



GUIDELINES FOR QUALITY

December 2014



Quality

In order to achieve good quality education it is important that there is a broad agreement on aspirations, processes and outcomes. Traditionally, using test results as a method to judge the quality of education has been common, likely because results are obtainable at a very low cost and satisfy simple notions of 'accountability' and 'performance management.' However, over the past two decades, countries around the world have been successful in their efforts to improve education by focusing on improving schools, as that is where the service of education is delivered and by monitoring student learning outcomes.

1.1 Dimensions of 'quality' school education: Schools that are well-provided for staffed with people who are qualified to do their jobs; it has facilities that enable children to experience a rich curriculum; it has sufficient resources for teachers to teach and children to learn. A school that is governed & managed well by leaders at all levels. Such a school has safe and healthy environment for all members of the school community

Quality education through school improvement is best carried out by understanding a set of dimensions that are to be improved within each school i.e. students' learning outcomes (what students learn) and the governance of schools (how schools are run). The third dimension for school improvement is through provisioning (providing the resources the school needs to improve).

The content of the three dimensions must remain dynamic and aspirational, however the following may be considered as a start:

1.1.1 Student Learning Outcomes

- students' achievement on the curriculum expectation
- students' social development

Secondary education is an important link from the foundation stage of elementary education to the worlds of further education and skills development and the world of work. One of the aims of secondary education is to ensure that all students are learning a curriculum that is relevant and useful to them as well as learning the skills and attitudes that will make them positive and productive members of society.

1.1.2 Governance of school

- leadership and management
- safety and health
- inclusion and support
- teaching and assessment of learning

This needs to represent the different requirements and aspirations of all students, whether boys or girls, whether rich or poor, from whichever social category or geographical area, and with whatever special needs. Therefore good quality education ensures that there is equity and inclusion in learning.

1.1.3 Provision to schools

- staffing
- facilities
- resources for learning

Good quality education ensures that there is equity and inclusion also in the provisioning of staff, facilities and resources for learning, including using technology as a key enabler in this endeavour.

RMSA is supporting schools to improve the quality of student learning and governance by funding the provision of resources to schools. This chapter of the guidelines is to help states to consider the resources that are needed in secondary schools in order that more students learn more and schools are better governed.

1.2 Planning Approach and Methodology: The approach to planning is that of focusing on school improvement which is a local undertaking to be managed by school level stakeholders and the first two dimensions of quality i.e. students' learning outcomes and governance of schools must be focused and managed there.

However, it is critical that school improvement is supported by districts, state, regional and national educators and managers through the third dimension of provision. By using this approach, there is adequate opportunity for states to plan for the three key areas of provision to support school stakeholders in their efforts to improve: staffing, facilities and resources for learning.

The Programme Logic Model (PLM) is a tool for integrated planning. A template for planning comprehensive quality interventions has been shared and practiced in the NCERT's QAT workshops and was much appreciated by the state delegates. This template can also be used to monitor and assess the implementation of the interventions, thereby enabling the states, districts and schools to be held accountable to each other.

The PLM methodology for planning the quality component for AWP&B is based on a causality chain which is critical to ensure efficiency and effectiveness:

1. Assessing the current situation to identify needs and develop goals
2. Identifying resources
3. Developing strategies for implementation
4. Producing outputs
5. Resulting in outcomes

A snap shot of stages and representative table is provided below to understand this causality linkage. In the current status of students' learning outcomes and provision, country level resourcing needs have been highlighted. Based on this the resources are to be allocated that will help implement the strategies which will demonstrate outputs and eventually over the longer term, outcomes.

1.2.1 Programme Logic Model for Improving Students' Learning Outcomes across India

Goal:	Improve students' learning outcomes			
Resources	Strategies	Outputs	Outcomes	
<p>Staffing</p> <ul style="list-style-type: none"> •Numbers of subject wise teachers and head masters required •The deployment and redeployment status •Availability of teachers and head masters for recruitment and its processes •Teacher training needs (including head teacher training) •Availability of the teacher training institutions 	<ul style="list-style-type: none"> •Provisioning of teachers •Training of teachers •School leadership programmes •Enablement of teachers in ICT •Partnership with Community/ Parents/SMDCs 	<ul style="list-style-type: none"> •% of states with sufficient, subject-based, trained teachers deployed based on need •% of states with trained Head Teachers •% of states with teachers trained in ICT 	<ul style="list-style-type: none"> •Improved time on task •Better quality teaching and learning •Better governance of school 	
<p>Physical Facilities</p> <ul style="list-style-type: none"> •Classrooms •Toilets •Laboratories •Libraries •ICT labs, ICT resources, Broadband Connection, digital learning resources •Ramps, furniture and other facilities required for CWSN students •Vocational facilities required by the schools 	<ul style="list-style-type: none"> •Conduct baseline of numbers of physical facilities needed •ICT in schools resource provision – recurring and non-recurring •Sports resource provision •IEDSS resource provision •VE resource provision 	<p>% of states with sufficient, functional physical facilities</p>		
<p>Resources for Learning</p> <ul style="list-style-type: none"> •science kits •maths kits •reference books 	<ul style="list-style-type: none"> •Curriculum, syllabus and textbook review and revision •School readiness materials and 	<p>% of states with approved curriculum syllabus and textbooks</p>	<p>Students are learning relevant knowledge, skills and attitudes</p>	

Goal:	Improve students' learning outcomes		
Resources	Strategies	Outputs	Outcomes
<ul style="list-style-type: none"> •excursions •laboratory equipment •Teaching aids •Guidelines on remedial teaching or camps •Guidelines on setting up counselling for adolescent students •Equipment for vocational education •Technology enabled education 	<ul style="list-style-type: none"> training •Inclusive Education materials and training •ICT focused interventions •Vocational Education and Skill Development programmes •Libraries and knowledge centres 	<ul style="list-style-type: none"> % of states implementing: • school readiness programmes • inclusive education programmes • ICT programmes • VE programmes • Libraries and knowledge centres 	<ul style="list-style-type: none"> Lessons are fun, interactive and stimulating All children are included in all lessons Teaching makes use of a variety of resources for learning

1.3 Current Status at the National Level: A principle of all improvements is to demonstrate measurable change to motivate those who are engaged in the process of change and to remove scepticism of those who do not believe in possibility of change. This requires baseline data/information on outcomes against which change may be measured over a period of time. As the planning for the future begins it is important to take stock of the condition of secondary education by understanding the current situation. Only once this has been done, can meaningful and realistic goals be set.

