say that the only way we can provide teachers with relevant and useful material is by keeping the process of teaching and learning alive in the tasks used in teacher education. The constructivism that the whole country is discussing applies not only to students' learning, but also to how teachers learn to teach.

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APPENDIX 1

A student was asked to fill in the appropriate sign (< or > or =) in the following comparison of expressions:

59 ÷ 42 ☐ 359 ÷ 342

A student responded with the "equal to" (=) sign:

59 ÷ 42 = 1, remainder 17
359 ÷ 342 = 1, remainder 17

So, in both the expressions the answer is 1 and the remainder is 17, and that is why they are equal.

How would you respond to this student?

Making Sense of the World: Social Science Learning in Secondary Education

RASHMI PALIWAL

Importance of Social Science

Today's challenge is to build a global community with shared norms and values for a democratic, peaceful, just, and cooperative society. The social sciences are uniquely relevant to this challenge because they study multiple experiences and viewpoints. They examine the nature of the relationships between different people and groups and review these through lenses such as justice, freedom, and equality and also from the vantage point of social functions such as stability, cohesion, order, productivity, etc. Thus, their discourse tends to be normative. They enable self-reflection on the values and norms that must be upheld in today's world. The National Council of Educational Research and Training (NCERT), in the National Curriculum Framework (2005) and the "Position Paper on Teaching of Social Sciences" (2005), argues that the social sciences play an important role in generating in students "a critical moral and mental energy, making them alert to the social forces that threaten these (constitutional) values… (and) develop amongst them… sensitive, interrogative and transformative citizens…" Not only is this the desired goal of school curricula, but it is also crucial in teacher education.

The National Curriculum Framework of Teacher Education (NCFTE) (2009) underscores the importance of imparting to *all* teachers an understanding of the social sciences instead of just those who teach those subjects. Social science education helps scholars critically reflect on their own socialisation and their understanding of the "other," giving them a normative framework through which to imagine a better society for all. Such self-reflection is the foundation that can prepare people to function in a democratic manner and assume the responsibilities it entails. It also equips them to critically evaluate evidence and viewpoints while making decisions.

The social sciences can empower teachers to understand the social and personal contexts of learners. It enables teachers to introduce subjects from the perspective of the history of the discipline and

The social sciences play an important role in generating in students "A critical moral and mental energy, making them alert to the social forces that threaten these values, develop amongst them sensitive, interrogative and transformative citizens." Not only is this the desired goal of school curricula, but it is also crucial in teacher education.

understand the role of schooling as modern institution. It can imbue teachers with an understanding of the changing histories of childhood. These reflections help teachers in their own self-development as well as in the empowerment of learners.

For example, let us take a commonplace experience related to children. As adults, we are used to thinking about children as good and bad—those who obey, work, act with discipline, and perform duties are considered good; those who seek pleasure and enjoyment, get distracted, do not listen to their elders, and are not dutiful or disciplined, are considered bad. It is the duty of adults to teach children what is proper for them.

We take these attitudes as given and natural. The history of the idea of childhood broadens our mind, leading us to reflect on our attitudes and emotions about children. We may learn that according to the historian Phillip Aries, up until the 16th century, Europeans considered children miniature adults in all respects and did not take special care of them as children. Children were not protected and hidden from the world of the adult. It was the rise of puritan ideas that helped spread the notion that children are born of original sin and need to be taught how to obey and submit to the authority of elders and God. As these ideas entered popular writing, mothers were told how to curb the pleasure-seeking, sinful nature of their children—acts such as thumb-sucking and exploring their bodies, for instance, had to be suppressed lest they went out of control. These ideas also reached the colonised world and spread amongst its people through the practices of the western-educated elite. Thus, we become aware that many of the views held by teachers and adults around us are hardly natural, but a product of historical processes. We feel empowered to review these attitudes and think of better ways of relating to children.

Similarly, the history of schooling helps us to reflect on the predominant accepted model of a school. We may learn how the factory system provided the basis on which modern schools were envisioned—they broke the "substance" to be learnt into measured parts and sequenced it into smaller portions to be studied every year. This would result in a final product or outcome of the learned material. The "job" of the child was to learn the discipline and master each portion, year by year, as per his/her age. Before this

The study of social sciences could help us change the way we speak to a family that is trying to marry off a daughter at an early age or take a child out of school for migratory labour.

model, school systems all over the world varied—in the *madarsas*, *pathshalas*, and *ghotuls*, a learning group comprised children of different age groups, each mastering their individual tasks at their own pace under the supervision and instruction of a teacher, or the co-ordination of the elder peer group. We model schools after our society, and realising this can prompt us to review present models and think of the kind of society and school we would be happier in.

