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About the Journal

The Primary Teacher is a quarterly journal, brought out by the National Council of Educational Research and Training (NCERT), New Delhi. The Journal publishes articles and researches on educational policies and practices and values material that is useful to practitioners in the contemporary times. The journal also provides a forum for teachers to share their experiences and concerns about schooling processes, curriculum textbooks, teaching-learning and assessment practices. The papers for publication are selected on the basis of comments from two referees. The views expressed by individual authors are their own and do not necessarily reflect the policies of the NCERT, or the views of the editor.

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THE PRIMARY TEACHER

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APRIL AND JULY, 2015

CONTENTS

Do You Know ?

According to the 86th Constitutional Amendment Act, 2002, free and compulsory education for all children in 6-14 year age group is now a Fundamental Right under Article 21-A of the Constitution.

EDUCATION IS NEITHER A PRIVILEGE NOR FAVOUR BUT A BASIC HUMAN RIGHT TO WHICH ALL GIRLS AND WOMEN ARE ENTITLED

Give Girls Their Chance !

EDITORIAL

The quality of education, particularly school education, is largely dependent on the quality of teachers, which in turn, is largely dependent on the quality of their professional development and personal motivation. Indeed, the two cannot be separated. Although the subject knowledge of teachers is important, and needs to be updated regularly, there is, in addition, an overwhelming necessity the teachers to be aware of progress in fields other than their own. Systems that encourage reading, discussion and networking would aid teachers' professional development.

The paper 'A Strong Foundation: Early Literacy in North East India' examines the *Padhe Bharat Badhe Bharat* document launched by the Government of India on August 26, 2014 in the context of North East India and attempts to explore ways to leverage to support early reading and writing with comprehension for children in class I and II. The paper on ECE and Quality Education for All focuses on the positive effects of the early childhood education and quality Education For All. Early childhood education influences intellectual development besides fostering social and emotional development supported by research evidence. 'Acquiring Scientific Skills through Science Education in Schools: A Critical Reflection' gives a brief introduction of science education and its purpose, with particular emphasis on scientific skill development through science education in the school curriculum.

The efficiency and advancement of technology in facilitating learning and learning in the current time particularly in urban and metro settings is brought out in the paper 'ICT Augmented Elementary Teaching and Learning'. Technology is providing opportunities for collaborative content creation, enhancing creativity as well as fair, transparent and participatory evaluation in order to achieve quantitative, qualitative and acceptable facilitating learning and learning, depicting its trust in the principles of constructivism. 'In Search of a Professional Identity' shows how dedicated, knowledgeable and reflective teachers can foster critical and creative thinking in students. Teaching remains a human endeavour. To disseminate quality education, teachers need to be seen as an active agency who can think for her students, taking into cognizance the multiple socio-political and cultural backgrounds of the learners. The paper argues that the focus should be on empowering teachers so that they can devise the best way to face the challenge of multi-cultural classrooms and to achieve this, a serious rethinking of teachers' professionalism needs to be worked out.

This issue has three papers related to evaluation. One of them attempts to look carefully at the issues that seem to be inhibiting the desired implementation of No Detention Policy along with the policy of Continuous and Comprehension Evaluation. The paper also focuses on the rationale for the two, and argues that perhaps the policy has not been understood in the right perspective. The urge to bring back the No Detention policy may not assure the expected improvement, rather it may push children who are not promoted to next class to withdraw from the system due to demotivation. The second, 'Why CCE still a Challenge' discusses an article in a newspaper, titled "CCE has improved scores, not teaching" - a conversation with the CBSE Chairperson Mr. Vineet Joshi. The conversation concludes with "Shift in teaching methodology still a challenge" focussing on some questions such as why teaching has not improved, even after so many efforts; and why Continuous and Comprehensive Evaluation is still a challenge? The article is an effort to find out the answers of these questions as well as to study the attitude of Teachers of Government and Non-Government Schools towards Continuous and Comprehensive Evaluation. The third paper, 'Performance-based Assessment for Assessing Science Learning' focuses on the fact that performance-based assessment tasks provide opportunities to students to demonstrate their problem solving abilities by working individually or in groups. The aim of performance-based assessment is to integrate it with learning. During the performance-based assessment, students get opportunities to apply various science process skills such as classifying, formulating hypotheses, interpreting data, and conducting an experiment.

The RTE Act 2009 brought with it a hope of change for parents as well as children. 'Right To Education Act 2009: Power or Plight for a Parent' focuses on whether children have actually got benefitted by it and parents got the long-awaited breath of relief or not. It also focuses on the possibility of the act shorten the gap between underprivileged and middle class family children by bringing equal educational opportunities for all. From the discussion, it can be stated ostensibly enough that RTE's implementation has further broadened the gap between two economic strata, leaving parents of both the groups wondering how RTE has changed the educational scenario. Finally, the paper suggests that to gain its aspired results the government should take some steps like common school system in which all the groups can come onto one platform. It should also aim at creating widespread awareness among parents about RTE Act to make them realise the power instead of plight of RTE. A paper titled, 'Teacher's perception and practice about nature-based teaching at the Pre-primary level' explores the ways in which young children learn about the natural world by interacting with it. Teachers and other

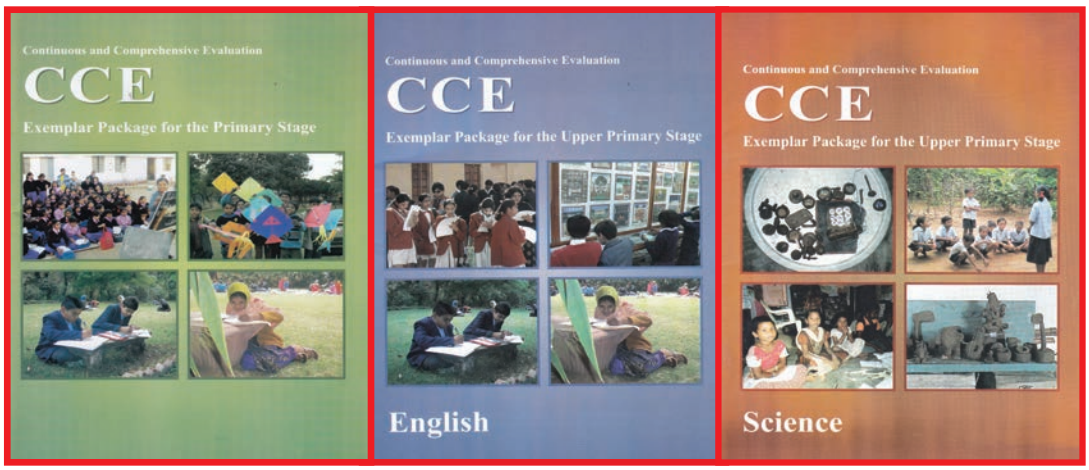
adults must attend to the frequency, nature, and the quality of interactions that take place between children and the natural world during the early years. Constant engagement aids them in the learning process and thus, facilitates their overall growth or holistic development. Also it implies that the awareness and attitude of teachers can be augmented through intervention programmes. Inclusion of natural environment components in the preschool curriculum needs strengthening.

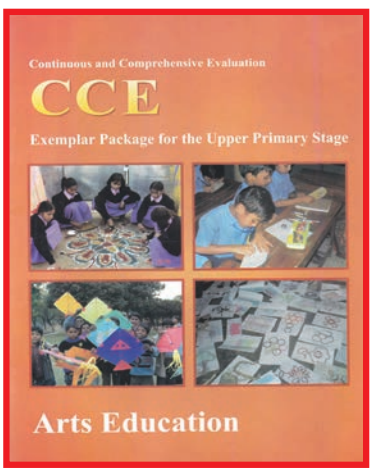
The other articles in this issue are 'Concept Mapping as a successful tool of teaching-learning and evaluation in primary grades'; Study of Four Main Pillars of Quality Education in Mobile Learning Centre (Delhi) and an interesting reflection on the elementary education in Arunachal Pradesh.

These articles reflect on the nature of teachers' professional development, covering a wide range of needs and contexts, including sharing the information of varied practices and insight on how technology can benefit teachers. It is up to teachers and educators to make optimal use of them.

— Academic Editors

Recent Publications for Elementary School Teachers





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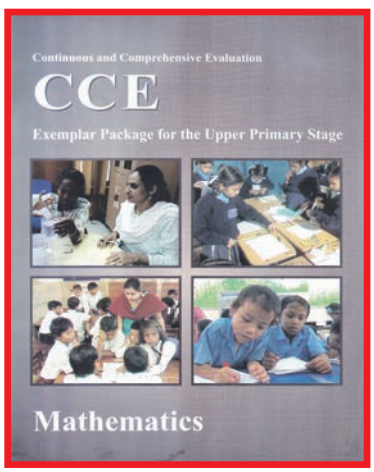

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NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

1

ECE and Quality Education for all

Rampal Singh*
Ajit Singh**

Abstract

The first five to six years of a child's life is very crucial as during this period as about 80 per cent of the brain development takes place. Early childhood education influences intellectual development besides fostering social and emotional development. There is also research evidence that high quality early childhood education has long term positive effect on children's learning and subsequent school success. Early childhood education produces meaningful gains in cognitive, social and emotional development during the preschool years. There is research evidence that the dropout rate among those who receive early childhood education is much lower than those who do not receive. It further facilitates achieving of the goal – elementary education for all.

