Curriculum Implementation in Rural Schools — Issues and Challenges

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Abstract

Learning achievement of rural children is low compared to urban children at all stages of school education. The NCF-2005 observes that while urban middle class children are stressed from the need to perform extremely well, rural children are not sure about whether their preparation is adequate even to succeed in the examination. Learning achievement of learners indicates the extent to which curricular objectives have been achieved and is significant indicator of quality of education. Low learning achievement and failure to achieve curricular objectives indicates that curriculum has not been implemented effectively. Curriculum implementation is a complex process where a number of interacting factors influence each other. These factors include curriculum itself, teacher, pedagogy, resource learning material, instructional time, infrastructure and community support. Curriculum implementation requires proper planning monitoring and above all political will. Curriculum is a crucial factor in successful implementation of the curriculum. If curriculum is heavily loaded with bookish knowledge which is beyond the comprehension level of learners, even the best teachers will be compelled to complete the syllabus by reading the textbooks or by writing questions and answers on the blackboard. When curriculum does not provide space for students' thinking, activity and creativity, how can these objectives be achieved? Analysis of syllabi and textbooks of a number of states reveals that curriculum imparts bookish knowledge and textbooks are urban centric. These alienate rural children from their environment rather them attaching them to it. Language of the textbooks is not the language of the rural child's communication. School and community are two different worlds for children. For effective implementation, curriculum needs to be relevant, flexible and related to life of children which meets the requirement of diverse learners.

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Introduction

The NCF-2005 observes that while urban middle class children are stressed from the need to perform extremely well, rural children are not sure about whether their preparation is adequate even to succeed in the examination. Learning achievement of rural children is low compared to urban children at all stages of school education. The achievement surveys conducted by NCERT show that the pass percentage of rural children is low compared to urban children at both primary and upper primary stage. These achievement surveys do not include private schools and also Kendriya Vidyalayas which are located mainly in urban areas and are known for high achievement and good performance in examinations. If these high achieving schools are also included in achievement surveys, the gap between achievement levels of rural and urban students would be much wider. This difference is significantly high when pass percentage is taken as 60% and above marks. The pass percentage (60% and above) is 42 for rural children and 56 for urban children at primary level (IV/V). This percentage is 36 for rural children and 46 for urban children at upper primary stage. (An independent survey, EEI, 2006-07). A research study conducted by Sharma, S. (DPEP Calling March, 2000) on Achievement Levels of Urban and Rural Children reveals that achievement levels of rural primary school children, both boys and girls, are lower than urban children. The study compares the achievement levels of children studying in rural and urban schools of Ajmer (Rajasthan) and reports that the achievement levels of the four groups, urban boys, urban girls, rural boys and rural girls are in the order:

Urban Girls > Urban Boys > Rural Boys > Rural Girls

That is, the achievement levels of both boys and girls of rural schools are lower than the achievement levels of both boys and girls of urban schools. In rural schools, nearly 50 per cent of students cannot read, write or do basic arithmetic in spite of spending four or five years in school (Chavan, 2006). Learning achievement of learners indicates the extent to which curricular objectives have been achieved and is significant indicator of quality of education. The low learning achievement and failure to achieve curricular objectives reflected poor curriculum implementation.

Curriculum implementation is a complex process where a number of interacting factors influence each other. These factors include curriculum, teacher, pedagogy, resource learning material, instructional time, infrastructure and community support. Curriculum implementation requires proper planning, monitoring and above all political will.

Curriculum is a crucial factor in successful implementation of the curriculum. If curriculum is heavily loaded with bookish knowledge which is beyond the comprehension level of learners, even the best teachers will be compelled to complete the syllabus by reading the textbooks or by writing questions and answers on the blackboard. When curriculum does not provide space for students' thinking,

activity and creativity, how can these objectives be achieved? Analysis of syllabi and textbooks of different states reveals that curriculum imparts bookish knowledge and textbooks are urban centric. These alienate rural children from their environment rather them attaching them to it. Language of the textbooks is not the language of the rural child's communication. School and community are two different worlds for children. Following illustrations from textbooks of Gujarat explain this:

Social Science, Class VI, Gujarat

(6) Iron-Steel Industry

Besides small things like pin and needle, huge machines and their parts are made from iron and steel. Small and big things of daily life are supplied by this industry. This industry develops where there is a mine of raw iron and the facility of mineral coal and electricity to heat and melt the iron. In our country, iron and steel factories are situated at places like Bhilai, Janshedpur, Bokaro, Bhadravati, etc. The name of Jamshedji Tata is famous in India as the father of steel industry.