Now the question that arises is whether it is possible to have a commonly accepted normative framework to review social situations and evolve better ones. In some ways, our Constitution and the agreements reached by global organisations like the UN give us normative values which we can uphold and use in our enquiries in the social sciences. However, this is not an easy task, given that these norms come from agreements among some people, and not all. The social sciences help us see how they came to be adopted, which ones were rejected, and by whom. If we understand that all of this is a historical process, played out by groups with different ideas and interests, we can also research better ways of participating in this process. For instance, it could change the way we speak to a family that is trying to marry off a daughter at an early age or take a child out of school for migratory labour.

For secondary schools, NCERT outlines the importance of locating contemporary Indian issues in the context of the world and examining them from multiple perspectives.

Social science education is also particularly meaningful for adolescents. It is important for their developmental needs because it responds to their growing ability for abstraction, hypothetical thinking, idealism, and self-concept. For secondary schools, NCERT outlines the importance of locating contemporary Indian issues in the context of the world and examining them from multiple perspectives. The importance of understanding conflict and tension in society and the role of the state in upholding the ideals of the Constitution and the needs of the environment are also highlighted. It also aims to introduce to students the nature, scope, and methods used in different disciplines within the social sciences.

To sum up, we can say that social science education should give a) opportunities to critically uncover social processes over time and space; and b) a framework of norms and values to guide the process and enable us to come to terms with diverse realities in the hope of creating a better future for everyone.

Efforts and Challenges

Many efforts have been made in the past 30 years to find ways and resources to make social science education meaningful for schools. The list below gives an idea of the range of initiatives that have been taken by government and non-government organisations:

- Eklavya, Bhopal, has conducted research studies and developed and published resource materials in the social sciences.
- Digantar, Jaipur, has conducted courses on social science pedagogy and collected course materials.
- Comet Media Foundation, Mumbai, produced a series on Indian history called *Bharat Ki Chhaap*.
- The Centre for Cultural Resources and Training (CCRT) has produced print and audio visual materials on important cultural sites.
- Tata Institute of Social Sciences (TISS) and Azim Premji University (APU) have developed course material on social science pedagogy for an MA course.
- The State Council of Educational Research and Training (SCERT), Karnataka, has produced films on teaching the social sciences through local excursions and family histories.
- Adharshila Learning Centre, Sendhwa, has produced local history material generated through children's project work.
- Avehi-Abacus, Mumbai, has produced material for active and reflective social science learning and has worked with municipal schools in Mumbai.
- Nirantar, Delhi, has produced a detailed review and critique of textbooks from a feminist perspective.
- Uttarakhand Seva Nidhi, Almora, has developed and implemented local study material on the environment in schools for many years.
- SIDH, Missouri, has developed materials and programmes on local and family history.

Schools need to go beyond textbooks and focus on engaging meaningfully with the lives of the students and the affairs of the community around them.

- Azim Premji Foundation (APF) is engaged in training several teachers in the social sciences. It is also trying to develop new resource materials.
- Internet and mobile phone technologies have made a lot of visuals and information available to students and teachers.
- After NCF 2005, NCERT has succeeded in giving a concrete form to critical perspectives in education in all subjects and classes.
- CBSE attempted to embody these critical perspectives in its Continuous and Comprehensive Evaluation (CCE) modules but did not complement it with the necessary autonomy required for teachers.
- NCERT has prepared an exemplar package for CCE in social science.
- SCERTs have made textbooks based on new research and ideas.
- States are now designing modules for training teachers.
- NCERT conducts limited training programmes for teachers. These are short interactions, with no consistent follow-ups planned.
- NCERT has created a website called ePathshaha Learning on the Go that contains educational material from various sources in a digital form.