The Early Childhood Education is presently in the hands of Anganwadi Centres (AWCs) which run under Integrated Child Development Services (ICDS). The coverage of children for ECCE is very low – 40 per cent. This is because country has presently approximately 60 million children in the age-group 3-6. Of these, approximately 26 million children only are being covered under ICDS. Most of the time, AWCs are undertaking activities geared to nutrition and other small components. As such very limited time is devoted to the education of children. Further the Anganwadi workers have very limited knowledge about child development.

Early Childhood Education is predominantly in the hands of private schools which are run by entrepreneurs primarily with profit motive. The access to early childhood education is limited to children belonging to better-off families.

The Government has yet to accept the responsibility for quality early childhood education for all. The government should make early child education free and compulsory for all by amending the RTE 2009 suitably.

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Eliminating Poverty – The Challenge

Millions of people are reeling under poverty in India. It is estimated that of 1.21 billion people, about 40 per cent are living in extremely poverty. They are leading a very miserable life. There is hardly any magic lamp through we can eliminate poverty. The only viable approach to meet the challenge is quality basic education. Quality basic education is the only means of fighting poverty at all stages and in different contexts. It reduces the vulnerability of under-privileged population to poverty by providing them with a set of production and livelihood skills. Education can thus, be a lever to start making a difference in the lives of the poorest of the poor.

Early Childhood Education and Quality Basic Education for All

Learning begins at birth. The first five to six years of a child's life is very crucial as this period helps an individual for his/her long life development. About 80 per cent of the brain development of an individual takes place in this crucial period. A child is bestowed with innate curiosity. He/she has a strong urge to acquire knowledge of his/her environment. Learning is a natural instinct in young children. Early childhood education influences intellectual development besides fostering social and emotional development. There is also research evidence that high quality early childhood education has long term positive effect on children's learning and subsequent school success. Early childhood education produces meaningful gains in cognitive, social and emotional development during the preschool years. Further it better prepares children to meet the complex demands of formal schooling. It checks dropout rate at the primary and upper primary level. There is research evidence that the dropout rate among those who receive early childhood education is much lower than those who do not receive. It further facilitates achieving of the goal – elementary education for all.

Status of Early Childhood Education

Article 45 of the Indian Constitution makes provision for Early Childhood Care and Education (ECCE) to all children in the age group 0-6. The Article 45 reads as "the State shall endeavour to provide ECCE for all children until the complete the age of six years". Since Article 45 falls under Directive Principles of State Policy of the Indian Constitution, it is therefore, not a justifiable right of every child.

The ECCE is provided to children under the Scheme *Integrated Child Development Services (*ICDS). The ECCE has two components – early childhood care and early childhood education. The Govt. has opened Anganwadi Centres to provide ECCE to children. These centres provide care for new born babies as well as ensure that all children below the age of 6 are immunized or in other words have received vaccinations. They are

also expected to provide antenatal care for pregnant women and ensuring that they are immunized against tetanus etc. They are also providing necessary supplementary nutrition to children. Besides their duties include inter-alia to provide preschool education/ECE to children who are between 3 to 6 years.

Coverage of Children in Anganwadi Centres (AWCs)

According to Annual Survey of Education Report (ASER, 2011), there were 4,56,994 ICDS Centres in India. Around 25 million children were enrolled in these centres. But only 31 per cent of them attended and participated in these centres on a continuing basis. The coverage of AWCs is very limited. This is because the country has presently approximately 60 million children in the age-group 3-6. Of these, approximately 26 million children are being covered under ICDS. Despite the regular expansion of the ICDS centres, the coverage of children for ECCE is as low as 40 per cent.

The uncovered and unreached children of ECCE are found in both rural and urban areas. In rural areas, they are located in isolated and remote hamlets, dalit hamlets and settlements. In urban areas, these are in slums in which construction workers, and rural migrants etc. live. In light of this situation, access to early childhood education is limited. Children belonging to disadvantaged sections of society and households of the poorest of the poor are worst hit in this regard.

Quality of Early Childhood Education

Most of the time, AWCs are undertaking activities geared to nutrition and other small components. This is because the Anganwari workers are not able to deal with the psycho-social needs of the children. Further the minimum qualification for the position of a Anganwari worker is either 10th or 10+2 standard in most of the states. However, many Anganwari workers are even under-matriculates. Thus they do not possess any certificate or diploma in education. They do not have any grounding in the pedagogy of early childhood education. Therefore, they are not able to address the learning needs of children besides psycho-social needs. They are also not able to prepare them for primary education. In view of the situation, the access and coverage for the early childhood education does not mean much if the system is functioning in this manner.

Early Childhood/Pre-primary Education and Private Schools

Early childhood education is predominantly in the hands of private schools which are run by entrepreneurs primarily with profit motive. They charge tuition fees and allied charges including donation. Tuition fees charged by them differ from school to school. There is hardly any government control over their

admission policy and quantum of tuition fees. The pattern of the tuition fees etc. is determined by the market forces. Some government primary schools run by Municipal Corporation of Delhi also provide pre-school education/ECE. But the number of such schools is very limited. Most of the un-aided private schools which are known as un-aided public schools are located in urban or semi-urban areas. The number of such schools is very limited in rural/remote/tribal areas. Since the percentage of un-aided public schools is not more than 20 per cent of the total schools, the access to early childhood education is limited to children belonging to better-off families. However, un-aided public schools are increasing access to early childhood education.

Government Policy on Early Childhood Education

The government is yet to accept the responsibility for quality early childhood education for all. Its policy is reflected in the Right of Children to Free and Compulsory Education Act-2009. Clause 11 of the RTE, 2009 specifies that "with a view to prepare children above the age of three years for elementary education and to provide early childhood care and education for all children until they complete the age of six years, the appropriate Government may make necessary arrangement for providing free pre-school education for such children".

None of the state governments in India so far owned the responsibility for providing pre-school education to all the children in age-group 3 to 6. Recently in Delhi, the Department of Education has taken initiative to develop norms for admission of children to pre-school/early childhood education and to regulate tuition fees etc. Such initiatives are more or less conspicuously absent in other states. In view of the situation, early childhood education is not integral part of India's education system.

The government has not so far developed any comprehensive policy to increase access to ECE and to improve its quality. The government is not earmarking any financial resources to increase access to ECE and to improve its quality.

Pre-service and In-service Training of Early Childhood Teachers

There is paucity of professionally trained early childhood teachers. This is primarily due to the reason that they are very limited number of colleges of education preparing for early childhood teachers. The existing colleges of education preparing for early childhood teachers are in the private sector only.

The Govt. of India has set-up National Council for Teacher Education (NCTE) for regulating teacher education programme both at the elementary and secondary level. This body is required to maintain standards in teacher education. It has developed norms regarding infrastructure facilities and teaching workforce. All the colleges of education

need to seek accreditation from the National Body for their different courses in education before admitting students. This body is not mandated to regulate the quality of education being imparted by early childhood colleges of education. Similarly facilities for professional development of early childhood teacher educators are hardly available.

Early childhood teachers and teacher educators are mostly women. However, both men and women constitute supporting staff in early childhood colleges of education.

In the light of above paragraphs, it is evident that early childhood child education is a must for every child to prepare him/her to meet the complex demands of formal schooling. It also prepares him/her to receive later education. This is highly essential to achieve the goal - quality education for all in India. It is therefore absolutely essential that the Government of India takes-up this responsibility and amend the Right of Children to Free and Compulsory Education Act-2009 to include early child education. This would ensure that each child irrespective of his/her parents social and economic status receives quality elementary education.

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RTE Act 2009: Power or Plight for a Parent?

Anjali Sharma*
Neha Rawat**

Abstract

The paper is themed on the fact that RTE Act2009 came into force with a hope of change for parents as well as children. The main discussion point is that, whether the children have actually got benefitted by it and parents have got the long-awaited breath of relief or not. Another focus point is, will this Act shorten the gap between underprivileged and middle class family children by bringing equal educational opportunities for all. From the following discussion, it can be stated ostensibly enough that RTE's implementation has further broadened the gap between two economic strata, leaving parents of both the groups wondering how RTE has changed the educational scenario. Finally the paper suggests that to gain its aspired results the government should take some steps like common school system in which all the groups can come onto one platform. It should also aim to create widespread awareness among parents about RTE Act to make them realize the power instead of plight of RTE.