(7) Petrochemical Industry

Mineral oil is obtained from the interiors of the earth. Many substances are mixed in it. Mixed substances are purified and from that kerosene, diesel, petrol, etc. are separated. Only after that it can be used in various ways. As this industry is based on mineral oil, it has become one of the most important industry of today: Refineries of purifying mineral oil is situated in the cities like Vadodara, Jamnagar, Mumbai, Vishakhapatnam, Cochin, Chennai, etc.

- **Refineries of Mumbai and Vishakhapatnam are in the possession of Hindustan Petroleum Corporation Limited (HPCL).**
- **In Vadodara, a huge campus namely Indian Petroleum Corporation Limited (IPCL) is situated.**

Colour-chemical Industry can also be developed from that. Manufacturing of the Substances like various chemicals, Soda-ash, Costic soda, Petrochemical, etc. is done in colour-chemical and Medicine Industry. Chemical fertilizer industry is also considered as a part of this industry. Today, the use of chemical fertilizer is increasing. Factories of chemical fertilizers are situated at Kalol, Vadodara, Sindri, Mumbai, Gorakhpur, Durgapur, etc.

Class VI, Science, Gujarat

Activity : 4

What is required ?

Vaseline (oil), boards of paper

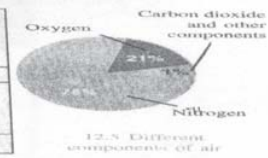
What will you do ?

- First of all take card boards of paper
- Apply vaseline or oil on these boards.
- Put one board in your house, second on the way (near the road) and the third at the open place of your choice.
- Observe all the three boards after about a day.
- Will see the small particles of dust stuck on the boards.
- You must have seen the sunlight that is coming from window, door or crack of the ceiling. The particles seen here and there are the dust particles. Thus dust particles are present in air.

Thus, it is apparent from the activities that oxygen, carbon dioxide, vapour of water and particles of dust are present in the air. In addition, nitrogen, helium, neon, argon, krypton, xenon, radon and ozone gases are present in air. Hence air is a mixture.

Experimently, the components of the air and their proportion are proved to be as shown below :

No.	Name of component	Approximate percentage by volume
1.	Nitrogen	78.0
2.	Oxygen	21.0
3.	Helium, neon, argon, krypton, xenon, radon, ozone, water vpour and dust particles	00.96
4.	Carbon dioxide	00.04



12.5 Different components of air

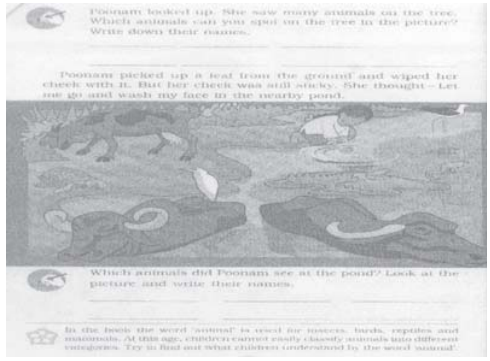
What will you do ?