The key challenges in quality in secondary schools (*especially in the govt and govt aided sector*) continue to be the learning levels of students graduating from the elementary schools and the timely and effective provision of teachers, infrastructure and materials to schools

1.4 Student learning outcomes:

1.4.1 How many students achieve what the curriculum expects?

There are currently two methods for measuring learning: National Achievement Surveys (NAS) and State Board Examination results. ANAS Class VIII survey has recently been carried out, which provides information on the levels of learning of those entering secondary education. In addition to this, a NAS Class X survey is in the process of being carried out. Once the NAS Class X results are released, this will give a more comprehensive diagnosis of the current situation. Currently across India, an analysis of the Class X state board examinations is available.

a) **Learning Assessments:** The National Achievement Survey (NAS) provides information on the ‘spread’ of learning performance rather than ‘mean average’ scores. The analysis of NAS state level data will be accepted for further continuity of any quality interventions under RMSA. Some of the key aspects of the NAS are as follows:

- NAS assesses the students’ abilities in languages, mathematics, science, etc.
- The focus of the assessment is at classes VIII & X and is subject wise
- NAS uses international good practice of “*Item Response Theory (IRT)*”, which measures the true ability of students to respond correctly to different levels of difficulty in tests
- State/UTs should compare its own results and findings of NAS over time and by addressing the gaps increase the efficiency, accuracy and usefulness of results
- NCERT is in the process of development of “Quality Assessment Tool” and the State/UTs may use these to assess the status of their schools to provide support.

Details of National Assessment Survey conducted by NCERT are available at <http://www.ncert.nic.in/departments/nie/esd/pdf/NAS%20Class%20VIII.pdf>.

b) **Levels of learning at Grade 8:** Overall, the NAS class VIII sample comprised of 188647 students and 244486 teachers from 6722 schools across 33 states/UTs

A. English

Number of students	10 th percentile	90 th Percentile
	6276	10239

B. Mathematics

Number of students	10 th percentile	90 th Percentile
	6629	10039

C. Science

Number of students	10 th percentile	90 th Percentile
	6574	10417

D. Social Science

Number of students	10 th percentile	90 th Percentile
	6414	10192

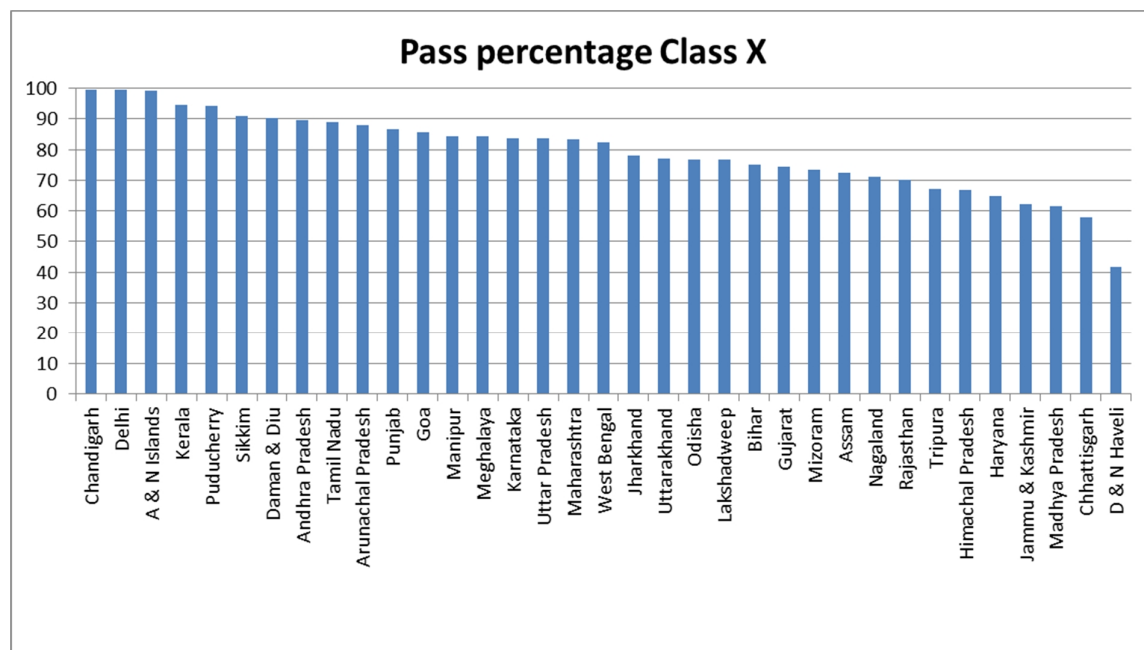
There could be a detailed analysis of the grade VIII results including the grade 8 NAS results in every state. Accordingly ‘learning enhancement’ strategies could be formulated. The dissemination of the results to schools would ensure that the secondary school readiness to learning programmes’ could be finalised in a timely fashion.

c) **Analysis of Results of State Class X Board Examinations:** As per the UDISE data of 2013-14, secondary level pass percentage is 74% in Government schools, with very

little difference in the pass percentage of girls and boys. However, an analysis of the percentage of students from different social categories who scored above 60% in the examinations at the national level shows clear disparities:

- 23% of students in the general category
- 6% of students in the ST category
- 2% of students in the SC category.

Pass percentage of students in grade X board exams as a percentage of those who sat for the exams for 2012-13



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- d) Levels of learning at Grade 9 and 10:** Each state needs to clearly set out that it will contribute to improve the quality of learning based on the identification of learning gaps of a particular subject such as Mathematics, Language, etc. Assessment of schools based on ‘Cycle of Accountability’ method is one of the strategies to identify these gaps. Subject-wise, grade-wise learning levels in schools could be assessed and compiled at district level – either through using internal student assessments or by using the Class X Board examination results. The assessment result would help to identify the gap of a particular subject or grade in the district.

1.4.2 How good is our students' social development?

This is about the psycho-social progress in students' development. It focuses upon the development of young people who will be able to participate in and contribute to society as adults. It considers behaviours and attitudes, including the simple choice to attend school. It asks about the development of leadership skills and the abilities of students to be fair, kind, gentle and just in their relations with others. It also asks if students make good choices.. Currently there is no scientific assessment of these traits and thus data is not

¹ Source: UDISE data 2013-14, MHRD-RMSA Website

available. However, anecdotal evidence could be gathered from education stake-holders such as institutes of higher education and skills, parents, employers besides students themselves.

On the elements of the school governance i.e. leadership, safety and health status, inclusion of all and practices of teaching and assessment of learning, there is no information available as there is neither self-assessment nor external assessments.

1.5 Governance of school

1.5.1 How good are the leadership and management of our school?

This question asks about leadership and management, by the Head and other staff members. It asks if there is a clear direction for the school, based upon clear understanding of the school's strengths and what needs to improve. Leadership should be inclusive as they act on the priorities. Leadership should be exercised by many, not a few people. Management should be effective, timely and honest. Leaders should build relations with parents and the local community that strengthen the school. Leaders should be accountable for results.