KEY WORDS: Right to Education Act, Power, Plight, Parent

Conceptual background

From its genesis to the final avatar the Right of Children to Free and Compulsory Education Act, 2009 (RTE Act) has travelled a long haul to finally grace the children of nation with the power of free and compulsory EDUCATION in their hands. Ever since its implementation it has been a source of great joy and hope for nation's politicians, educationists and social activists. For educationists like us it has brought double reasons to celebrate for we are teacher as well as parents whose utmost concern is their child's education. But surprisingly, with passage of time as the understanding of RTE

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grew, lots of questions and doubts regarding successful implementation of RTE have started arising. Now, after reading lots of articles about it from different perspectives and coming to know stories of its practical implementation in schools, has turned these doubts to deep disappointment.

We know that the sole aim of RTE is to empower nation's every child with education, therefore to make it a success, it becomes essential for every child to understand and use his right to get the education he aspires for himself. But in reality a child cannot do this on his own, it is his parents who actually have to understand and use the power of RTE on his behalf to ensure free and compulsory education for him. But what are the experiences a parent undergoes when he goes out to seek education for his child under RTE Act? Which class of parent has got privileges and in what manner child is being benefited by RTE? Here, it may be a debate that is RTE is a flag for lower income families only since middle class family and higher economic group has no effect of it. This article is an attempt to focus and raise such issues related to RTE from parent's prospective. It tries to identify and find possible solutions of various problems from a parent's standpoint while trying to secure quality education for his child under the umbrella of RTE.

To create a clear picture of the theme discussion is made under following points:

- Journey of Right to Education Act 2009
- RTE's directives for parents
- Privilege provided to BPL class children
- Privilege provided to Middle class children
- Suggestion for better implementation of RTE

Journey of Right to Education Act, 2009

RTE has adopted its present shape after numerous bouts of debates among eminent educationists, politicians, social activist and civil society members. Let us have an overview of the milestones of difficult journey of RTE from a rough draft to an act promising a brighter future for coming generations.

Acharya Ramamurti Committee

The inclusion of right to education has been a matter of great debate ever since the beginning of drafting of Indian constitution. The constituent Sub-committee on Fundamental Rights recommended the inclusion of right to primary education as a fundamental right in constitution but the Advisory Committee of the Constituent Assembly rejected this proposal and put it in the category of non-justifiable fundamental rights also called as directive principles of State Policy. It was the Acharya Ramamurti Committee that made an effort for the first time in1990 to include fundamental right to

education in constitution by making an officially recommendation of its need for the nation. On the 5-9 March of the same year India participated in the World Conference on Education for All in Jometian and adopted World Declaration on Education for All. This has increased international pressure on India to make education a fundamental human right but it remained postponed for a couple of more years.

Supreme Court's decision on Mohini Jain and J P Unnikrishnan Case

In 1992 The Supreme Court for the first time recognised the right to education as a fundamental right in Mohini Jain case vs. Union of India (1992) 3 SCC 666. This judgment stated that Right to life comprises of all those rights which are basic to dignified enjoyment of life. So Right to Education flows directly from Right to Life. The Right to Life under Article 21 and the dignity of an individual cannot be assured unless it is accompanied by the right to education.

In 1993 the Supreme Court narrowed the ambit of the fundamental right to education as propounded in the Mohini Jain case in the case of J P Unnikrishnan vs. State of Andhra Pradesh, 1993 SCC (1) 645. The Court observed that The right to education which is implicit in the right to life and personal liberty guaranteed by Article 21 must be constructed in the light of the directive principles in Part IV of the Constitution. So far as the right to education is concerned, there are several articles in Part IV which expressly speak of it. It is in the light of Articles 45, 46 and 41 that the content and parameters of the right to education have to be determined. Right to education, understood in the context of Articles 45 and 41, meant: (a) every child/citizen of this country has a right to free education until he completes the age of fourteen years and (b) after a child/citizen completes 14 years, his right to education is circumscribed by the limits of the economic capacity of the state and its development.

RTE Coming into Force

In 2002, for the first time in independent India's history a fundamental right had been added to the Constitution. The 86th amendment to the Constitution introduced Article 21-A making the right to education a fundamental right. In subsequent years several drafts of bill had been made until finally, in 2008, the Union Cabinet stamped its seal of approval on it. It was then passed by the Rajya Sabha in July 2009. The bill then proceeded to the Lok Sabha, where it was passed by the house on August 2009 but RTE act finally came into force on 1, April 2010.

RTE's Directives for Parents

Before discussing the reality of RTE Act as most of parents from different class realised, it is essential to quote directions given by RTE to parents for their children's education. *The Gazette*

of India, RTE act 2009, Chapter III named *DUTIES OF APPROPRATE GOVERNMENT; LOCAL AUTHORITY AND PARENTS* enlists duties of local government and parents for a child's education. Page 5, clause 10 of the same chapter states duties of parents for child's education which is, "*it shall be duty of every parent or guardian to admit or cause to be admitted his or her ward, as the case may be, to an elementary education in the neighbourhood school.*"

To understand the full implications of clause we must discuss the meaning of some of the terms used in the above clause described in the chapter I of The Gazette of India.

- "Elementary education" means the education from first class to eighth class.
- "guardian" in relation to a child means a person having the care and custody of that child and includes a natural guardian appointed or declared by a court or a statue.
- "parents" means either the natural or step or adoptive father or mother of a child.
- "school" means any recognized school imparting elementary education and includes-
  - (i) A school established , owned or controlled by the appropriate government or a local authority;
  - (ii) An aided school receiving aid or grants to meet whole or part of its expenses from the appropriate Government or the local authority;
  - (iii) A school belonging to specified category; and
  - (iv) An unaided school not receiving any kind of aid or grants to meet its expenses from the appropriate government or the local authority.

In the same context it becomes necessary to mention that RTE not only enlists various duties but also privileges for the parents. The Chapter IV named RESPONSIBILITIES OF SCHOOLS AND TEACHERS in the Gazette of India of RTE Act, mentions the privileges given to underprivileged children as well as children from all strata of society under section 12&13,

12. (1) For the purposes of this Act, a school, –
  - (i) specified in sub-clause (i) of clause (n) of section 2 compulsory elementary education to all children admitted therein;
  - (ii) specified in sub-clause(ii) of clause (n) of section 2 shall provide free and compulsory elementary education to such proportion of children admitted therein as its annual recurring aid or grants so received bears to its annual recurring expenses, subject to a minimum of twenty-five percent;
  - (iii) specified in sub-clauses (iii) and (iv) of clause (n) of section 2 shall admit in class I, to the extent of at least twenty-five per cent of the strength of the class, children belonging to weaker section and disadvantaged

group in the neighbourhood and provide free and compulsory elementary education till its completion.

(iv) Provided further that where a school specified in clause (n) of section 2 imparts pre-school education, the provisions of clauses (a) to (c) shall apply for admission to such pre-school education.

13. (1) No school or person shall, while admitting a child, collect any capitation fee and subject the child or his or her parents or guardian to any screening procedure.

(2) Any school or person, if in contravention of the provisions of sub-section (I), –

(i) receives capitation fee, shall be punishable with fine which may extend to ten times capitation fee charged.

(ii) subjects a child a screening procedure, shall be punishable with fine which may extend to twenty-five thousand rupees for the first contravention and fifty thousand rupees for each subsequent contravention.

The statement mentioned in clause 10 clearly states that it is responsibility of every parent to send his ward to school. But here question arises that isn't it natural wish of every responsible parent to provide his child best of care, food and education? That's a question whose answer is obviously yes, any parent with normal living conditions will provide his child best of education. Then what are the reasons which inhibit some parents from sending their wards to school? The most prevalent reason is their poor economic background; many below Poverty Line families can hardly make arrangements for a single meal per day. Apart from this there are also some other reasons like social stigmas, geographical conditions and illiteracy which inhibit parents from sending their wards to school. But here it is interesting to mention that many parents of BPL families, who can send their wards to completely free government school, are not willing to send them to government schools due to overall poor quality of education in terms of teaching, infrastructure, and facilities. They rather strive to send their wards to private school. RTE has primarily been given to this underprivileged group of parents to provide their children with quality education completely free. But there are many flaws in the act which turn this power for a parent to plight. Let us consider the various implications of RTE for parents of different economic strata by looking closing at gaps between written clauses of RTE and practical implementation of it by schools.