You must have experiend in your everyday life that you feel suffocation during the circumstances when air is not available in the form of wind when you travel in the bus and when it is over crowded. Sometimes when the nose

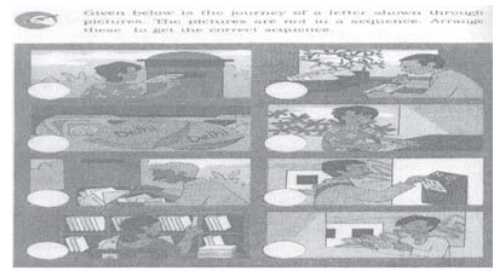
Illustrations from textbooks of different states (Gujarat, Nagaland, Mizoram, Uttar Pradesh, Uttrakhand, NCERT, etc.) may help in understanding how curricular content can facilitate or hamper the achievement of learning objectives. Here, I would like to present an analysis of 'Environmental Studies' textbooks of different states, where teachers have classified content into two categories: (A) which may help in achieving the learning objectives of EVS, and (B) which may not help in achieving the learning objectives of EVS. The curricular area of Environmental Studies at primary stage aims at developing ability of the students to make sense and draw meaning out of their experiences with social and natural environment.

A. Content/lessons which may help in achieving the objectives of EVS

(i) EVS, Class III, NCERT



This illustration from Class III, EVS textbook of NCERT relates to experiences of rural children and develops awareness about animals living on trees and in water. Children explore how these animals meet their shelter, food and water requirements. How plants and animals depend on each other.

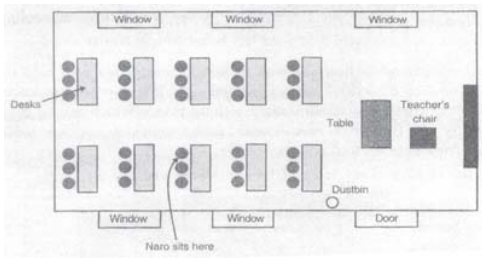


This illustration from Class III, EVS textbooks of NCERT helps children to understand how the letter that they drop in letter box reaches the addressee. The illustration is not providing direct information but asking children to think and get the correct sequence. This helps in achieving the objective of developing understanding of communication process through mail which most children in rural India must have experienced.

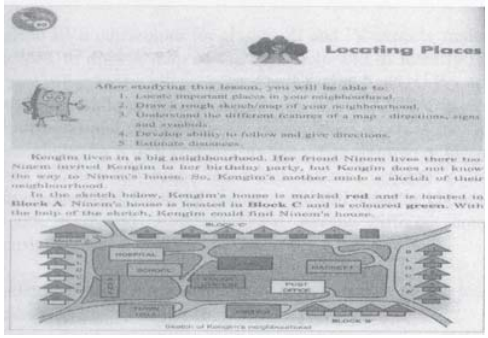
(ii) Finding My Way (Class III, EVS, Nagaland)

All children need to understand the way from home to school and back. They should be able to explain this way to others with the help of a map. This map drawing and reading becomes pre-requisite learning for further learning about maps.

(iii) Map of classroom (Class III, EVS, Nagaland)



(iv) Locating places (Class IV, EVS, Nagaland)



Illustrations (iii) and (iv) above represent maps of classroom and village which help children in locating places.

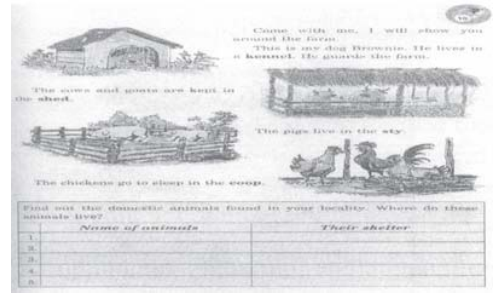
B. Content/lessons which may not help in achieving the objectives of EVS

(i) (Class III, EVS, U.P.)

The Nagaland EVS curriculum for Classes III and IV expects students to find way from home to their school, to draw a map of the classroom and to identify their seats, to locate school, hospital, post office in the village map. On the other hand, U.P. curriculum of Class III expects students to locate India in Asia using a globe and map. Experiences of teachers show that the objectives of Nagaland curriculum can be achieved whereas the objective of U.P. curriculum cannot be achieved by 8 or 9 year old children. For children of Class III, the concept of earth as a round ball and how this round ball when flattened becomes a complex map of the world is difficult to comprehend. Even the scientists are still debating about the shape of earth. Locating North, South, East and West on globe; finding different countries on map is beyond comprehension of 8-9 year olds.