1.5.2 How safe and healthy is our school?

This question asks if the school is a safe and healthy place to study and work. Everyone should feel safe at all times. The grounds should be secure from intruders. There should be no bullying or intimidation of any member of the school community. Students should be supervised while on school grounds. They should be protected from harm by anyone. The entire school should be kept clean and the kitchens and toilets should be kept hygienic. The food and water should be clean and the food that is served should be nutritious.

1.5.3 How inclusive and supportive is our school?

This question asks if the school welcomes all eligible students and how well it supports them. Schools should strive to retain students until they have completed the schooling upto senior secondary stage. Schools should support students having academic or personal difficulties. Students with special needs (SWSN) should be identified and given planned, personal support, including students of low and high ability. Students should be provided with appropriate guidance about their futures. Students should be disciplined and counselled fairly and kindly.

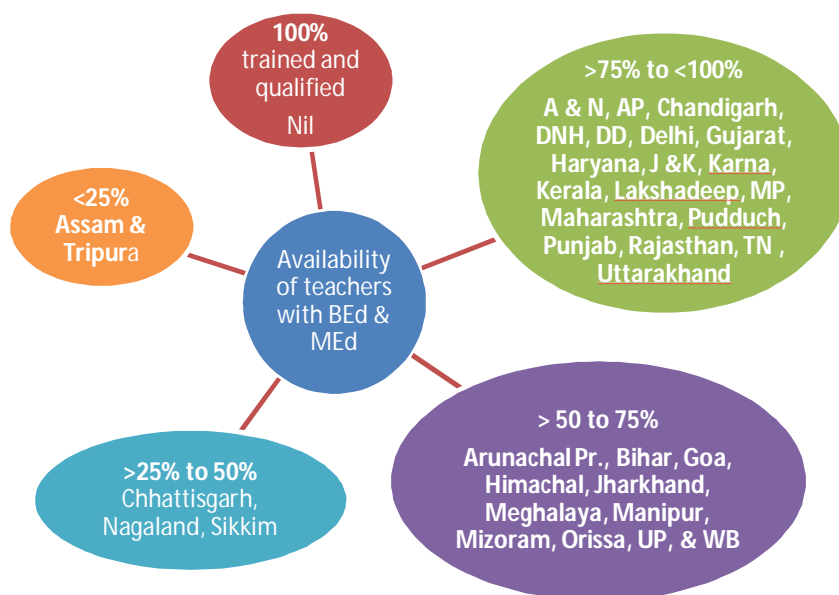
1.5.4 How good are the teaching and assessment of learning?

This question is directed at the central activity of schools. It asks about the overall quality of teaching and assessment that any student will experience. It is not about individual teachers, but teaching across all subjects and classes. Teaching is considered to be closely linked to learning; that is, students learn as a result of what teachers do and say. Teaching quality should be consistent across subjects and classes. Teaching should begin at the developmental zone of students, building upon what they have learned. It should allow students to become increasingly independent as they get older. The assessment of learning should be continuous and comprehensive; that is, more than just tests. Assessment should be for learning, not merely of learning. The results of assessment should have implications for how the curriculum is planned and how students are grouped.

1.6 Provision to schools

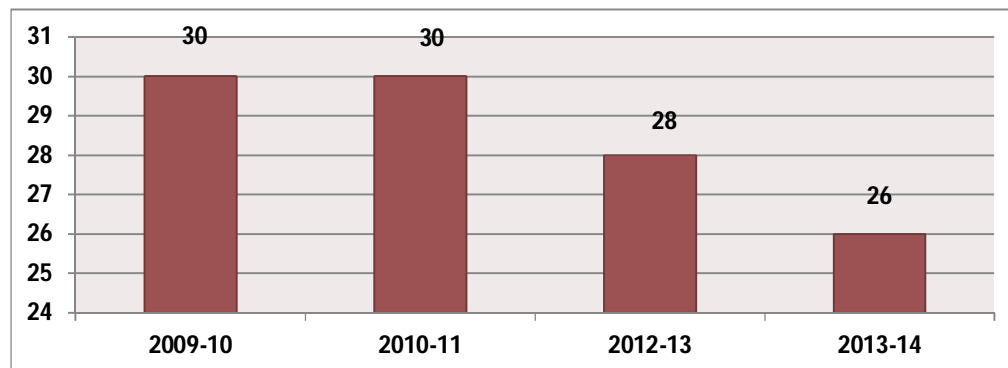
1.6.1 Staffing: This section considers if the government has staffed the school well enough, in terms of both quantity and quality. The staffing should be sufficient to allow all students to experience the full curriculum. Staffing should enable an inclusive, supportive school environment. It should allow all staff members to focus upon doing their specific jobs well. Staff members should be properly deployed and attend school reliably.

a) Availability of trained and qualified teachers in the State: All the States have their own recruitment policy. Most of the States/ UTs recruit teachers at the secondary level through a combination of direct recruitment and promotion method. The States which have policy of 100% direct recruitment are Bihar, Delhi Goa, Gujarat, Haryana, Jharkhand, Kerala, Maharashtra, Meghalaya, Mizoram Nagaland, Punjab, Tripura and West Bengal. On the other hand, Jammu and Kashmir is one State where 100% secondary teachers are recruited through promotion. The current status on availability of teachers with B.Ed. and M.Ed. qualification is as follows:



b) Pupil Teacher Ratios (PTRs): In 2009-10, PTR was 30:1 which decreased to 26:1 at national level in 2013-14. States/UTs having PTR less than or equal to the ratio of 20:1 are A&N, Andhra Pradesh, Chandigarh, Daman Diu, Goa, Haryana, J&K, Karnataka, Kerala, Lakshadweep, Orissa, Puducherry, Punjab, Sikkim, Uttarakhand and all north eastern states (except Tripura and Arunachal Pradesh). Bihar (50:1), Jharkhand (68:1) and Uttar Pradesh (51:1) have a PTR more than 50:1, which also have a significant vacancy against the sanctioned posts of teachers (Bihar-35.3%, Jharkhand-76.7% and

Uttar Pradesh-54.8%).