Privilege provided to BPL Class Children

RTE gives special privileges to children of underprivileged families. Above stated clause 12 of RTE act clearly states that 25% of the strength of

the class I will be reserved for the children of underprivileged families. These underprivileged children will enjoy all the facilities of "free and compulsory" education given in the act. But ironically, actual situation of implementation of RTE act is just opposite. To know the ground realities of implementation of RTE it is necessary to share some real life experiences of parents from BPL background who are seeking admission for their children under RTE act. There are stories of people who hail from poor economic background and many of them can hardly fulfil their daily needs of food, cloth and shelter but want to give their kids good education. One such experience had unfolded when I asked my domestic help that now she could easily afford to send her children to a good private school due to RTE reserved seats. She told us that she was already sending them in a nearby reputed private school under RTE seats but in vain as it was as bad as any government school. She further explained, they have different shifts in evening for children under RTE where teachers come for 2-3 hrs and teach all the subjects. Now one can easily imagine how benefitted a kid would be by studying all subjects in 3 hrs in spite of regular 6 hrs of a school curriculum. This should not come as a surprise to anyone because there are many prevalent ways schools have devised to bypass RTE rules and regulations. There are common occurrences of noncompliance with RTE by maintaining fake registers with fake names of children registered under RTE. Parents of BPL family have to face non-cooperation during admission process also. In some schools staff try not to give admission form to parents on various pretences like incomplete documents or last date of form etc. In one case a father of BPL family had to run pillar to post for a month just to get the form for RTE seats. Parents from BPL families due to their lack of resources and awareness cannot do much about the situation.

Privilege provided to Middle class children

Now there is another side of story of children of middle class/higher middle class families which is equally disheartening as the one in the previous section. Middle class is perhaps the most undervalued among all the social strata and is bearing biggest resentment from RTE. It is this class which struggles throughout their life to fulfil their aspirations of providing their children with the best of education. Majority of middle class families have both husband and wife working. The children from such families who are coming under 75% are not receiving any financial benefit of FREE education (which is the biggest blessing of RTE) from RTE. Though RTE act, does entitle these 75% children to certain sets of rights to ensure quality education for them. These rights can be enlisted as mentioned in Chapter IV named RESPONSIBILITIES OF SCHOOLS

AND TEACHERS in Gazette of India of RTE act, under section 13.

RTE is full of provisions which give children of middle class families various rights apart from right to free education to improve quality of education in terms of school building, teacher's training, teaching aids, student's need and other facilities. But regrettably, children are not even able to avail benefits of these rights fully. Schools have devised way to put burden of 25% percent free seats on parent's shoulder. Such an instance of violation of RTE is, where an A-class school or elite school has put forward a condition of bearing any one child's education taken under RTE quota, in front of parents to secure admission of their ward in that reputed school. See the plight of parent's of those 75% children who are not receiving any financial benefit of RTE and on top of that they have to bear the burden of education of another child if they want their kids to go that elite school. Many schools are still subjecting parents and children to some form of screening procedure also. One such prestigious school conducts an interview and gets a question form filled by parents to give admission to children. It has multiplied their plight and probably the biggest failure of RTE.

Suggestions for better implementation of RTE

From above discussion we can conclude that neither child from underprivileged nor privileged sections of society are getting full benefits of right to education handed over to them as power in their hands. It is obvious that there is no provision of free and compulsory education "For All". Free education is there for underprivileged children of society and there is certain group of rights given to all children to facilitate process of schooling. Now these rights are to be abided by the concerned school authorities at the ground level to make RTE a success. But then it is equally necessary that parents also should take strong steps by registering complaints of violations of RTE to the concerned authorities. Final section of this article discusses two ways suggested as under by which we can together make RTE "a dream come true".

Parent's initiative by educating themselves about RTE

Generally we assume that government has prime role on issues of social interest. It is government who has to implement things and disseminate its benefits to all. But as citizens we are equally responsible for successful implementation of RTE. Sadly majority of parents just know that there are 25% free seats available for their wards under RTE in BPL quota. Leave alone parents, experienced teachers and other academicians of reputed schools are not aware of it. They just know that one more fundamental right has been added to course book which is to be taught to the students. Hardly any of them know the intricacies and full power of RTE act. RTE Act's CHAPTER VI PROTECTION OF RIGHT

OF CHILDREN specifies how and where to handle grievances of parents facing violation of RTE act at different levels. Clauses 31 and 32 of the above chapter regarding this are as follows:

31. (1) The National Commission for Protection of Child Rights constituted under section 3, or, as the case may be, the State Commission for Protection of Child Rights constituted under section 17,of the Commission for Protection of Child rights Act, 2005, shall, in addition to the function assigned to them under that Act, also perform the following functions, namely –

(a) examine and review the safeguards for rights provided by or under this Act and recommend measures for their effective implementations.

(b) inquire into complaints relating to child's right to free and compulsory education; and

(c) take necessary steps as provided under sections 15 and 24 of the said Commission for Protection of Child Rights Act.

32. (1) Notwithstanding anything contained in section 31, any person having any grievance relating to the right of a child under this Act may make a written complaint to the local authority having jurisdiction.

(2) After receiving the complaint under sub-section (1), the local authority shall decide the matter within a period of three month after affording a reasonable opportunity of being heard to the parties concerned.

(3) Any person aggrieved by the decision of the local authority may prefer an appeal to the State Commission for Protection of child Rights or the authority prescribed under sub-section (3) of section 31, as the case may be.

In light of the above facts it is strong need of the hour that a widespread program for creating awareness towards RTE should be initiated. Government has already set up agencies for grievance handling in the form of The National Commission for the Protection of Child Rights investigating complaints in civil courts. At state levels a State Commission for the Protection of Child Rights (SCPCR) or the Right to Education Protection Authority (REPA) is there to handle a complaint. And for this cause not only government representatives but academicians, social workers, advocates, media persons and other members of civil society should also come together. Here media's role can be significant in creating widespread awareness about RTE through print and non-print media. From above discussion it is clear that RTE's successful implementation needs lots of willpower from parent's side also. It is our duty as a civil society to understand and implement rights given to us especially when it is matter of right of our children. It has now become mandatory for all parents to take initiatives to avail Right to

education for their children's better life. And if parents are not well aware of RTE, then off course this is duty of civil society to create awareness regarding RTE. For the success of RTE it is necessary for parents to understand all the aspects of RTE and their implications. It is not just inapt but also unjust to rely completely on government for such initiatives.

A Bias-free Education system: Common school system

Indian school system is being dominated by class division. There are government and private schools basically. Private schools also have category. There are A-class schools or elite schools, then B-class schools and finally C-class schools in private schools. This multilayered school structure hinders a child's right to equal opportunities of education. Government must device a common school system to provide equal opportunities to every child then only purpose of RTE to reach to every child would be fulfilled. A Common School System (CSS) means a system of education providing education of an equitable quality to all children irrespective of their caste, creed, community, language, gender, economic condition, social status and physical or mental ability. This definition draws heavily from that contained in the Report of the Education Commission (1964-66), also known as the Kothari Commission. As the Education Commission points out (Paragraph 10.05) "the system should be maintained at an adequate level of quality and efficiency so that no parent would ordinarily feel any need to send his child to the institutions outside the system...". The CSS must provide good infrastructure, well-qualified and trained teachers and optimal teacher-student ratios, common curriculum framework and a pedagogy which is holistic and child-friendly to provide the fullest opportunity for socialization to the children coming from a variety of socio-economic, cultural and other backgrounds, including the dalits, tribal's, religious and linguistic minorities and physically and mentally challenged children. It also includes the higher economic strata children.

Here it is imperative to mention that a common school system will not only ensure quality of education in terms of teaching, infrastructure and academic achievement but it will give chance to all students from different economic group to mix together. Such system will sensitize children towards each other's problem and lifestyle which in turn inculcate in them respect for all members of society. So a common school system would be a great step towards making a better society and definitely provide equal opportunities of education fulfilling goals of RTE in long run. The Kothari Commission has appropriately summed it up as: "We believe that the provision of free and universal education for every child is a national objective of the highest priority, not only on grounds of social justice and democracy, but also for raising the competence of the average

worker and for increasing national productivity".

Conclusion

To conclude above discussion it is to state that primarily parents should be fully aware of their rights because a child himself is not capable of availing the benefits provided to him by RTE Act. Parents must come forward to register their complaints to concerning bodies instead of bearing the misconduct. They should empower themselves in such a way that they get benefit of this right in true sense. And secondarily government and civil society members must also walk hand in hand to create awareness among parents. Also government should take initiatives for common school system to develop holistic way of education for all strata of society.

REFERENCES

Malhotra, Ramesh. 2011. "Rights to Education: Free and compulsory Education for All". D.P.S. Publishing House, New Delhi.

Government of India (GoI). 2009. 'Right of Children to Free and Compulsory Education Act, 2009' *Gazette of India, 27 August.*

—. 2012. 'Right of Children to Free and Compulsory Education Act, 2009: The 2nd Year'. Department of school Education and Literacy, Ministry of Human Resource Development.