Content related to animal life which may help in achieving the learning objectives of EVS in primary classes are:

A) (v) Animals and their shelter - (Class III, Nagaland)



This illustration relates to experiences of rural children and asks children to explore more about animals and their shelters.

B. (ii) The content related to human systems which may not be understood by students and therefore does not help in achieving the objectives. Children of 9-10 years age learn through experiences and making meaning out of their experiences. At this age, they can be introduced to the method of Science - experimentation and providing plausible explanations. But understanding organic structure in human system such as structure of brain, heart, lungs requires pre-requisite understanding of cell, tissue, muscle, blood flow, etc. These complex structures are beyond the comprehension of students at primary stage.

(Mizoram, Science, Class IV)

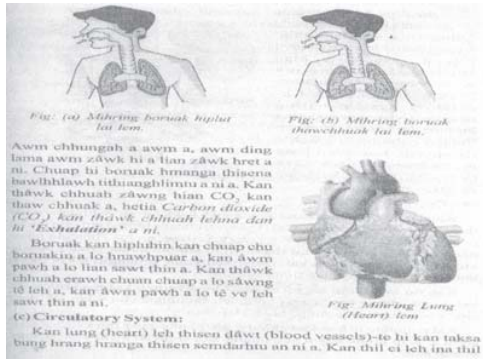


Fig: (a) Mihring boruak hipluk lai lem.

Fig: (b) Mihring boruak thawchhuak lai lem.

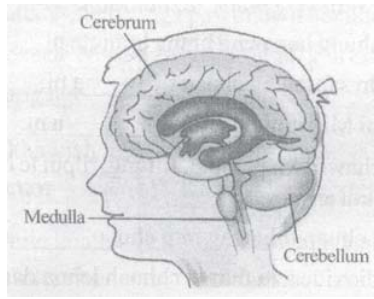
Awm chhungah a awm a, awm ding lama awm zâwk hi a lian zâwk hret a ni. Chuap hi boruak hmanga thisena bawlhhlawh tihluanghlimtu a ni a. Kan thâwk chhuah zâwng hian CO_2 kan thaw chhuak a, hetia *Carbon dioxide (CO_2) kan thâwk chhuah lehna dan hi 'Exhalation' a ni.*

Boruak kan hipluhin kan chuap chu boruakin a lo hnawhpuar a, kan âwm pawh a lo lian sawt thin a. Kan thâwk chhuah erawh chuan chuap a lo zâwng tê leh a, kan âwm pawh a lo tê ve leh sawt thin a ni.

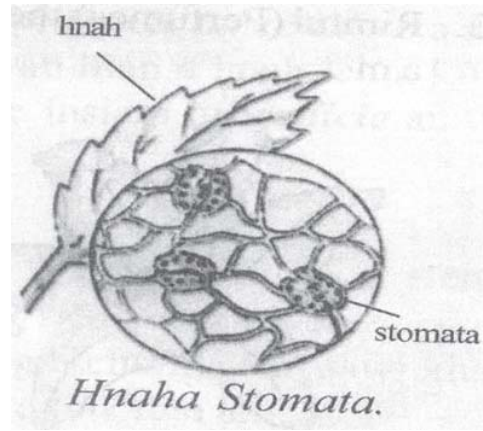
(c) Circulatory System:

Kan lung (heart) leh thisen dâwt (blood vessels)-te hi kan taksa bung hrang hranga thisen semdarhtu an ni a. Kan thil ei leh ina thil

Fig: Mihring Lung (Heart) lem



(iii) About plant life Mizoram Class IV syllabus teaches process of photosynthesis which cannot be understood by 9 year olds. These are too abstract for children to understand.



(iv) About air Mizoram syllabus of Class IV describes air pollution in terms of pollutants such as CO_2, SO_2, CO

(i) Troposphere:

Hei hi lei hnaihtu ber a ni. Atmosphere-a boruak tam ber chu hetah hian a awm. Troposphere-ah hian thawhnate an thlawk a, chhumte inaiawmin heta tang hian ruahte a lo sûr thin.