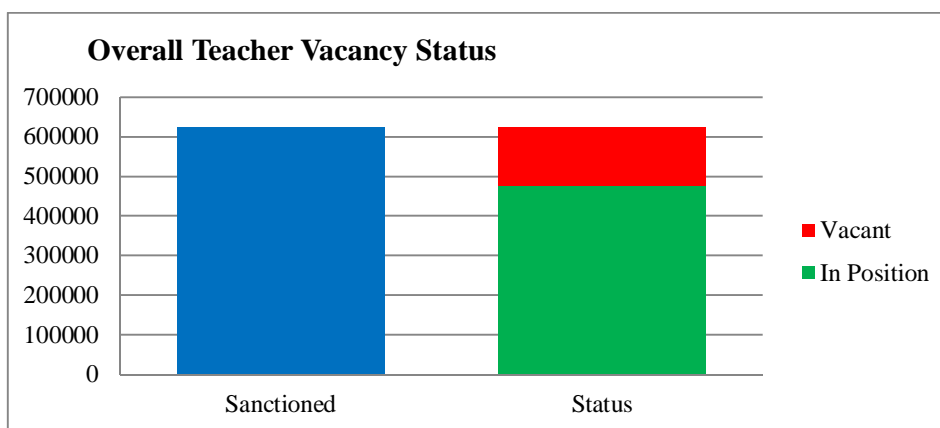


- c) **Vacancy status:** As per Model Table, AWP&B 2014-15, there are 6,22,060 sanctioned posts of teachers in Government Secondary Schools at national level and 76.6% teachers are in position i.e. 4,76,270. Grouping of States by range of vacancies is shown in the table below:

Range	State/UTs
0%-30%	A&N, Arunachal, Andhra, Chandigarh, DNH, Delhi, Goa, Gujarat, HP, J&K, Karnataka, Kerala, Lakshadweep, MP, Maharashtra, Meghalaya, Manipur, Mizoram, Nagaland, Orissa, Puducherry, Punjab, Rajasthan Sikkim, Tamil Nadu and West Bengal.
30%-50%	Bihar, Daman & Diu, Haryana and Uttarakhand
%50 & above	Chhattisgarh, Jharkhand and Uttar Pradesh

The other area of concern with respect to teacher posting is availability of subject teachers in every school. Since teacher recruitment is a State subject, MHRD has limited role to play on teacher recruitment policy. However some of the other issues include recruitment on untrained teachers or lack of provision to post subject teachers in every school. Further, poor rationalization of teachers and inadequate training institutes are also challenges to address the situation of teacher vacancies.

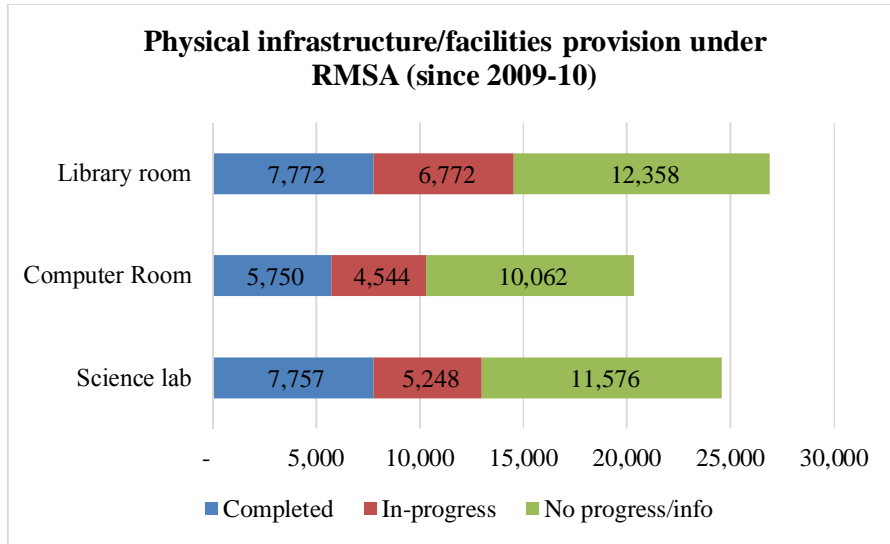
Under RMSA, 46% teachers have been recruited out of the total approval of 65,979 teachers in schools upgraded under RMSA and 70% teachers are in place out of the approved 41,507 additional teachers in existing schools (see the chart below).



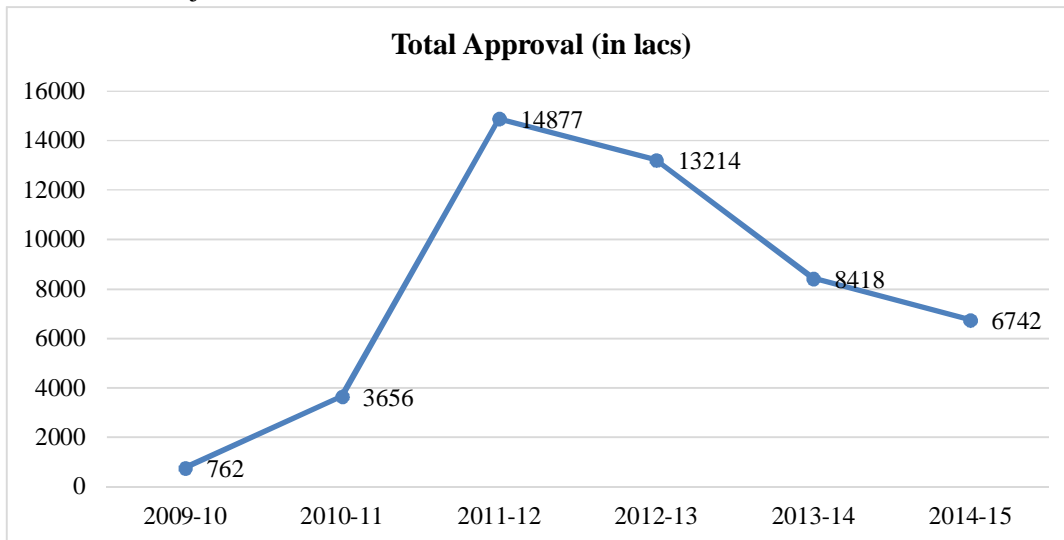
d) Status of Teachers Training: From 2009-10 to 2014-15, training of 33,78,089 teachers was approved, out of which training has been imparted to only 25.9% of teachers (8,74,368). The top 5 States/UTs where performance of training is satisfactory are Punjab, Chhattisgarh, Manipur, Maharashtra and Daman & Diu. States/UTs which need to give more attention to teacher training in are Bihar, Meghalaya, Jharkhand, Lakshadweep and Sikkim. In addition, orientation to Head Masters i.e. In-service training of HMs in teaching, Management Training to Headmasters by states and Leadership Training to HM through NUEPA has increased over the years.