Since 2005, NCERT's efforts at making a curriculum framework, textbooks, and other resource materials have enabled social science education to move forward in the direction of a new paradigm that foregrounds marginalisation based on gender, caste, class, and so on, and treats everyday life with importance. It fosters critical thinking by upholding the values of equity and social justice and encourages open-ended enquiry and reflection by learners. Following NCERT, several state governments have also renewed their curricula up to Class 10. In parallel, new perspectives on teacher education and course material for teachers have taken shape through efforts such as the B.El.Ed Programme of Delhi University and the MA in Elementary Education Programme in TISS, Mumbai and also in APU, Bengaluru. Notwithstanding these positive developments, some of the main challenges that need to be addressed on the ground are:

1 The overload of content in textbooks
2 The use of difficult and alien conceptual language
3 The pending introduction of open-book exams
4 Inadequate orientation of teachers
5 The meagre study material for teachers; what exists is mainly available in English
6 The inadequacy of popular literature on social science-related themes
7 The need to promote the practice of going beyond the textbooks
8 The need for AV material
9 The irregularity of excursions, projects, and surveys in the school routine
10 The unsuitability of important sites in the social sciences for student interaction
11 Negligible research and theorisation on social science learning processes.

The Role of NSF in Supporting Key Need Areas of Social Science Education

1 One request of students and teachers is that they be taken out to visit sites of interest. Governments would consider this demand more favourably if they receive funding for school excursions from a non-governmental agency. As children in government schools are from underprivileged backgrounds, they cannot be expected to pay for such excursions themselves.

2 Provision of grants for the creation of animation-based presentations showing original historical sources (such as inscriptions, monuments, and paintings) as well as reconstructions of life and times around different historical sites. These can be shown to and discussed with students before they set out on excursions. Alternatively, these can be downloaded on-demand on mobile phones. If the Archaeological Survey of India (ASI) can be brought on board, the animated material can also be used on touch screens at these historical sites.

3 Creation of an agency that can anchor all aspects of excursions, from tour management to academic presentation, before and during the tour.

4 Provision of grants to non-government organisations can be made for developing teachers' study materials, translating them from English to regional languages, or making edited collections from select field attachment reports of students pursuing MA EL Education.

Provision of grants can be made to non-government organisations for the creation of popular literature (such as graphic novels, modules on life and struggles in different regions, etc.) to present complex themes and the choices made by people facing tough situations.

5 Provision of grants for research on constructing the school as a democratic and learning-centric community. Schools may choose to volunteer for this scheme. The grant can pay for the documentation of the effort made and its outcomes.

6 Provision of grants for research on how students and teachers engage with social science themes.

Some of the above activities will require partnerships with multiple agencies. For example, the translation of educational material for teachers into state languages is an important goal that requires multiple partners. Creating a network of agencies that can take charge of students' excursions also requires multiple partners across states. The NSF can facilitate and anchor such multiple partnerships.

Conclusion

Further enhancement of subject knowledge in students and teachers is contingent on two things: the growth and motivation of teachers and changes in school culture. Schools need to go beyond textbooks and focus on engaging meaningfully with the lives of the students and the affairs of the community around them. When they move in this direction, they will naturally make use of the resource materials and methods that have been developed. They will engage in projects, excursions, exhibitions, art and performances. They will assess students holistically for their self-development. To promote and sustain such reforms, a broad-based understanding and agreement is needed among different stakeholders. Thus, subject experts, university academics, business leaders, employers, bureaucrats, educationists, psychologists, and so on must be brought together in a round table to re-envision the meaning of general secondary education. Such an initiative of the NSF can have wide-scale repercussions for lakhs of students and parents.

“

The foundation strongly believes that the secondary school system should be a policy priority.

This “forgotten middle” should have interventions implemented within schools to build a healthy school ecosystem.

”

Education in 21st century India
Challenges and Way Forward

PADMINI SOMANI
Director
Narotam Sekhsaria Foundation

India as a democracy has undergone an immense change since the Independence. Today the country is a global economic power. Consequently, the need to develop social sectors, particularly education, has urgently risen.

As Dr Amartya Sen and Dr Jean Dreze argue in *An Uncertain Glory: India and its Contradictions* (2013), social services such as schooling and healthcare facilitate inclusive and sustainable growth, which in turn enhances living conditions.

At the time of India's Independence, school enrolment and retention were the key focus areas for education, and subsequently, primary education was prioritised to improve literacy. In the following decades, the need for skilled workers became acute, and so the higher education sector received the spotlight. As policies prioritised primary and higher education sectors, the intermediary stage of secondary education was often neglected. The space suffered in terms of government financing, quality of teaching, and curricula.

It should be pointed out that in parts of the education space, there has been a major transformation where the focus has shifted from enrolment and retention to quality, excellence, and accountability. As a result

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of this policy shift, secondary education has been prioritised in many of the country's policy documents, the latest being the "Three Year Action Agenda" drafted by the National Institution for Transforming India (NITI Ayog), which sets goals for 2020.