(ii) Stratosphere:

He hi Troposphere chung chiah-ah a awm a, troposphere aiin a chhuh bawk. Hetah hian ozone (O_3) pawh a awm. *Ozone hi ni eng zung hlauhawm. Ultraviolet rays (UV-rays) in kan chênna lei a rawn chhan tur lo dangin a ni.*

(iii) Mesosphere:

Hei hi Stratosphere chungah a awm a, a muk lo hle.

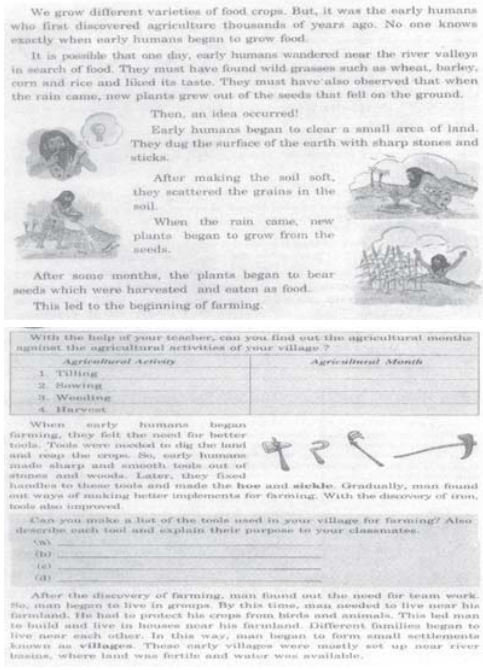
(iv) Thermosphere:

He hi atmosphere thuah chungnung ber leh lei hlattu ber a ni a. Helaiah hian boruak a muk lo ber a. Amaherawhchu, Radio thuhawnte lei lama rawn thawn lettu a ni a. Inbiakpawhna lam atan

It is clear from the illustrations that the objectives of Mizoram syllabus cannot be achieved by 9 year old children. This has too many technical terms and abstract concepts which are beyond comprehension level of children.

Similarly, to develop the understanding of time in terms of historical event and culture, Nagaland Class IV curriculum includes content such as

A) (vii) How man learnt to grow food (Class IV) - Nagaland



We grow different varieties of food crops. But, it was the early humans who first discovered agriculture thousands of years ago. No one knows exactly when early humans began to grew food.

It is possible that one day, early humans wandered near the river valleys in search of food. They must have found wild grasses such as wheat, barley, corn and rice and liked its taste. They must have also observed that when the rain came, new plants grew out of the seeds that fell on the ground.

Then, an idea occurred!

Early humans began to clear a small area of land. They dug the surface of the earth with sharp stones and sticks.

After making the soil soft, they scattered the grains in the soil.

When the rain came, new plants began to grow from the seeds.

After some months, the plants began to bear seeds which were harvested and eaten as food.

This led to the beginning of farming.

With the help of your teacher, can you find out the agricultural months against the agricultural activities of your village ?

Agricultural Activity	*Agricultural Month*
1. Tilling	
2. Sowing	
3. Weeding	
4. Harvest	

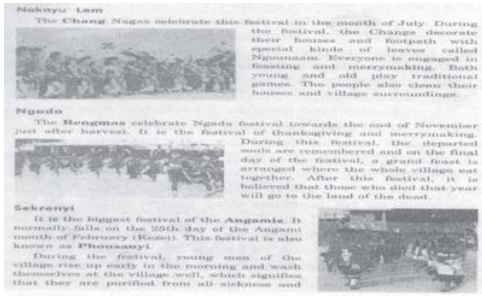
When early humans began farming, they felt the need for better tools. Tools were needed to dig the land and reap the crops. So, early humans made sharp and smooth tools out of stones and woods. Later, they fixed handles to these tools and made the **hoe** and **sickle**. Gradually, man found out ways of making better implements for farming. With the discovery of iron, tools also improved.

Can you make a list of the tools used in your village for farming? Also describe each tool and explain their purpose to your classmates.

(a) _____
(b) _____
(c) _____
(d) _____

After the discovery of farming, man found out the need for team work. So, man began to live in groups. By this time, man needed to live near his farmland. He had to protect his crops from birds and animals. This led man to build and live in houses near his farmland. Different families began to live near each other. In this way, man began to form small settlements known as **villages**. These early villages were mostly set up near river basins, where land was fertile and water was available.