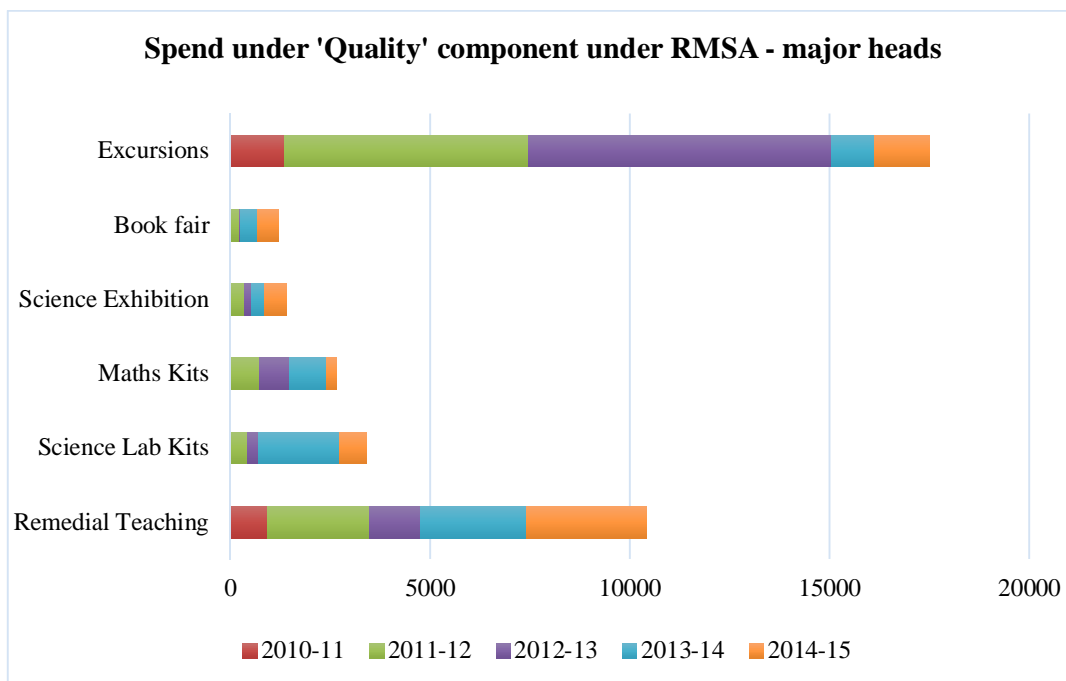
Year	Headmasters' In-service Training		Management Training to Headmasters		Leadership Training to HM Through NUEPA	
	<i>PAB Approved</i>	<i>Training Completed</i>	<i>PAB Approved</i>	<i>Training Completed</i>	<i>PAB Approved</i>	<i>Training Completed</i>
2009-10	300	1301	0	0	0	0
2010-11	16361	25942	0	0	0	0
2011-12	60826	41082	7329	3653	0	0
2012-13	50402	5121	1425	596	0	0
2013-14	62589	2342	5043	1000	11093	0

1.6.2 Physical Facilities: This section looks at how well the facilities enable teaching and learning in a school setting. The facilities should be large enough to accommodate all students and teachers. They should be free of obstacles and hazards. They should be in good repair and reliable. The facilities should support the full range of experiences that are provided to students, including libraries, laboratories and playgrounds. There should be enough room for teachers to work. There should be proper places to eat and sufficient toilets and water facilities for all. The chart below shows the physical infrastructure and facilities provision under RMSA since 2009/10.



1.6.3 Resources for learning: This section looks at the adequacy and quality of resources supplied to the school to support the curriculum. There should be enough desks and chairs for all students to be comfortable. Visual and audio aids should be available and well matched to all course syllabi. Books and other sources of information should be current and available to all students. Resources should support interactive learning, including the use of information technology. The charts below show the total approved spending on quality resources under RMSA since its inception and for each year, how much was spent on the major heads.





1.7 Identify the resources and plan the implementation strategies: Conducting a baseline of learning levels in grade 8 is important to decide for appropriate remedial interventions and an end line survey in class 10 can demonstrate the success rate and status of learning levels to demonstrate difference over the baseline if any. Baseline data can help identify areas of weakness and gaps in teaching and assessment of learning under the area of school governance and that may need additional resources and support. While identifying resources indicates 'what needs to be done', the implementation strategy would guide 'how it needs to be done'. For example, while the baseline of learning levels may indicate the areas and subjects for strengthening teaching and learning, the strategies would outline the types and methods of training, classroom pedagogy and methods of assessment. This section describes the resources available under RMSA and the strategies with respect to staffing, facilities and resources for learning. As mentioned above these are not stand alone strategies but have to be planned in an integrated way so as to have maximum impact on quality of secondary education. This can be done not only through the RMSA in-service training norms but also through other central government sponsored institutions such as College of Teacher Education, SCERT and Regional Institutes of Education etc.

Interventions aimed at improving student learning outcomes and school governance will be planned and carried out at the school level supported by the state and /or districts through guidelines and frameworks. For example, guidelines may be developed by the state on the overall quality of teaching and assessment that all the students will experience in schools. Or guidelines on how students should be disciplined and counselled with fairness and kindness and these programmes may be undertaken by school management to improve the 'governance' of the school.

On the other hand, interventions which are direct provisions to schools will be planned and implemented by the state/ districts. For example, if a school identified a training need for its teachers, training will be provided by state/ district under the provision of ‘staffing’ besides hiring of adequate number of teachers with requisite qualification and experience. School readiness programmes for grade IX students would be provided the necessary materials, training etc. under the provision of ‘resources for learning’.

1.7.1 Staffing:

a) Resources

- Numbers of subject wise teachers and head masters required
- The deployment and redeployment status
- Availability of teachers and head masters for recruitment and its processes
- Teacher training needs (including head teacher training)
- Availability of the teacher training institutions

b) Implementation Strategies

- **Provisioning of teachers:** RMSA provides flexibility to the states and UTs to provide headmasters and subject teachers to upgraded government schools and additional teachers to existing secondary schools. However, an integrated approach is required while planning for teachers under various schemes such as IEDSS, ICT in schools or Vocational Education.

Important considerations for provisioning of teachers:

The States/UTs should maintain unified teaching cadres and separate "RMSA cadre" should be avoided since the teachers are part of the teaching cadres of the state and UTs;

States/UTs need to ensure to fill the vacant teaching posts and target not to exceed the vacancy more than 10% of the sanctioned posts; special attention is required towards the provisioning of subject-wise teachers as it is critical at the secondary education stage;

States/UTs should adhere to the qualification norms laid down by National Council of Teacher Education (NCTE) available at <http://www.ncte-india.org>;

Recruitment of untrained teachers is to be avoided. States/UTs which already have a cadre of untrained teachers should make immediate provision for completing their training on priority basis

- **Training of teachers:** State Council of Educational Research and Training (SCERT), Secondary School Education Board (SSEB), Department of Education in the States/UTs should be closely involved in the planning and implementation of teachers training. Under the Revised Teacher Education Scheme (<http://mhrd.gov.in/teacher-education-overview>), the role of SCERT, IASE, CTEs, have been enhanced to provide teacher training support to the secondary education. While an integrated approach to both pre-service and in-service training is critical, various other components such as development of training content, identification of resource persons and evaluation of training has to be carefully thought through.