However, change is yet to reach everyone. We are mindful that not all have access to education. We firmly believe that Narotam Sekhsaria Foundation can not only help improve the quality of secondary education, but also enhance access through a transparent multi-stakeholder process.

The foundation has 15 years of rich experience and has made many contributions to primary and higher education through grants and scholarships. We now seek to explore opportunities to address the challenges faced by the secondary education system. This compendium will serve as a blueprint for the future endeavours of the foundation in the education sector, particularly in the space of secondary education.

We have also identified certain focus areas that the foundation intends to specifically work on. They are:

1 **Adolescent Training & Skill Development**

A student's time in secondary school coincides with being a teenager. The foundation believes that the adolescent phase provides opportunities to increase the students' exposure to different career paths as well as to hone their aspirations through a set of interconnected interventions. These interventions include job skills training as well as life skills training through the medium of art, theatre and sports, both integrated in the school ecosystem.

The focus of these interventions is to identify and channel the individual talent of each child. The interventions allow the children to choose a career of their choice and nurture their potential. The uniqueness of the life skills training through art and sports is that apart from helping the children pursue their passions, the training instills in them value systems that allow them to grow into responsible adults.

Hence the foundation focuses on adolescents, emphasising issues of their vulnerability towards addictions such as tobacco. Such interventions focus not just on retention of children in secondary schools but also on becoming successful adults to achieve their life goals.

2 **Policy Advocacy & Research Collaboration**

Evidence based decision-making should be encouraged, as data collection and analyses have increasingly become easier with the advent of sophisticated technology. Education as a sector, however, faces a dearth of data as well as a paucity of sound research studies. This often creates a gap between the conditions at the ground level and the perception at the decision-making level. Narotam Sekhsaria Foundation looks forward to undertaking research initiatives that strive to bridge this gap between available data and policy advocacy in the field of secondary education.

To conclude, the foundation strongly believes that the secondary school system should be a policy priority. This "forgotten middle" should have interventions implemented within schools to build a healthy school ecosystem. The interventions must take into account the vulnerability of the teenage children to ensure their smooth transformation from adolescents to young adults. Through the knowledge and experience gathered, the foundation aspires to do strong policy advocacy in the secondary space.

With challenges and opportunities ahead, Narotam Sekhsaria Foundation is prepared to expand and contribute more to the education field with a special focus on secondary education. It aims to further India's commitment of "Education for All" by ensuring quality and inclusive education.

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Authors

Dr Abhijit Prabhughate

Dr Abhijit Prabhughate is a researcher with more than 15 years' experience in the social development sector. Being passionate about health and development research, he has conducted research on maternal and child health, mental health and, more recently, on the community health aspects of non-communicable diseases. He has published in peer-reviewed journals and presented at various academic fora. As Senior Manager of Programme Research at Ambuja Cement Foundation, he supports the design and implementation of research studies for ACF programmes in health, education, women's empowerment, agro-based livelihoods, and skills development. He has a PhD from University of Illinois, Chicago, USA, an MPhil from the National Institute of Mental Health and Neurosciences (NIMHANS), India, and an MA from the Tata Institute of Social Sciences (TISS), India. Dr Abhijit is currently the Senior Manager of Programme Research, Ambuja Cement Foundation.

Dr Abhiram Mehendale

Dr Abhiram Mehendale is a dental surgeon and a public health professional with a demonstrated history of working in the non-profit sector. Dr Abhiram obtained his bachelor's degree in dental surgery from Maharashtra University of Health Sciences, Nashik, in February 2010, and practised in clinical dentistry until June 2012. In May 2014, he completed his Master of Public Health and Social Epidemiology degree from Tata Institute of Social Sciences (TISS), Mumbai. Since then, he has been working in the non-profit sector. His work has been primarily focused on programme planning and management, research, and programme monitoring and evaluation. Since July 2017, he has been associated with the Salaam Bombay Foundation, working as Project Manager in Tobacco Control and Research for 'Project Super Army', an in-school leadership and tobacco control project. He conducts primary and secondary research on the prevalence of tobacco use, tobacco industry tactics, and compliance with tobacco control policies at the state and national level. He has also been involved in project planning, finalisation of budgets, and monitoring and evaluation of projects in Mumbai and Kolkata.