Teltumbde, Anand. *2012.* 'RTE : A Symbolic Gesture'. *Economic and Political Weekly.* Vol. 47. Issue No.19. May 12. 2012:10-11

Mehendale, Archana.2010. 'Models Rules for the Right to Education Act'. *Economic and Political Weekly*. Vol. 45. Issue No.4. 2010:9-12

Government of Bihar. 2007 "*Report of the Common School System Commission*". 8 June.

Acharya Ramamurti Committee. 1990. Government of India: "Towards an Enlightened and Human Society": NPE 1986: *A Review, Report of the Committee for Review of National Policy on Education* [Chairman: Acharya Ramamurti]. Government of India Press.

Education Commission. 1966. *Education and National Development: Report of the Education Commission* 1964-66. Ministry of Education, Govt. of India.

Supreme Court Cases:

Mohini Jain v. *State of Karnataka,* (1992) 5 SLR 1 (SC)

Unni Krishnan J.P. v. *State of Andhra Pradesh*, (1993) SOL 051.

Internet resources:

http://www.azimpremjifoundation.org/Right_to_Education

http://www.thehindu.com/features/education/article52269.ece

http://www.azimpremjifoundation.org/pdf/Seminar-Backpage-March-2010.pdf
http://educationworldonline.net/index.php/page-article-choice-more-id-2288
http://indiatoday.intoday.in/education/story/sc-issues-notice-to-central-state-governments-over-rte-plea/1/355371.html
http://azimpremjiuniversity.edu.in/lgdi/rtewatch

3

No Detention Policy – Why Do We Need It?

Sandhya Sangai*

Falling levels of achievement amongst children at the early stages of education has been bothering the planners and administrators of the education over a period of time. Having achieved universalisation of elementary education to a large extent, the quality of learning by children has been an issue which actually questions the achievement of universalisation of elementary education in a real sense. The reports of large scale achievement surveys, ASER, 2012 and NCERT achievement survey hints at the low levels of achievement amongst children of primary Classes. Often it is cited that children of class V are not able to read the text meant for class II level children. Such findings and revelations add to the worries of the education system and a whisper begins to spread 'where all the government money is going' Recently while exploring the factors which might be causing low level of learning by children, many stakeholders in education pointed towards the 'No Detention Policy' (NDP) as a major reason for persistent bad quality of learning resulting in poor learning outcomes. The same voice came from so many quarters that a CABE Sub-committee was set up for Assessment and Implementation of Continuous and Comprehensive Evaluation in the context of the No Detention Policy in the RTE Act, 2009. This sub-committee was chaired by Smt. Geeta Bhukkal, Former Minister of Education, Govt. of Haryana. The major recommendation (not unanimous) of the sub-committee is to do away with the provisions of No Detention up to class VIII. Encouraged by this recommendation many groups including media got involved in heating up the discussion on the Non Detention Policy under the RTE Act. Many state governments started writing to the MHRD for an amendment in the RTE Act to detain children post Class III or V.

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While raising the argument, it was also realised that there was a dearth of researches and informed discussions which would have given a rationale for making or not making the amendment. This paper briefly presents the issues related to NDP which need a careful attention from the stakeholders to build up their opinion for retaining or rejecting or modifying the existing NDP.

No Detention Policy and the RTE Act, 2009

The RTE Act, 2009 provides a legal framework for article 21-A of the Indian Constitution. The article states that the State shall provide free and compulsory education to all children of the age of six to fourteen years in such a manner as the State may, by law, determine. This is a significant step towards public provisioning of elementary education in India. There are two sections of the Act, section 16 and section 29 (2) (h) which are concerned with the 'No Detention of Child up to elementary classes' and 'Continuous and Comprehensive Evaluation' of children's learning respectively. These two provisions have majorly attracted the discussions and several concerns are being raised.

The much-awaited Right to Education (RTE) Act 2009, besides making education a fundamental right for children in the age group 6-14 years, also made it mandatory that "no child admitted in a school shall be held back in any class or expelled from school till the completion of elementary education." It also proposed "Continuous and Comprehensive Evaluation of a child's understanding of knowledge and his or her ability to apply the same" and said, "no child shall be required to pass any board examination till completion of elementary education."

— Disha Nawani, Learning beyond textbooks

Many members in several committees do not avoid commenting that children have become irresponsible and they do not want to study as they know that they are not going to lose anything by not studying. Teachers are also found blaming children and parents for poor achievements and falling quality of education in foundational years. Parents are also not left behind. They hold teachers responsible for not taking teaching seriously. This blame game continues and the child who is actually the victim of the entire game finally remains at the loss. My sister who is a primary school teacher once told me, when I was discussing with her the potential effects of NDP, that parents often ask children to take chhutti for petty reasons, e.g. if there is a marriage in the neighbourhood or there is some guest in the house. This attitude not only affects loss in terms of classroom experiences but also encourages children for not taking school seriously. According to my sister the parents of government school children do not hesitate doing it because they are sure that their child will be promoted to next class in any

case. She further tells that parents of private schools are not found doing it as they know that their child may have to face the consequences of not being regular. Such state of affairs has in fact tarnished the image of government schools. If we analyse the situation from child's point of view, it can be imagined that no child likes to be a non-achiever. They are most keen to show their potentials provided they get a nurturing environment. However right from the beginning if they stay in a non-stimulating environment where nobody is interested to make them achievers they also start losing self-esteem. Further they may lose the desire to achieve. In a situation like this, can we imagine that a child would ever be able to make efforts strong enough which will help him to come up and do well? Rather her mind would always be restless, not knowing how to go forward in the absence of support. The whole idea behind detention is to use fear as the only motivation for studying. This leads to students giving more importance to the process of examination rather than actual learning. We need to think, keeping in view the dwindleness in the mind of the child, whether detention will be an answer to this dismal situation.

…Non-detention till class VIII should not mean acceptance of shoddy levels of learning. The need of the hour is an educational revamp at class I level itself. Students need to be motivated to learn at an early age, thus developing a healthy attitude towards learning. Then, detention can be brought in to the system from class IX onwards.

Archit Joshi, Non-Detention Policy-Valid Move

(September 07, 2015, The Week Magazine)

***Archit Joshi,** NON-DETENTION POLICY*

Rationale behind NDP

The NDP was introduced to arrest the dropout rate as failure was identified the main reason for dropout and repeated failure have been the major challenges in providing universalizing of elementary education. Yashpal Committee Report 'Learning without Burden" and National Curriculum Framework (NCF), 2005 developed by the NCERT are the major documents which speak on NDP and supporting assessment.

The NCF, 2005 has placed a lot of emphasis on school experiences and prior knowledge of the child. The conducive learning environment having a scope for discovery learning, exploring and activity based learning is a precondition for quality learning. There are so many other critical issues that affect learning. The Yashpal Committee Report comments that the teaching learning is dominated by examination system and merely the focus is on child's ability to reproduce the information, thus completely ignoring the ability of child to apply the knowledge gained and also other abilities which cannot be tested by a paper pencil test. The report says "Children receive the message almost

as soon as they start attending school that the only thing which matters is one's performance in the examination.

The NCERT, through NCF- 2005, has invited the attention of policy framers to bring about systemic reforms in the assessment of children's learning. The position paper on examination reforms (NCERT, 2005) discusses a system of assessment which would be non-threatening and rather be a tool for learning. The Source Books on Assessment for classes I-V developed by the NCERT, for all curricular areas, signifies NCERT's resolve to provide to teachers and administrators a new vision and approach for assessing children's progress. The existing system discourage teacher for recognising the important role that a cooperative classroom culture plays in promoting learning. The recent documents brought out by the NCERT- *An Exemplar Package on CCE* (for the primary and upper primary classes) and *Learning Indicators and Learning Outcomes at the Elementary Stage* would provide lot of guidance to teachers as well as to parents and adults to observe learning progression in their children and help them in learning by organinsing different types of activities and games.

The objective of developing CCE Package has been to facilitate implementation of NDP in its true spirit. 'No detention' should not be taken for 'no assessment'. CCE should be the evaluation technique under NDP where assessment is 'for learning'. The NDP and CCE complement each other and therefore must be seen together. In implementing CCE, the role of teachers becomes central to the entire process of teaching learning. However if we see the practical side of implementation of CCE, it is observed that teachers are worried and perplexed as they are required to complete lot of data and keep the records of each child's test scores. Instead of this laborious work they should rather be guided on how to integrate assessment with the teaching learning process as an essential component. Teachers generally consider CCE as an external activity, just contrary to the philosophy and spirit of CCE.