(viii) Festivals we celebrate - Class IV - Nagaland



Nokyu Lam

The **Chang** Nagas celebrate this festival in the month of July. During the festival, the Changs decorate their houses and footpath with special kinds of leaves called Ngounnam. Everyone is engaged in feasting and merrymaking. Both young and old play traditional games. The people also clean their houses and village surroundings.

Ngada

The **Rengmas** celebrate Ngada festival towards the end of November just after harvest. It is the festival of thanksgiving and merrymaking. During this festival, the departed souls are remembered and on the final day of the festival, a grand feast is arranged where the whole village sat together. After this festival, it is believed that those who died that year will go to the land of the dead.

Sekrenyi

It is the biggest festival of the **Angamis**. It normally falls on the 25th day of the Angami month of February (Rezo). This festival is also known as **Phesanuoyi**.

During the festival, young men of the village rise up early in the morning and wash themselves at the village well, which signifies that they are purified from all sickness and

B) (v) Whereas textbooks of Uttrakhand (2004-05) teach about our rulers such as
Chandragupt Vikramaditya
Harshvardhan
Rajendra Chola
Krishndev Rai
Prithviraj Chouhan
Allauddin Khilji
Shershah Suri
Akbar, Rani Durgavati
Rana Pratap, Chtrapati Shivaji
Guru Govind Singh

(vi) Sant and Poets
Tukaram, Sant Kabir, Sant Ravidas, Guru Nanak, Malik Mohammad Jayesi, Tulsidas, Surdas, Meerabai, Khwaja Muiuddin Chishtee.

The State of Uttrakhand has now changed their textbooks of elementary classes considering the fact that the objectives of the earlier curriculum and the content of the textbooks cannot be understood by 9 year old students and leads to rote learning.

Implementation of this kind of curriculum at B is difficult for both rural and urban children. More rural children will fail and dropout because many of them are first generation learners. Rural parents and students start believing that this education is not for them or they do not 'fit' into this system of education. Urban parents on the other hand may raise the issues related to 'difficult' curriculum and 'poor' teaching and ask for improvement rather than withdrawing children from schools.

Also curriculum is limited and labels only some forms of knowledge as 'curricular' and others as 'co-curricular'.

The curricular subjects include Mathematics, Science, Social Science and Language. Other forms of knowledge such as Health and Physical Education, Arts and Aesthetics are considered as 'co-curricular' subjects. These 'co-curricular subjects do not receive attention in terms of school time and teachers. This way many areas of knowledge which have potential for development of skill, aesthetics, creativity and team work get sidelined. The National Curriculum Framework, 2005 recommends that Health and Physical Education and Arts and Aesthetics should be treated as curricular subjects and should be given same importance as Science or Social Science. These should be given due importance in terms of 'teacher preparation' and allocation of time in the school time table. Interaction with teachers during SOPT training at SCERT, Gurgaon, Haryana, teachers from rural schools of Haryana, 'drawing' teachers reported that they had not received any in-service training during past 25-26 years, whereas teachers teaching scholastic subjects receive training at frequent intervals. Drawing and Physical Education teachers are assigned most of the 'non teaching' work given to school by administration. A success story from Bhesana village of Gujarat may help in understanding the importance of Physical Education in school curriculum. In Bhesana village, the traditional sport of Kabaddi has helped to bring all girls to school. The sport is now the reason for record change in Bhesana, which has recorded the 100% enrolment of girls. All 200 girls in the age group 6-14 now go to school. Besides, bringing children to school and motivating children for learning, Physical and Health Education is important for allround development and growth of children. Art education helps children to express themselves and to develop aesthetic sensibilities.