Anamika Dutt

Anamika Dutt manages Monitoring and Evaluation at Salaam Bombay Foundation. She has developed and implemented Participatory Rural Appraisal (PRA) processes designed to assess programme impacts from the perspective of communities. Since 2010, she has worked with women, sexual minorities, sex workers, and migrant workers across India through community-led practices. Her current interest is in incorporating qualitative methodologies within big data sets.

Anjali Naronha

Anjali Naronha has 35 years of experience working in the field of elementary education covering curriculum development, material development at all levels of government. She is been part of the Eklavya organisation since 1982. She has worked on primarily social science education program and implementation of primary education program within the organisation. She has also been active in liaising with different academic and executive councils with governmental and non-governmental organisations. She has extensively worked with NCERT, government of Madhya Pradesh and Rajasthan on developing textbooks, courses on early childhood, and teacher's education for primary and elementary level. She has also taught courses like M.A. in Elementary Education in Tata Institute of Social Sciences. She has authored different papers and presented at various national level seminars and been member of crucial committees for governmental bodies planning commission, Rajiv Gandhi Mission, MHRD etc. She conducts several research programmes on primary education and community participation, elementary education, inclusion and exclusion in schools and also evaluates and monitors projects for several other organisations.

Basanti Roy

Basanti Roy retired as the Divisional Secretary of the Maharashtra State Board of Secondary and Higher Education, Mumbai Division, and began her career as a science teacher. She brings her immense experience at the State Education Department to the various other roles she performs. She has organised numerous training programmes for school principals and teachers. She has also initiated a mid-day meal programme with the support of ISKCON, Mumbai. She is the recipient of a number of awards and honours for her remarkable contributions to the field of school education. These include NCERT Awards for Manthan, a successfully implemented programme aimed at the empowerment of school principals. During her tenure, she forged strong association with NIOS, Bal Bhavan, the Educational Forum of Y. B. Chavan Pratishthan, and many others. She has to her credit several newspaper articles and publications that touch upon various aspects of education. Basanti is also the former Director of Bharatiya Vidya Bhavan, Mumbai. Presently, she is advisor to some educational institutions. Her zeal to promote quality education connects her to the work of different foundations and trusts, viz. Pratham, Navneet Foundation, N.M. Budhrani Trust, and Narotam Sekhsaria Foundation.

Chandita Mukherjee

Chandita Mukherjee is an award-winning documentary filmmaker. Trained at the Film and Television Institute of India (FTII), she works primarily in the areas of science, technology, and society. *Bharat Ki Chaap*, a series on the history of Indian science and technology, won her wide acclaim, and was awarded the Jules Verne Prize. Fascinated by the multiple forms of knowledge that coexist in Indian society, she works to communicate her understanding of the world meaningfully and explore knowledge-based practices which may help transform people's lives. Chandita Mukherjee has twice been a recipient of the National Film Award given by the President of lndia. The first award was for her documentary, *Another Way of Learning*, on the work of Eklavya, an NGO that works to promote child welfare. The second time, she received this award for *Totanama – The Twelfth Night*, a short fictional film based on an episode from the medieval story 'Totanama' (Tales of a Parrot). Currently with Comet Media Foundation, a Mumbai-based NGO working in media for education and social change, Chandita is currently involved in projects being undertaken in partnership with IIT-Bombay and UNICEF. She is involved with running a website focused on the theme of equal access to education (www.samata.shiksha), in partnership with the Government of Maharashtra and UNICEF. Ms Mukherjee is keenly interested in the possibilities offered by information/communication technologies for building cooperative learning spaces. She was a member of the committee that wrote the position paper on educational technology for the National Curricular Framework 2005 of NCERT, Government of India.

Gaurav Arora

Gaurav Arora leads the Skills and Sports verticals at the Salaam Bombay Foundation. He has 14 years of experience working in the corporate and development sectors. He has been associated with the skill development ecosystem since the inception of the National Mission in 2009. He is a visiting professor at Narsee Monjee Institute of Management Studies, Mumbai, where he teaches Corporate Social Responsibility and Marketing Management courses.