Important considerations regarding training of teachers

NCERT developed training package in generic concern, mathematics, science, social studies and English can be used by the States/UTs and can also be customised accordingly;

States/UTs may use the strategies of National Mission on Education through ICT (NMEICT) for teacher training available at <http://www.nmeict.ac.in>, <http://www.co-learn.in> and <http://aview.in>;

Special emphasis on training for handling children with special needs (CWSN) through Rehabilitation Council of India (RCI) and other specialised institutes such as National Institute of Occupational Health(NIOH), National Institute for the Mentally Handicapped (NIMH), National Institute for the Visually Handicapped (NIVH), Ali Yavar Jung National Institute for the Hearing Handicapped (AYJNIHH), National Institute for empowerment of Persons with Multiple Disabilities (NIEPMD) and All India Institute of Speech and Hearing (AIISH);

States/UTs may prepare a panel of Master Resource Persons (MRPs) of the respective subject and the list of MRPs must be uploaded in the website. In addition, the State/UTs, may also identify Key Resource Persons (KRPs) and articulate the selection process of the MRPs and KRPs;

In addition a cadre of experienced teachers, principals or specialists should be identified as ‘coaches’ to observe classroom practices as follow-up of teacher training;

Pre and post “Evaluation Tools” of teacher training should be developed by States/UTs;

States/UTs are encouraged under RMSA to access leadership and professional development programs for school headmasters and other functionaries. The National Centre for School Leadership under NUEPA is one such program. More details at <http://www.nuepa.org/ncsl.html>;

MHRD would be extending support to States/UTs for institutionalisation of school standard and evaluation at the State level. NUEPA is engaged in development of National Framework on School Standard and Evaluation;

NCERT is in the process of taking up National Assessment survey to study the baseline for Class-X. The purpose of NAS is to derive policy directions with a view to keep a tab on general health on school education. The NAS will help in identifying the achievement levels of students of Class X in Modern Indian Language (MIL), English, Mathematics, Science and Social Science

- **Amendment of the Teacher Training norms under RMSA:** Consequent to the subsuming of the stand-alone Centrally Sponsored Schemes of ICT in schools Scheme, Inclusive Education for Disabled at Secondary Stage (IEDSS) and Scheme for Vocationalization of Education under the Rashtriya Madhyamik Shiksha Abhiyan in 2013, the teacher training norms under different schemes are proposed to be harmonised as follows:

Head	Present Norm	Revision
In-service training of teachers	<ul style="list-style-type: none"> •RMSA- @ Rs. 300 per teacher per day for 5 days for all teachers •ICT - @ Rs. 400 per teacher per day for 5 days for all teachers •IEDSS- No rate/no of days defined -training to all teachers 	<p>Integrate the no of days to 10 days @ Rs. 300 per day per teacher</p> <p>(Subject teaching training mini 5 days , rest 5 days can be used for ICT and IEDSS/ Guidance and Counselling/ adolescent education/ CCE/Gender sensitization / Community Participation/ Leadership training,/ Classroom practices and techniques/ Classroom management etc)</p>
Induction training	<p>RMSA- @ Rs. 300 per teacher per day for 10 days for all teachers</p> <p>ICT - @ Rs. 400 per teacher per day for 10 days for all teachers</p>	<p>RMSA - 10 day residential induction training @ Rs 300 per day per teacher</p> <p>ICT - Basic Level residential Training course of 7 days by CIET or CIET approved Module. Funds can be released to CIET/ States @ Rs 400 per teacher per day</p>

- **School Leadership:** Leadership training to headmasters and principals is critical to ensuring quality learning in schools. It is important for the headmaster to understand the strength and weakness of the school and develop quality plans to monitor curriculum, lesson plans, conduct competency based assessments, track and analyse learner's performance, attendance and retention rates. As a school leader, the headmaster has to instill motivation among teachers and staff towards punctuality and attendance. And as an effective manager, the school leader has to ensure availability of resources in the school and ensure effective delegation. RMSA is committed to provide capacity development and leadership training to principals/ headmasters under RMSA schools through the Leadership Development Program by NUEPA. The State/UTs will plan prior confirmation from NUEPA. The State/UTs must ensure in the plan about the possible changes in overall school administration, teacher management and learning achievement of students. Details are available at <http://www.nuepa.org> details at <http://www.nuepa.org/ncsl.html>

- **Teacher Enablement under the National ICT Policy in School Education:** The National ICT Policy in School Education prescribes ICT literacy to be implemented in all Secondary Schools in the country (government and government aided) within the XIIth Plan period based on resource availability and capacity of the system. ICT Elective courses at the Higher Secondary Level, for which the courses should be modular in design to enable students to select appropriate software applications based on current needs of higher education and job prospects and courses should be revised frequently to keep pace with emerging trends in ICT. For the above, an ICT teacher will be needed in Secondary and Higher Secondary Schools. This teacher will be part of the 5 + 1 teacher provision of RMSA (+1 where ever schools are covered under ICT in schools component). Funds for meeting the provision of teachers will be part of the RMSA recurring (teacher) provision.

All teachers, from teachers teaching Class 6–12, will be enabled and trained to be able to use ICT for teaching and learning. This would be part of the RMSA teacher training plan for ICT enablement, which will be based on the present level of ICT knowledge/skills of the teacher. Teacher training plan in ICT enablement will be harmonized with the CIET's (NCERT) ICT curriculum for teachers, starting with Level -0 for those teachers who do not have basic level knowledge and skills in ICT. States/ UTs would need to prepare ICT Enablement/ ICT Teacher training plan, after a survey of teachers' present skills. The ICT enablement of teachers should cover all teachers and should be completed within a planned time period and aligned with the teacher training plan under AWPB of RMSA/SSA. Teachers who are already acquainted with basic computer literacy should also be encouraged to take the ICT online course from CIET and States/UTs along with CIET should ensure mechanism and calendar for the same. The training plan should go hand in hand with the provision for teacher training under RMSA/SSA. There is a proposal that the eligibility for the ICT scheme implementation includes all teachers in a school receiving initial training on a subset of the ICT curriculum.

1.7.2 Physical facilities

a) Resources

- Classrooms
- Toilets
- Laboratories
- Libraries
- ICT labs, other ICT resources, Broadband Connection, digital learning resources
- Ramps, furniture and other facilities required for CWSN students
- Vocational facilities required by the schools

b) **Implementation Strategies:** A baseline of the available infrastructure can also help plan for improving teaching and learning and for greater safety, health and inclusion.

- **ICT Facilities:** Some key policy changes have been introduced to the ICT in schools programme. These are listed below:
 - Outsourcing or procurement of e-content - Role of SIET
 - provision for outsourcing of e-content development or procurement to be discontinued;
 - SIET funding to be restricted to e-content development only on reimbursement basis;
 - any other requirements for SIET to be met out by State/UTs; As per RMSA funding is made under recurring as well as non-recurring budget heads;
 - States/UTs may, apart from proposing for ICT/e-content development/outsourcing/evaluating through SIETs and their e-content committees, may choose to do so through other agencies located in the state (SCERT, CTE, IASEs, etc.);
 - The component of ICT Awards for teachers will be retained in Revised ICT in schools component of RMSA
 - Remove separate provision for smart schools.
 - Make operating system and software components choice agnostic (non proprietary);
 - Assume access to the NROER; enable integration of ICT into teaching learning and professional development of teachers.