The past experiences have suggested that detention of students by a year or more does not improve learning. The Bhukkal Committee has also admitted that there is no research evidence that shows that repeating helps children perform better. But it does say that repeating has adverse academic and social effects on the child. Older system of failures and detention was recognised as detrimental to child's learning and motivation to learn. Teachers criticise NDP and CCE because they have not been given enough understanding about these and they are not aware about the philosophy behind these. In addition to these inhibiting factors, most of the teachers are not ready to experiment new ideas or solve problems having solutions within the classroom. Perhaps they also need mentoring for a relatively longer duration to implement CCE, modify

their pedagogic methods and improve children's learning levels. Parents are also found not adjusted with NDP and CCE as they are more familiar with promotions and detentions to calibrate their child's learning. Most of them do not try to know about CCE, they are sometimes not interested to get aware about the philosophy of CCE, principles behind it and how it can help to accelerate the learning pace of their children. Generally a lot of money is spent on the training and orientation of teachers but it is high time to organise awareness generation programmes for parents and involve them as responsible stakeholders for education of their children. In case of younger children, studying in primary and elementary classes, this becomes all the more necessary to create a congenial learning environment for the children.

Conclusion

The discussion above spells out that there is a need to carefully look at the issues inhibiting the desired implementation of NDP along with CCE. Both the policies are constructive and positive. Reward should work better than punishment and hence the situation calls for an intervention. The thinking behind bringing in the no- detention policy was perhaps that conduct of exams at times when children are in the process of building up their learning experiences and aspiring for a higher quality of life may be detrimental to their journey of education. The younger children especially those belonging to the first generation of learners in their families always deserve a positive reinforcement and emotional support from adults, may be teachers or parents or others. The thinking that 'non-detention' policy has caused fall in the quality of elementary education is not justified. Perhaps the policy has not been understood in the right perspective. Most of the teachers believe that a certain quality can be maintained only when the class has no 'low achievers', again a matter of their own perception. Is it not the time when instead of blaming poor children and their parents, the teachers realise their duty and be ready to show tangible proof of what they have accomplished. A teacher's job is to help the children learn by creating a stimulating and non-threatening environment. This is of course a challenging job but at the same time it is a sacred mission for a teacher. If the teacher succeeds in his job, there will be no need to fail a child.

The urge to bring back the detention policy may not assure the expected improvement rather it may push children who are not promoted to next class to withdraw from the system due to demotivation. It is doubtful whether detention is the only solution to improve the learning levels of children as those who would be detained would not know what to do and how to come back. The solutions may be seen in terms of better implementation of NDP and CCE with a dialogue with teachers, reducing the rules for filling up too many recording

proformas, encouraging children to participate in learning process, involving the community and parents whole heartedly and sharing with them the responsibilities of learning by children. Keeping the child's interest in the focus, having trust and faith in them and respect for their dignity would help every child feel comfortable in the journey of their educational life.

REFERENCES

GOVERNMENT OF INDIA. 1993. *Learning without burden: Report of the National Advisory Committee* (known as Yashpal Committee). Ministry of Human Resource Development, New Delhi, India.

NCERT. 2005. *National Curriculum Framework 2005*. National Council of Educational Research and Training. New Delhi, India.

— 2006. *NCF Position Paper: National focus group on examination reform*. National Council of Educational Research and Training, New Delhi, India.

— 2015. *Continuous and Comprehensive Evaluation- Exemplar package for Primary Stage*. National Council of Educational Research and Training. New Delhi, India.

— 2015. *Learning Indicators and Learning Outcomes at the Elementary Stage*. National Council of Educational Research and Training. New Delhi, India.

NAWANI, DISHA. 2014. Learning beyond textbooks, http://www.thehindu.com/todays-paper/tp-opinion/learning-beyond-textbooks/article6656710.ece

SHARMA SANTOSH. 2014. *What is RTE-Some Ways of Making Education Accessible*. New Delhi, India.

RAMADAS A. 2015. *The Week Magazine (An online magazine)*

4

Why CCE Still a Challenge?

Roohi Fatima*

Introduction

On 6 March, 2014, there was an article in the newspaper, *The Times of India*, titled, "CCE has improved scores, not teaching". In this article, a conversation with the CBSE Chairperson Mr. Vineet Joshi has also been published; the conversation, concluded "Shift in teaching methodology still a challenge". This article raised some questions such as: why teaching has not improved, even after so many efforts? Or, Why Continuous and Comprehensive Evaluation still a Challenge? Or, is the attitude of teachers played any role in it? The following article is an effort to find out the answers of these questions as well as to study the Attitude of Teachers of Government and Non-Government Schools towards Continuous and Comprehensive Evaluation.

Continuous and Comprehensive Evaluation

Amendments in the examination system are frequently recommended, sometimes discussed and exceptionally implemented. One of such amendment which has undergone a nasty journey is the introduction of grading system in assessment. CBSE has replaced marks by grades for class IX in 2010 and class X board examination in 2011.

Evaluation does not mean measurement of learning outcomes' level only, but it acts as an approach for reconstructing the system. It should be diagnostic and formative in nature so that it can contribute in remedial measures for the students. Moreover, it should be of summative in nature and a valid measure of the growth and development of the child. Evaluation authorises the Childs' level of achievement only at a particular time. Basically the written tests are a one-time mode of assessment only and to depend on it for taking a decision about the development of the child is prejudiced. It leads to the perception, which the children have, about the assessment that it is different from learning due to over emphasis on examination marks which focus on

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only scholastic aspects of the child and hence resulting in the 'learn and forget' problem. The stress on summative assessment system not only creates excessive stress and anxiety among the children but also, encouraging the unhealthy competition. It is this that hassled to the evolution of the Concept of Continuous and Comprehensive School – based Evaluation.

The concept of continuous and comprehensive evaluation was introduced mainly to compensate the deficiency in our external examination system. The realisation of the issue that the student's performance should be assessed in both scholastic and co–scholastic aspects; is the result of rising importance of life skills.

Continuous and Comprehensive Evaluation is a school based evaluation system that covers both the scholastic and co–scholastic aspects to make the evaluation comprehensive. The scholastic aspect covers the cognitive domain whereas the co scholastic aspect covers affecting and psycho-motor domains and the assessment of co scholastic aspect refers to the assessment of student's performance in various co curricular activities including socio–cultural activities which are organized in and outside of the classrooms.

Continuous and Comprehensive Evaluation and Different Education Commissions

Different Education Commissions set up by the Government of India from time to time after Independence lays stress on the need to introduce the Continuous and Comprehensive Evaluation at the school level, they also comment on the quality of the external examination. The Secondary Education Commission i.e., the Mudaliar Commission in 1952-54 recommended that , "—the final assessment of pupil should not be based entirely on the result of external examination, other things such as internal evaluation and school records maintained by teachers should be taken into consideration and due credit be given to them." This recommendation was also recited by the Kothari Commission (1964-66), who underlined the importance of the internal assessment by saying that "the internal assessment or evaluation conducted by schools should be comprehensive". National Policy on Education in 1986 also pointed out that "Continuous and Comprehensive Evaluation that incorporates scholastic and non- scholastic aspects of evaluation should spread over the total span of instructional time." And now, the NCF (2005) in its Position Paper on Examination Reforms states that "External examinations are largely inappropriate for the knowledge society of the 21st century and it needs for innovative problem solvers, questions should be framed well, so that it does not lead to rote memorisation and they will not fail in testing the higher order skills such as reasoning, thinking, analysis, creativity and judgment. External exams make no support for different types of learners and

learning environments and it generate ordinate level of anxiety and stress. Hence, there is a need for a functional and reliable system of school – based evaluation and therefore in the light of NCF (2005) and the arising demands of a knowledgeable society, the CBSE introduced the concept of Continuous and Comprehensive Evaluation in schools since 2010.

Need of Continuous and Comprehensive Evaluation

The school-based evaluation of students that covers all aspects of students' development is referred as Continuous and comprehensive evaluation. Continuous and comprehensive evaluation is an assessment process which is developmental in nature and which emphasizes on objectives of continuity in evaluation and assessment of learning and the behavioral outcomes. Here, the term 'continuous' refers to the consistency in assessment, regularity in unit testing, diagnosis of learning gaps, use of corrective measures, retesting and feedback of evidence to teachers as well as the students for their self-evaluation. It is meant to emphasize that evaluation of identified aspect of students 'growth and development' is a continuous process erected into the total teaching – learning process and spread over the whole period of academic session. The other term 'comprehensive' means that the scheme attempts to cover both the scholastic and the co-scholastic aspects of student's growth and development. The term refers to application of range of tools and techniques and aims at assessing a learner's development in the area of learning such as: knowledge, understanding, applying, analyzing, evaluating and creating since the abilities, attitudes and aptitudes can manifest themselves in form other than the written word.

The scheme is thus a curricular initiative; try to shift emphasis from testing to holistic learning. It aims at creating valuable citizen acquiring sound health, relevant skills and desirable qualities besides academic excellence. It is hoped that this will equipped the learners to meet the challenges of life with confidence.