Hemangi Joshi

Hemangi Joshi has been working in the field of education for the past 15 years, in partnership with government and NGO bodies. Her area of interest is teacher education and language education, but she has also worked in the areas of child rights and child psychology. She has provided leadership and direction to various programmes and helped influence state policy. Ms Joshi is a convener of the Right to Education (RTE) Forum for Maharashtra (part of a nation-wide network of RTE organisations working in the elementary education sector), and is engaged in advocacy in Maharashtra. Her publications include a Marathi booklet entitled *Art and Education* written for a teacher training programme offered by the child welfare organization, MelJol; two chapters for the MelJol teacher training programme entitled 'Democracy and Education' and 'Equality, Social Justice and Education'; and a booklet on *Sensitising School Children about the AIDS-Affected Child* in Marathi. She has contributed to a Marathi book on creating awareness about child sexual abuse for Swadhar, a Pune-based

organisation, and to the Aflatoun International book series on education about child rights and financial education for children, published by MelJol. She has co-written a Marathi booklet on *Construction of Knowledge* created for a pre-service teacher education programme. Ms Joshi has a Master of Social Work and Education.

Jean Miranda

Jean Miranda is Senior Project Coordinator for Arts & Media at Salaam Bombay Foundation, where she is responsible for project planning, monitoring, and communications. She obtained her BA in Mass Media with a specialisation in Advertising from Mumbai University in 2012, and in 2017, she completed an MA in Social Work from Nirmala Niketan College of Social Work, Mumbai. Her MA research project was entitled 'A Study on Utilisation and Access of Open Spaces by Children Living in Slums'. Before entering the field of social development, she worked for three years in advertising and communications. She has strong written and verbal interpersonal and communication skills. She aims to maximise these skills and incorporate new developments in the social development field, in order to make a positive contribution to society.

Jehanzeb Baldiwala

Jehanzeb Baldiwala is a therapist, supervisor, trainer, and part of Ummeed Child Development Center's management team since 2004. She has focused for the last 12 years on narrative-based approaches. Her work at Ummeed includes consulting with families and children who are struggling with anxiety, depression, and school-related and other issues, as well as training and supervising the mental health team. She was instrumental in developing a year-long mental health training programme in collaboration with Narrative Practices, Adelaide, and Reauthoring Teaching, Vermont. She also developed and implemented, with her team, a programme that focuses on training community workers in narrative ideas and practices as a way to increase mental health support and accessibility to services in the community. The programme is the first of its kind and is conducted in Hindi. Previously, she was Director of Family Support and Social Rehabilitation Services at North East Community Center, Philadelphia, USA. She has a Master of Applied Psychology degree from the University of Mumbai.

Kishore Darak

Kishore Darak is a Pune-based teacher educator, independent researcher, and educational consultant. He has an M.A. in Elementary Education from Tata Institute of Social Sciences (TISS), Maharashtra, and was employed there as the chief research consultant for a research project on teachers' service conditions. He has also worked with Bharath Gyan Vidyan Samiti in Chandrapur and Yavatmal districts on strengthening science education under UNICEF's Primary Education Enhancement Programme. He is a fellow of the Georg Eckert Institute of International Textbook Research, Germany. He writes frequently for the Marathi print media including the *Maharashtra Times* and *Loksatta* newspapers, and for *Parivartanacha Watsary* and *Palaknitee*. His published work also includes papers and articles in *Economic & Political Weekly*, and in *Contemporary Education Dialogue*. Teacher education, education policies and policy shifts, and the cultural politics of education are his particular areas of interest. He has worked with the Maharashtra and Andhra Pradesh state governments on textbook development committees.

Medhavinee Namjoshi

Medhavinee Namjoshi is currently Project Director at Vacha Resource Centre for Women and Girls. She has about 20 years of experience working with adolescents and youths through a rights-based approach. She has worked in tribal, rural, urban, as well as institutional settings.

Medhavinee graduated from Mumbai University with a bachelor's degree in Psychology. She has a master's in Social Work from TISS and a certificate in Women's Studies from SNDT, Mumbai.

She has been working with girls and gender issues for the last 10 years. She is a trainer and facilitator in areas of gender, child rights, and patriarchy, and has conducted numerous trainings with diverse groups. She has also presented academic papers at various national and international conferences and has published a number of articles on these topics. She has edited two booklets on girls' expressions for Vacha Trust.

Prof. Niranjanaradhya VP

Prof. Niranjanaradhya VP is Fellow and Programme Head for Universalisation of School Education at the Centre for Child and Law, National Law School, India University. He is heading the field extension programme of the centre in a rural project, working directly with villages in collaboration with local gram panchayats. He is well-known as a development educationist, and as an advisor to school development and monitoring committees (SDMC) in Karnataka. For the last 15 years, he has worked extensively on a range of issues related to education, mainly in the area of Right to Education (RTE). He has advocated for equitable and quality education in government schools, and for the importance of community participation in education. He has authored and co-authored several books, articles, and columns in English and Indian languages on the subject of edu-cation and community participation. He is chief patron of the SDMC Coordination Forum that works in most districts of Karnataka, and whose slogan is 'Save, strengthen, and transform each government school into a genuine neighbourhood school'. He is closely associated with several child rights forums and networks, including the national RTE Forum, which is a civil society movement to demand effective and meaningful implementation of the RTE Act.