SPORTING SUCCESS: Thanks to kabaddi, every girl in Gujarat's Bhesana village now goes to school

Curricular options are limited at secondary and senior secondary stage which impedes universalisation of secondary education in rural India. Of the total 5437 schools offering vocational education at Higher Secondary stage, 60% are in urban areas and only about 40% are in rural areas. Of 241,917 students enrolled in vocational stream, only 88,953 are in rural schools. Statewise data shows that in major states like Maharashtra, Tamil Nadu, Jharkhand and Karnataka, rural students are practically deprived by vocational stream.

Statewise number of Higher Secondary schools with vocational stream and students' enrolment in them (7th AISES)

State	*Area*	*No. of schools with vocational stream*	*Enrolment in vocational schools*
Andhra Pradesh	Rural	212	8, 870
	Urban	195	13, 418
	Total	407	22, 288
Chattisgarh	Rural	31	916
	Urban	62	1710
	Total	93	2626
Haryana	Rural	15	874
	Urban	24	2572
	Total	39	3446
Jharkhand	Rural	6	580
	Urban	29	2407
	Total	35	2987
Karnataka	Rural	167	4273
	Urban	267	10,530
	Total	434	14,803
Madhya Pradesh	Rural	41	771
	Urban	183	5075
	Total	224	5846
Maharashtra	Rural	353	19,591
	Urban	361	22,591
	Total	714	42,182
Rajasthan	Rural	2	65
	Urban	11	374
	Total	13	439
Tamil Nadu	Rural	461	14,776
	Urban	1099	50,339
	Total	1560	65,115
Uttar Pradesh	Rural	185	5984
	Urban	347	11,209
	Total	532	17,193
Delhi	Rural	10	187
	Urban	226	6916
	Total	236	7103

For students living in cities, plenty of vocational options are available after completing schooling, apart from continuing to do University degree programmes. In urban areas, there are courses in Information Technology enabling services such as BPOs, maintenance and repair of computer hardware, computer networking, fashion designing, training secretarial jobs etc.

Due to lack of vocational training and employability, people migrating from villages to cities end up doing unskilled laborers' job and living in slums. There is need to create more job opportunities in rural areas by offering vocational courses. The vocational courses should not be limited to agrobased courses. In addition to setting up agrobased industries in rural areas, there is need to provide courses enabling repair of boat engines, diesel mechanics, motor winding and welding, auto parts, computers, forestry, etc. Diversity in vocational courses is required to prepare learners for the world of work. Mahatma Gandhi's visualised workoriented education would enable rural youths to earn their livelihood and empower them to decide their destiny. The curricular objective of preparing the child for the world of work can be realised by institutionalising work in school curriculum. NCF-2005 suggests that the school curriculum from pre-primary to senior secondary stage should be reconstructed for realising the pedagogical potential of work as a pedagogic medium in knowledge acquisition, developing values and multiple skill formation. For successful implementation of curriculum, the first task therefore is to develop relevant and flexible curriculum which can be implemented.

Another important factor in curriculum implementation is the *curriculum transaction* where **teacher** is most important and central. Even the best curriculum would fail if teachers are not competent to transit the curriculum effectively. 7th AISES shows that 86,694 fulltime teachers teaching in primary rural schools have qualification below secondary whereas this number is 30,320 for urban schools. The numbers of fulltime teachers with secondary qualifications are 550,200 in rural schools whereas this number is 151,461 for urban schools. Of the total number, 513,638 of para teachers, 475,859 (93%) are in rural schools. To design and select appropriate learning experiences for children, teachers' own knowledge of content and pedagogy is essential. Teacher competence is an important factor, which determines the success or failure of the curriculum. Teachers in rural areas have limited general and professional knowledge. The best teachers make for cities, where they have better opportunities in terms of promotion, education of their children and housing, medical and other facilities. The urban oriented teachers scarcely understand rural children and their context. During pre-service teacher education also, school experiences are provided mainly in urban schools. Teachers are ill-equipped to teach rural children. They fail to use resources from local rural context. Teachers do not relate themselves to rural community and therefore do not interact with community. In rural education, teachers are the real bottleneck of the system.