Need of the Study

Since it is the first time that CBSE has introduced CCE in CBSE affiliated school and has made a lot of efforts in implementing the scheme in the schools. An achievement record card was designed which reflects attainment of the student in scholastic and co-scholastic domains and separate assessment cards were also designed for primary stage and schools were advised to use these cards for comprehensive assessment of the students. Keeping in mind the local environments, necessary flexibility was provided to incorporate any changes in the assessment card suited to them. The aim of this document is to provide the holistic profile of the child without reflecting any negative remarks. For this, a five- points

grading was recommended to show attainment profile of the child. The Schools were advised to desist from declaring students pass or fail only on the basis of end of year single examination.

CBSE also, introduced Teacher's Manual on this scheme which contains detailed guidelines on the methodology of evaluation, school based assessment, assessment of scholastic and co-scholastic areas, techniques and tools of evaluation. Moreover, CBSE also conducts training programs for principals and teachers of all schools affiliated to CBSE so that all the school personnel like students, teachers, parents, principals and educational administrators could be involved in this collective attempt. The huge task of implementing the scheme of continuous and comprehensive evaluation involves the changing of the mindset of teachers as teachers are important pillars. It is important to find out the attitude of teachers on continuous and comprehensive evaluation and to find out the problems they face in the execution of the process and their suggestions making it effective and fruitful. It is this concern that has led the present author to find out the ground realities in government and non government schools regarding CCE. For this, she tries to study the attitude of school teachers of government and non government school towards CCE and any difference, if any, in their attitude?

Methodology

To meet the purpose of the present study, the author has used a self – constructed questionnaire with 20 Likert type statements for the assessment of attitude of teachers towards continuous and comprehensive evaluation. To develop the items of the questionnaire she undertook of examination reforms suggested by various commissions and committees, National Curriculum Framework 2000 & 2005 and Teacher's Manual on continuous and comprehensive evaluation, 2009 introduced by CBSE. The main objective of the questionnaire was to explore the attitude of teachers of the government and non-government school on continuous and comprehensive evaluation. The complete instructions were provided in the questionnaire so that the respondents find themselves free to respond.

Collection of Data, its Analysis and Findings

To collect the data, the author took the help of her B.Ed. students during the school practice teaching program. A sample of 60 IX Class Teachers (30 teachers from government and 30 teachers from non-government schools) of Delhi, were taken from different schools of Delhi on convenient bases. The teachers were asked to respond to each and every item by checking out one out of five responses namely strongly agree, agree, neutral, disagree and strongly disagree. The scoring was done by assigning the score 5 to

strongly agree, 4 to agree, 3 to neutral, 2 to disagree and 1 to strongly disagree for the positive statements and the vice versa for the negative statements. Then, the data was suitably analysed using the statistical technique-Mean value; Standard Deviation (S.D) and t-value were computed to test the proposed hypothesis that "There is no significant difference in the attitude of teachers of government and non government school towards continuous and comprehensive evaluation". The following table shows the Mean, Standard Deviation and value of 't' on the attitude of teachers in government and non-government school towards Continuous and comprehensive evaluation;

The above table indicates that

Type of schools	*No. of Teachers*	*Mean*	*Standard Deviation*	*Z Score value*
Government	30	63.7	9.05	2.40
Private	30	69	8.0	

Note: Not Significant at 1% levels but significant at 5% level*

the 'mean score' of government teachers is 63.7 and that of non-government teachers is 69. The SD of the government and non-government teachers are 9.05 and 8.0 respectively. The mean score of the non-government school teachers is higher than the government school teachers. This indicates that the non-government schools teachers are more satisfied with continuous and comprehensive evaluation. Also, the Z score value 2.40 is significant at 5% level but not significant at1% level, shows that there is a significant difference in the attitude of the teachers in the government and non-government schools on Continuous and Comprehensive Evaluation.

Teacher both in government and non government schools are agreed that the concept of CCE is very good but actually teachers are the only persons who are facing more problems under CCE. Register work has increased too much now and because of this, it has become difficult to handle a class with a large number of students. Again the teachers who are familiar with traditional teaching, they are facing a lot of problems under CCE since the students are getting more indiscipline.

Problems faced by Teachers in Implementation of CCE

Government as well as private teachers were having opinion that they face many problems while executing continuous and comprehensive evaluation and they are –

- Students are careless
- Large strength of class
- Maintenance of record is huge task by teachers
- Students attitude towards CCE
- Shortage of resources
- Students do not participate effectively
- Lack of proper training for assessment process in CCE

Suggestions by Government and Non-Government teachers to reduce problems related to implementation o f CCE

Teachers of both types schools suggested some measures to reduce problems related to CCE –

- Class strength should be reduced
- Training for teachers should be conducted through regular seminars and workshop
- Encourage students to be regular in the class
- Board exams must also be there along with CCE
- Criteria for Promotion to the next class should be based on performance in academics
- Regular conduction of parent – teacher meetings
- Students' attitude towards CCE need to be changed .They should be made aware about its purpose so that they can take this system seriously.

Teachers also suggest reducing record maintenance as is big burden on them. Teachers are not able to give best efforts in the teaching – learning process as most of them is utilised in maintain records of large number of students.

Therefore in can be concluded that collaborative efforts of teachers, students and even parent can lead to an effective and innovative learning environment for the students under continuous and comprehensive evaluation.

On the basis of her long experience of teaching, author wants to give some suggestions to the teachers;

- Teachers should appreciate the need to change the assessment system and cooperate faithfully in the effective implementation of the CCE. They should recognize their crucial role in making the CCE scheme a continuous and comprehensive evaluations
- They should take initiative to get oriented and offer services as master trainers
- They should adopt improved pedagogy for the benefit of students.

REFERENCES

Aggrawal, Mamta. 2005. Examination Reform Initiatives in India. *Journal of Indian Education.*Vol.31 , No.1, pp.27-35

Kaul, Lokesh.1984. Methodology of Educational Research. Vikas Publishing House Pvt Ltd.

Kumar ,T.Pradeep. 2014. Teacher Attitude towards Continuous and Comprehensive Evaluation. *Golden Research Thoughts*. Vol.3. No.8, pp.1-8

NCERT. 2000. *National Curriculum Framework for school Education.* pp. 93-122.

— 2005. *National Curriculum Framework*

Ramdas,V. and T. Divya, 2007. *Grading in Schools: Knowledge, Attitude and Practice of Elementry Teachers*. Edutracks. Hyderabad, Vol 6, No. 11, July 2007.pp.17-21

Rao, Manjula P. 2001. Effectiveness of the Continuous and Comprehensive Evaluation Training Programme over the Evaluation Practices of Primary School Teachers in Tamilnadu. *Indian Educational Review*. Vol .42, No.1, pp. 60 -78

Sharma, Kusum. 2013. Attitude of Teachers towards Continuous Comprehensive Evaluation (CCE). *Scholarly Research Journal for Interdisciplinary Studies*.Vol.1, No-1, pp.1570-1585

5

A Strong Foundation: Early Literacy in North East India

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Abstract

Epistemologically, the challenges of education are the same across stages; the nature of the challenges, however, would differ from stage to stage. Yet, the common perception remains fixated on Classes X and XII, and grudgingly on Class V. Paradoxically, Classes I and II, which are educationally extremely important since they introduce literacy to children, do not receive proportionate attention and funds. The consequences of this mind-set are particularly dismal for schools in rural and interior areas. In the light of these and related aspects, the document Padhe Bharat Badhe Bharat launched by the Government of India on August 26, 2014, is of enormous significance, as it officially gives belated academic recognition to learning in Classes I and II.

This paper examines the document in the context of North East India and attempts to explore ways to leverage existing opportunities as well as make recommendations for new ones to support early reading and writing with comprehension for children in classes I and II.

Introduction

The Human Development Report of the North East States, in the chapter on educational achievement, states that "for the purpose of census, a person aged 7 and above, who can both read and write with understanding in any language is treated as literate…The age limit was raised to 7 years of age at the time of 1991 census, on the advice of experts that the ability to read and write with understanding is not ordinarily achieved under the age of 7 years."

As the report states, this definition of literacy was in the Census 1991, when the awareness regarding literacy in the early grades was comparatively

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less. The Census of 2001 and of 2011 have both retained the above definition. This then, is a reflection of a collective sort of understanding about early reading and writing. What implications does this have on the learning taking place in Classes I & II in the Indian context? If a child is 5 years of age at the time of admission to class I, then 7 years would mean approximately the end of class II. Can a child "read and write with understanding" at that age?

The notion of literacy is changing from that of a narrowly defined concept to one embracing a holistic view of educational development that includes the building of literate societies. The key to all literacy is reading development. Epistemologically, the challenges of education are the same across stages; the nature of the challenges, however, would differ from stage to stage. Yet, the common perception remains fixated on Classes X & XII, and grudgingly on Class V. Paradoxically, Classes I & II, which are educationally extremely significant since they introduce literacy to children, do not receive proportionate attention and funds. The consequences of this mind-set are particularly dismal for schools in rural and interior areas. In the light of these and related aspects, the document Padhe Bharat Badhe Bharat launched by the Government of India on 26. August 2014, is of enormous significance, as it officially gives belated academic recognition to learning in Classes I and II.