Protiva Kundu

Protiva Kundu works with the Centre for Budget and Governance Accountability (CBGA) as Additional Coordinator of Research. Her areas of specialisation are education, gender, child labour, and rural development. At CBGA, she has a leadership role in research and policy advocacy on government financing of education. She contributes substantively to CBGA's efforts towards strengthening Indian civil society organisations (CSOs) within multilateral policy-making fora. Prior to joining CBGA, she worked as an economist with the Policy Group of the Infrastructure Development Finance Company Ltd (IDFC). She has also worked as a consultant at the National Institute of Public Finance and Policy (NIPFP). She has a PhD in Economics from Jawaharlal Nehru University, New Delhi.

Rajashree Kadam

Rajashree Kadam's 18 years in the social sector have included working closely with the anti-tobacco campaign in urban and rural Maharashtra. A firm believer in the great words of Swami Vivekananda, "Arise! Awake! And stop not until the goal is reached!" she has earned a reputation for being a goal-oriented leader. Her work was fundamental in achieving the *gutkha* ban in Maharashtra. She has a post-graduate degree from the College of Social Work, Nirmala Niketan. Her educational background honed her managerial skills and oriented her towards prioritising the relationship with community stakeholders.

For the past ten years, she has been vice-president at Salaam Bombay Foundation, Mumbai, and has handled the rural outreach program and the Salaam Bombay Arts Academy program. She has worked on strategic planning and on the design and implementation of the monitoring and evaluation structure for scaling up programmes.

Ms Kadam worked with a team from Harvard University doing quantitative research on the impact of tobacco control, and on a life skills development programme of the Salaam Bombay Foundation. Some of her other key achievements include: presenting a poster on 'An Innovative Tobacco Control Training and Educational Methodology' at the Asia Pacific Conference on Tobacco or Health, in Sydney, Australia; a poster on 'A Multi-Level Approach in Villages to Strengthen Enforcement of India's Tobacco Control Law' at the 15th World Conference on Tobacco or Health (WCTOH) in Singapore; and three posters at the 16th World Conference on Tobacco or Health in Abu Dhabi, UAE.

Rashmi Paliwal

Rashmi Paliwal has been part of Eklavya (Institute for Educational Research and Innovative Action) since 1983. She has developed a social science programme for middle schools, as well as a teacher education programme. For the last few years she has acted as advisor to Eklavya's project on 'Developing Models of Quality Education for Tribal Children and Teachers in Two Tribal Blocks of Madhya Pradesh'. She has been a member of various academic and editorial groups associated with NCERT and SCERT (National/State Councils for Educational Research and Training) and *Sandarbh*, a bi-monthly magazine on science and education. She has played a significant

role in curriculum development and textbook writing. Throughout her long career, Ms Paliwal has often extended her expertise to governments and civil society groups.

Ravi Nayse

Ravi Nayse heads the Skills Training division of Ambuja Cement Foundation (ACF). He holds a BTech degree in Agricultural Engineering and has over two decades of experience working in the development field with various NGOs.

Mr Nayse began his career in 1993 working with an NGO as a technical consultant in lift and drip irrigation systems and water conservation. He has coordinated several developmental projects funded by government bodies, foreign agencies, and private corporations. He joined ACF in 2001 and managed different community development projects before being appointed as the manager of ACF's Skills Training division.

Serena Fernando

Serena Fernando currently works with the Narotam Sekhsaria Foundation and overseas education and livelihood projects. She is also part of education scholarships team at NSF. She has a Master's in Public Policy and a Postgraduate Diploma in Data Science from St. Xavier's College, Mumbai. She believes in evidence-based policy planning and implementation. Her areas of interest include education policy, municipal waste management, right to information (RTI), nuclear policy, representation of women in social media, and climate change. She is also deeply interested in the use of artificial intelligence in the social sector specifically in education sector.