While continuing to cater to all government and government aided schools from Class IX to Class XII, and to harmonize with the RMSA funding norms, the components for ICT in Schools under RMSA will now be seen as Non-Recurring Components for which a one-time approval will be made, and a Recurring Component, for which approvals will be made under the RMSA recurring provisions. The funding provision will be 75:25 as Central and State share; - except NE States and Sikkim, for which the Central and State share would be 90:10.

The **Non-Recurring** Components will be defined as ICT infrastructure for Secondary and Higher Secondary Schools which will:

- aim at maximising the number of access points; provide for e-classroom (s) for subject teaching;(thus moving away from the desktop and laptop model), server, UPS, etc to an arrangement which will best suit the school, students and teacher needs;
- prescribe flexibility in definition of access points (type and number) to enable cost and energy efficient solutions; not to be restricted to PC only;
- BOOT model to be restricted to provision of access points – quality of access to be defined;
- BOOT to be replaced by BOO; maintenance of access point with appropriate refresh of hardware.

- provide range of PPP models; participation of established agencies in education to be explored;
- provide ICT kit (Operating System, educational software and content for ICT course);
- ensure ICT curriculum for students to form the basis for the ICT classes; and
- ensure ICT preparedness of all teachers.

The **recurring** component of ICT in School may include:

- maintenance and upkeep of ICT infrastructure- build in and define refresh/maintenance cycles through the period of BOO;
- stationery such as cartridges, paper, phone internet bill, electricity bill, etc., through enhancement of School Grant for those schools which are ICT enabled;
- e-content , software, etc.

- **Sports Facilities: Readiness to Spirit of Teamwork and Leadership: Sports and Games:** Sports activities are essential for physical, skill, aesthetics, creativity and psycho-social development. There is a need to cultivate recreational interests and promote the spirit of teamwork, sportsmanship and respect for others; leadership and obedience to rules.

Sports, culture, libraries, use of ICT, are other important ways to instil values, team work, good behaviour and attitudes. While provisioning of sports teachers, equipment, books etc. is important, more critical is the actual use and ensuring that all students benefit from such provisions. The plan should incorporate schedules, ways to continue updating these provisions and opportunity to create impact through those interventions such as participation in regional/national competitions, cultural events etc.

- States should ensure the availability of sports instructors and equipment in every school;
- Emphasis on the inclusion of sports and games from the local area; and inclusive approach so that students of all communities, girls and CWSN students could participate equally;
- State should ensure participation of SMDC members to monitor the performance of sports activities; district education officers and district RMSA coordinators will inspect consistently;
- Inclusion of international and national best practices in sports activities; and

The state will be prepared holistic need based plan on sports in a package mode.

- **Facilities for CWSN:** See section on resources for learning (CWSN). Detailed guidelines on inclusion aspect are available at http://rmsaindia.org/images/IEDSS_Guidelines.pdf

- **Facilities for Vocational Education:** See section on resources for learning (Vocational Education). Using the skill-gap analysis conducted by National Skill Development Corporation (NSDC), each school may identify two vocational trades keeping in mind the needs of the disadvantaged students. The state may prioritise the implementation keeping in consideration the Educationally Backward Blocks (EBBs), tribal areas etc. The Revised Scheme Guidelines of the scheme are available on the websites: www.rmsaindia.org.in and www.mhrd.gov.in under the section of Vocational Education

1.7.3 Resources for learning

a) Resources

- science kits
- maths kits
- reference books
- excursions
- laboratory equipment
- Teaching aids
- Guidelines on remedial teaching or camps
- Guidelines on setting up counselling for adolescent students
- Equipment for vocational education
- Technology enabled education

b) Implementation Strategies

- **Curriculum, Syllabus and Textbooks:** The States/UTs needs to ensure that the ‘State Curriculum Framework (SCF)’ has either been revised or formulated based on NCF-2005 (<http://www.ncert.nic.in/rightside/links/pdf/framework/english/nf2005.pdf>) and new syllabi and textbooks are accordingly prepared. The specific focus on curriculum study should be in the perspective of quality improvement at secondary education under RMSA.

NCERT consistently analyses the State/UTs curriculum, syllabus and textbooks and supports the States/UTs curriculum developers during curriculum analysis. There is a need for State Councils of Educational Research and Training (SCERT), Secondary School Education Board (SSEB) and Education Department in State/UTs to work on this in an integrated manner. This includes working on: curriculum development/revision, preparation of syllabi, textbooks and teaching-learning materials; assessment; and setting of question papers, quality improvement in teaching-learning process, etc.

- **School Readiness Materials and Training:** The challenges with the qualitative improvement of secondary education are poor infrastructure, first generation learners, low learning levels, etc. At the same time, the interventions proposed by the State/UTs s are lack of ‘need assessment’ and without specification of the

outcomes. There is also lack of clear objective, rationale, strategy, expected outcome and evaluation procedure. To make cost effective implementation of integrated RMSA programme, “School Readiness” approach could be more effective Secondary School Readiness Programme envisages the implementation of a ‘differential classroom’ with children working at different levels and paces. It takes into account levels of literacy, learning, and language proficiency and combines multidisciplinary areas including skill development. Details can be seen at

http://www.unicef.org/education/files/Child2Child_ConceptualFramework_FINAL%281%29.pdf and www.floridaearlylearning.com

Resources which could be referred to develop school readiness and improve quality:

- *Project Based Learning (PBL) of Karnataka* <http://karnatakaeducation.org.in>;
- *Tamil Nadu Rural Talent Scheme* (<http://rmsatn.com/index.html>), training on heritage education, craft mapping;
- *Uttrakhand-Learning Level Assessment at Secondary School* (<http://rmsa.uk.gov.in>);
- *Skill development in Haryana with special focus on girls and children with special needs*;
- *“Enhancement of Learning Level (ELL)” through identification of learning gaps, followed by remedial assistance in Mathematics, Science and English for Class IX students. Currently implemented in Uttrakhand and Himachal Pradesh*;
- *National Repository of Open Educational Resources (NROER) offers resources for all school subjects and grades in multiple languages. It brings together digital resources such as educational videos, audio, images, documents and interactive modules. Details are available at* <http://nroer.gov.in/home/>;
- *Credit Framework for skills and education under National Skills Qualifications Framework named SAMVAY (Skill Assessment Matrix for Vocational Advancement of Youth) has been recently developed and launched. Details available at* www.mhrd.gov.in
- *Implementation of Bachelor of Vocation (B.Voc) has been approved by UGC for 127 Universities and Colleges and setting up of Community Colleges providing diploma courses in various sectors has been approved for 150 institutions across the country. Vertical mobility of students in the vocational stream can also be accordingly planned. More details at* www.ugc.ac.in