The inefficient teaching methods are responsible for failure to achieve the objectives of curriculum. The most common method used by teachers for curriculum transaction is reading of textbooks and writing the difficult words on the blackboard. Teachers write questions and readymade answers on the blackboard which students copy and memorise to pass the examination. Experiential learning methods are generally not used and child's innate abilities to learn through experience, to observe, to question and to find solutions to the problems are not developed. Classroom teaching is a monologue where teacher speaks and students listen; many a time students do not understand teacher's urban and standardised language. Lessons are a mechanical repetition of text. Teachers try to complete syllabus by reading the textbooks. The only equipment is blackboard and chalk. Students get no opportunity to express themselves, to give their opinions or of reflecting on what they have learnt. Rural children are ridiculed by their teachers for using their rural language/accent, their manners and culture. Sometimes 'urban middle-class' teachers are totally unfit for rural schools. The teacher's first task is to familiarise himself/herself with his/her school; but she/he must also know and understand the world outside the school. Teacher's first concern should be to understand rural learner, his/her environment and rural life. Teacher has to become a part of village community and then only renewal will be possible. Teacher should be able to draw on the community using the facts of its existence as material for his teaching. There is need to remould teachers and to accommodate rural learner and rural context. Providing rural schools with professionally qualified teachers is an essential pre-requisite for implementation of curriculum.

Pedagogy based on sound theoretical principles is required for successful implementation of the curriculum. Pre-service training of teachers also needs to be remoulded and in-service teacher training programmes must also relate to the school experiences of the rural teachers. Opportunities must be provided to teachers to continue to learn and to improve their teaching skills. Teachers and students together should explore the local area and regime to discover the teaching-learning elements geography, economics, industry and agriculture. Collaborating learning, team projects and preparing resource material for teaching-learning need to be encouraged in schools for meaningful learning. Rote learning methods need to be discouraged. School must contribute to development of village life and must participate in developmental plans of villages. The environment itself (climate, geology, nature of soil, vegetation), crafts, traditional and modern patterns of agriculture, customs, languages, traditions etc., must form part of school life.

Rigid evaluation system imposed on teachers by educational administrators hampers implementation of curriculum. In most of the states a large number of tests are conducted to evaluate students' learning achievement. The schedule of testing and syllabus to be covered is generally decided at the 'state' level. Rural teachers from U.P. reported (Rural Teachers' Meet held at RIE, Ajmer in November 2007) that schools open in

July and by August/September they have taught only one/two chapters but because of examination pressures they cover the syllabus (prescribed for test) without properly teaching. The question of giving autonomy to schools and teachers in matters of pupil assessment needs to be addressed.

Lack of academic support to teachers also contributes to poor performance of teachers. Linkages between schools and universities or other institutions of higher learning are weak or absent. Opportunities and means to discuss their difficulties related to curricular areas with experts are not available to teachers. BRCs and CRCs neither have adequate academic staff nor any learning resource material. The monthly meetings held at BRC and CRC level discuss only the administrative matters. Teachers work in isolation and they do not have anybody with whom they can share their academic experiences and difficulties.

Resource learning materials are also not available in rural schools. Schools lack basic facilities of library, labs, computers and other teaching aids required for effective learning. Rural teachers from Uttrakhand informed that even the book shop is available at a distance of 20 to 25 kilometers from the school. 7th AISES shows that only about 7000 schools in rural areas have adequate Physics, Chemistry and Biology labs whereas this number is about 12000 for the urban areas. At secondary stage 5717 in rural schools have adequate Science laboratories whereas this number is 10770 for urban schools.

Instructional time is very important for effective implementation of the curriculum. Rural teachers spend considerable instructional time in works other than teaching. These include preparing list for electoral purposes, administering polio drugs and other services. In schools where there is one teacher, if this teacher is deputed for such works, the school does not function at all.

Lack of basic infrastructural facilities is another factor which impedes the successful implementation of curriculum. Each rural school needs to be provided basic infrastructural facilities, teachers, learning resource materials and learning conditions equivalent to those available in Kendriya Vidyalayas. Piecemeal reforms may not help in achieving the objectives of curriculum. There is need to overhaul the rural education system considering the present and future needs.

Effective curriculum implementation requires systemic changes including reforms in curriculum, teacher preparation, examinations and infrastructure.