Shamin Mehrotra

Shamin Mehrotra is a senior mental health therapist who has been part of the Ummeed management team for 14 years. She has played a key role in conceptualising, building, and supervising the school outreach team at Ummeed. This team works for the inclusion of children with disabilities in mainstream and special school settings. She has also been instrumental in developing, designing, and implementing training modules for the Mental Health Training Programme, a year-long part-time programme focusing on training professionals in narrative therapy. Ms Mehrotra graduated from the University of Mumbai, India, with an M.A. in Applied Psychology. She went on to pursue an MSEd from the University of Pennsylvania, specialising in psychological services. Prior to working at Ummeed, she worked at the Northeast Community Center, USA, providing individual and group therapy services for adults with mental health issues.

Shweta Shripad Naik

Shweta Shripad Naik is a Scientific Officer in the Mathematics Education group at Homi Bhabha Centre for Science Education (HBCSE-TIFR). She holds a bachelor's degree in mathematics from Mumbai University and a master's degree in mathematics from Pune University. Currently, Shweta is pursuing her doctoral degree in Mathematics Education at the School of Education, University of Michigan, and will be defending her dissertation in April 2018. Shweta has been an active researcher and instructor in the development of teaching trajectories for bridging arithmetic and algebra; understanding fractions; ratios and proportions; teaching area measurement; representing word problems; and understanding decimals. As part of this trajectory development work, she has taught at nearby schools for two academic years. Shweta has also been an active resource person for teacher education programmes at HBCSE. Her focus has been the mathematical knowledge that teachers require to facilitate learning with understanding. She conducts workshops for teachers that involve practice-based sessions, such as studying live teaching, watching videos of teaching, learning to solve mathematics problems, studying students' work, reading research, etc.

In pursuing this course of action, she has worked extensively with Kendriya Vidyalaya Schools, the SCERTs of different states, Mumbai municipal schools, St. Xavier's College of Education, etc. She has co-authored a number of books, such as the mathematics activities manual published by the CBSE and used across the country in Grades 9 and 10 classrooms, and a collection of readings for middle school teachers.

Tshering Bhutia

Tshering Bhutia is General Manager of Tobacco Control at Salaam Bombay Foundation. Her major role has been in the generation of evidence, and the translation of evidence into action, for effective tobacco control activities directed towards the reduction of tobacco use among the most vulnerable group: youth. Ms. Bhutia is a cerebral professional and a fierce crusader against civil society problems. She has over 12 years of experience in designing, planning, and executing health and social development projects with NGOs, state and national governments, and development partners. She has planned, led, and carried out programmes with grace and panache, whether to spread awareness about HIV/AIDS or to oppose the tobacco menace. A perfectionist by nature, Ms Bhutia has never shied away from calling a spade a spade, even if she finds herself at the receiving end of the reaction that evokes. Her success is based on a combination of strong interpersonal skills, exposure to multicultural environments, and demonstrable expertise in motivating and managing teams. She has organised national-level conferences and consultative meetings, and has presented scientific papers at national and international meetings. She co-authored a paper on 'Smokeless Tobacco Use and Perceptions of Risk Among Students in Mumbai Municipal Schools' (in press). She is also on the internal review board of Healis Sekhsaria Institute for Public Health.

Ms Bhutia holds a master's degree in Broadcast Journalism, a post-graduate degree in Social Entrepreneurship Management, and a Johns Hopkins Global Tobacco Control Certificate.

Upasana Saraf

Upasana Saraf is a well-known clinical psychologist in Mumbai. She has been heading the Human Resources Department for the schools which are under Bombay Cambridge Gurukul. Under her leadership, all the schools have met ISO 9001–2015 standards. She has conducted more than a 1,000 training programmes and workshops for parents and teachers on safety and the development of child-sensitive environments in schools and at home. She has planned and conducted several workshops for students on life skills, relationships, emotional management, human rights, and interpersonal skills. She has been regularly organising discussion groups and training for school counsellors in Mumbai on topics such as diagnosis, intervention and therapy, case management, documentation, and self-awareness. She also offers sessions to schools and colleges on a pro bono basis in the interest of child welfare. Her excellent work has been acknowledged by Mumbai University, State Education Department (Maharashtra), UNICEF, and Tata Institute of Social Sciences (TISS). For the last three years, she has been working to generate community awareness regarding child abuse and the Protection of Children from Sexual Offences Act, and has led sessions with a total of more than 8,000 participants. She has also played a proactive role in drawing up and implementing the first Child Protection Policy for schools in Mumbai.

Education is the
foundation upon which
we build our future.

CHRISTINE GREGOIRE

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