Developing courses for teachers through Indian Institute of Science, Bangalore, Ramanujan Institute for Advance Study in Mathematics, Chennai

- **Inclusive Education Materials and Training: Readiness to Girls' Education: A Way of Social Transformation:** Major concern areas related with girl students are high dropout and low retention. Girl students of the marginalized social groups and girls with disability require special thrust. States/UTs need to conduct 'gap analysis' to improve the quality of education among the girl students. In order to do this and to develop strategies for improving the quality of education for girls, materials and training programmes need to be developed which will help schools to identify the issues and include these in the "School Development Plan" with curative measures. The role of SMDC will be defined to bring quality improvement and motivation to parents. The analysis of the "School Development Plan" would be included in the district and state plan. The concern of girl students in sports and vocational education would be integrated in this.
- **Readiness to Cumulative Disadvantage Group:** As NCF 2005 has envisaged "children with disability" often confront insensitive environments where their needs are completely ignored. To create an enabling environment not only through ramps but accessible classrooms, hostels, laboratories, playgrounds and toilets are more important. States/UTs would prepare plan for CWSN students in a package mode under integrated RMSA to articulate the learning goals that are being targeted and the strategies (methods, materials, models and measurement) that will be used to reach those goals.

The CWSN related interventions need to be planned as part of whole school approach be it physical barriers being removed or providing for aids and appliances or resource support to the general teachers in the class. Detailed guidelines on inclusion aspect are available at http://rmsaindia.org/images/IEDSS_Guidelines.pdf

- **ICT focused interventions:** The current ICT in school scheme underwent revision in 2010, and later subsumed under RMSA. In addition, a National ICT Policy in School Education was brought out in 2012 and a wider range of cost effective and energy efficient hardware options were made available. Further, a National ICT curriculum for teachers as well as students has also been developed. <http://www.ncert.nic.in/rightside/links/pdf/framework/english/nf2005.pdf>

A National Repository of Open Educational Resources (NROER) with participation of all States has been developed with an aim to map teachers and students, schools and institutions into a nation-wide peer network offers digital and digitisable resources (audio, video, interactive, images, documents) in different languages together with online activities to service the needs of all stakeholders, especially students and teachers <http://nroer.gov.in/home/>

Under the ICT in Schools Component of the RMSA, it is expected that all States/UTs would carry out large scale digitization of existing learning resources, translation and development of new learning resources through the NROER Core Teams in States/UTs. It is also envisioned, that all schools should eventually

become smart, connected schools, through a common resource internet based platform and fully utilize ICT for enhancing efficiency and improving quality of education.

- **Vocational Education and Skill Development:** The aim of introducing vocational education at secondary level and higher Secondary level is to enhance the employability of youth through demand driven competency based, modular vocational courses and at the same time reduce the dropout rate at the Secondary level. The Centrally Sponsored Scheme of Vocationalisation of Secondary and Higher Secondary Education approved by the Government in September, 2011 has been recently revised on 12 February 2014 with a view to align it with the National Skill Qualification Frame work (available on www.skilldevelopment.gov.in). The revised scheme while introducing vocational education at the secondary level, seeks to integrate vocational education with general education and provide horizontal and vertical mobility to the students. It envisages close partnership with the industry in the design, development, delivery, assessment and certification of skills content. The Revised Scheme Guidelines of the scheme are available on the websites: www.rmsaindia.org.in and www.mhrd.gov.in under the section of Vocational Education.
- **Libraries and Knowledge Centres:** Quality based information (books and periodicals) and convenient access to libraries in view of inclusive education could promote reading habits. States/UTs may initiate the following strategies to meet out the preceding needs of students.
 - Library should be DIGITAL and capable to provide online resources;
 - Library may approach National Informatics Centre for free training and free library software Like “GRANTHALAYA”; and

School library must develop in its own network for resource sharing with the help of digital library technologies like DRUPAL, MENDLEY, ZOTERO, DSPACE, EPRINTS GSDL (greenstone digital library software), CHATBOT, and WORDPRESS.

1.7.4 Monitoring, evaluation and research: By using the Programme Logic Model described in section 5.2 Planning Approach and Methodology states are provided with a framework which can be used not only for planning and implementation, but also for monitoring. The example used earlier is referred to again to demonstrate this. Monitoring and evaluation can be carried out at the strategy implementation level, output level and research can begin to investigate the outcome level.

Resources	Strategies	Outputs	Outcomes
Staffing •Numbers of subject wise teachers and head masters required •The deployment and	•Provisioning of teachers •Training of teachers •School leadership programmes	•% of states with sufficient, subject-based, trained teachers deployed based on need	•Improved time on task •Better quality teaching and learning

redeployment status • Availability of teachers and head masters for recruitment and its processes • Teacher training needs (including head teacher training) • Availability of the teacher training institutions	• Enablement of teachers in ICT	• % of states with trained Head Teachers • % of states with teachers trained in ICT	• Better governance of school
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- a) **Strategies:** For example did the implementation go ahead as planned? Some of the monitoring parameters on processes could be:
- Number of training sessions given, number of teachers who attended, pre- and post-test conducted etc.
 - Identification and selection of master trainers, trainer to teacher ratio, schedule of training etc.
 - Development of training and teaching modules, distribution schedule, etc.
- b) **Outputs:** This can be monitored and evaluated against criteria such as number of vacancies filled, number of teachers trained, quality infrastructure such as libraries, computers, sports made functional and so on.
- c) **Outcomes:** This can be understood in terms of the improvement in areas related to:
- Teachers: PTR figures, teacher absenteeism, engagement with students, creating student friendly environments, and
 - Students: Reduction in dropout rates, increase in pass-out rates, and rise in the level of achievement among students.
- d) **Impact evaluation and research:** In order to carry out a robust impact evaluation or research, it would be necessary to develop a baseline audit to capture:
- needs and aspirations of targeted teachers; and immediate school community (parents, guardians and children);
 - capacity development needs of possible teachers based on Recognition of Prior Learning (RPL) activity for all teachers, to measure levels of competence;
 - overview of classroom practices; and
 - material realities in which secondary education program is getting delivered such as regulatory and physical capacity constraints, willingness and motivation of the implementing cadres etc.

- e) **Tracking progress:** Mapping the baseline audit or the current situation with that of UDISE or other sources of information at the end of each year of implementation can enable a State/UT level dashboard of information to assess the progress of program implementation. This can help to identify corrective action. Ideally, the monitoring dashboard should be an online tool and should be closely aligned to AWPB of RMSA (Refer to MI guidelines and reports at http://mhrd.gov.in/rmsa_monitoring)