This paper examines the document in the context of North East India and attempts to explore ways to leverage existing opportunities as well as make recommendations for new ones to support early reading and writing with comprehension for children in Class I and II.

Padhe Bharat Badhe Bharat

A nationwide sub-programme to the *Sarva Shiksha Abhiyan (SSA), Padhe Bharat Badhe Bharat* (PBBB) is planned in a twin track approach –

(i) To improve language development by creating an enduring interest in reading and writing with comprehension, and

(ii) To create a natural and positive interest in Mathematics related to the physical and social world.

The focus is on two areas –

(i) Early Reading and Writing with Comprehension

(ii) Early Mathematics

The objectives of PBBB for early reading and writing with comprehension are –

- To enable children to become motivated, independent and engaged readers and writers with comprehension, possessing sustainable and lasting skills and achieve learning levels appropriate to the class of study
- To associate reading and writing with the experience of joy and real life situation

- To recognise social perspective of home-school transition and role of children's literature in the process of reading and writing with comprehension.

Padhe Bharat Badhe Bharat, therefore, is the first of its kind in India. The document reiterates government commitment to increase early literacy rates as a key strategy to help children realize academic goals and quality of life, for research has shown that children who struggle to read at the end of Class II will continue to struggle academically as new subjects are introduced. Hopefully, this initiative will cut down on the high individual and social costs of children's low reading skills. If implemented in the spirit in which it was envisaged, PBBB will pave the way for a truly nationwide effort to improve early reading and writing with comprehension.

With reference to language, the basic thrust of the document is on improving "language development by creating an enduring interest in reading and writing with comprehension" with vocabulary and context rooted in the everyday world. It stresses that schools should have 200 working days and 800 instructional hours in an academic year. Out of four instructional hours each day, two-and-half hours should be earmarked to reading, writing and language. An awareness and understanding of developmental phases of reading and writing at early stages such as pretend reading, making use of predictions in reading and scribbling, using invented spellings etc. in writing needs to be developed among teachers handling these classes, as well as a sensitive pedagogy that encourages expression instead of focusing on errors in pronunciation, spelling or writing. Further, classroom conversations should be based on classroom displays, poems, texts and pictures, some created by the children themselves. Activities such as 'Morning message' should be encouraged to bridge home-school gaps. Teaching-learning should be preferably in the mother tongue of the child.

AWP&B of North East States

A study of the Annual Work Plan and Budget (AWP&B) of the North East states reveals that funds have been earmarked for Foundational learning programmes in 2014-15. All the North East states have, without exception, envisioned the implementation of a Foundational Programme for learning in Classes I & II with funds approved under their respective PABs. The various headings under which the states have planned their activities are as follows –

(i) Assessment of Achievement levels of Class II children by a third party (other than SCERT) to track progress of learning outcomes and also provide a baseline for further pedagogical planning. Broadly speaking, learning outcomes define what each child should know, be able to do and the disposition that should be acquired over a period of time. Each state committed

itself to ensure that at least 50% of the children in Classes I and II (some states committed to higher figures) would achieve the learning indicators as defined by NCERT by the end of the academic year.

(ii) Training of teachers (both residential and non-residential) for CCE at BRC and CRC levels. A comprehensive CCE programme is being worked on, covering aspects such as recording the process of learning, learning gaps and constructive feedback and assessment. Most states have initiated training for teachers, generally for five days, with at least one teacher from each school.

(iii) Training of Resource Persons for Early Reading and Writing with Comprehension. This addresses the felt need of pedagogy in concepts such as oral and written language connection, uses of literacy in daily life and print-rich environment. Mizoram, for instance, proposed teacher orientation along with pre- and post achievement survey in this regard, while Assam has focused on Learning Enhancement Programme.

Recommendations

In order to create an enabling environment and opportunities for reading and writing with comprehension, *Padhe Bharat Badhe Bharat* has identified certain components at various systemic levels, some of which can be directly linked to specific needs of the North East. While the recommendations given below are directed towards language learning in Classes I and II, they are embedded in the larger context of provision to access to education.

1. Design of Curriculum of Early Reading and Writing with Comprehension by Academic Authority (NCERT or SCERT) –

   (i) It may be mentioned here that RIE Bhopal, a constituent unit of NCERT, organised a workshop for pre-primary and primary curriculum from 12-16 September 2014. This can be adopted /adapted by the North East states, based on field experiences.

   (ii) Further, of the 247 universities in the country, only 69 have revised their teacher education curriculum based on the National Curriculum Framework for Teacher Education 2009, during the past five years to focus on the critical needs of the first generation learners, the diversity of the classrooms and also on the ability to construct critical thinking.

2. Development of simple, region-specific interesting and graded children's literature in local languages: A reference may be made here to the Barkha series developed by NCERT, comprising 40 booklets in Hindi presented at four levels, for young learners in the early grades. Barkha has 40 stories spread across four levels,

with five common themes. The entire package, comprising 40 booklets, is priced at 480 rupees. The number of sentences and the complexity of the plots in the stories increase as we move upwards across the levels –

(i) The *Barkha* series may be adopted, adapted or translated. For instance, Arunachal Pradesh has disseminated the *Barkha* series as it is, in its schools. States such as Assam, Tripura and Sikkim have expressed interest in its adaptation and translation. (It may be mentioned here that *Barkha* has been translated into Gurumukhi by SSA Punjab, and into Marathi and Konkani by SSA Goa.)

(ii) Alternatively, states may develop their own graded series. Arunachal Pradesh has developed a series titled 'Orchids', comprising 30 folktales from various tribes. (Funds are awaited from MHRD for its printing)

3. Research: Non-availability of indigenous research in early reading and writing with comprehension is a serious concern. An informed understanding in this area is a felt need. The North East states could focus on research, in individual or collaborative modes, on areas such as –

(i) Awareness and understanding of non-negotiable within programmes of early literacy

(ii) State Policy clarity on medium of instruction

(iii) Aspects of school/ classroom based approaches and activities

(iv) Programme Evaluation of States that have practiced ELP for a minimum of three years.

4. Teacher Training (Pre-service): The Arunachal Pradesh University of Studies has courses on Primary teacher Training (PTT) and on Nursery Teacher Training (NTT). The Krishna Kant Handique University runs a similar course. Early Literacy may be introduced as a component in these and other Universities/institutions.

5. Capacity Building: Creation of awareness and understanding on Early Literacy through Capacity Building of Teacher Training (In service), Head Teachers (to provide support at school level for ELP) Educational Administrators (DEOs, BEOs etc) Teacher Educators (SCERTs, DIETs etc) is extremely necessary. Each State/ UT has made provision for such capacity building for Early Literacy. However, it is noticed that, in the AWP&B of States, the identification of teachers for training invariably carried a rider 'excluding single teacher schools'. It is unfair that teachers placed in such schools are denied training; in fact, their need may be greater. Alternative plans can easily be made at policy level to accommodate such teachers.

6. Concerted Efforts: A five day workshop was held at NERIE Shillong for SSA officials and faculty of SCERTs and DIETs of the North East states from 18-22 August 2014, in which the academic and administrative aspects of Early Literacy Programme in the various states were discussed and a tentative Plan of Action prepared. A follow-up workshop was also held from 16th to 20th February 2015. This kind of dedicated vision should feed into the Northeast policy.
7. Availability of basic facilities in schools such as toilet and drinking water is an important provision of access to education. The ramifications of dropout crisis go much deeper than one bad decision made by parents on a child's behalf. There are significant economic consequences on society as a whole. Moreover, the dropout rate has a moral dimension: no young child deserves to have his/her future determined even before receiving a chance to succeed.

Conclusion

The unfortunate reality in Indian schools is that most children, even after five years of schooling, do not become good readers. In other words, many children remain stuck on recognizing letters, and later words; the reading habit is not developed and the joy of reading becomes irrelevant. All stakeholders need to exercise rigorous effort, both academically and administratively, for a strong foundation in early literacy, to benefit the North-East in particular and the nation as a whole.

REFERENCES

1. Annual Work Plan Budget. 2014. PAB Meetings for approval of the AWP&B of the North-Eastern States for 2014-15
   Arunachal Pradesh (23 May 2014)
   Assam (01 May 2014)
   Manipur (20 February 2014)
   Meghalaya (17 April 2014)
   Mizoram (27 February 2014)
   Nagaland (06 March 2014)
   Sikkim (06 March 2014)
   Tripura (20 February 2014)
2. Ministry of Development of North-Eastern Region. Government of India. 2011. *The Human Development Report of the North-East States*. New Delhi.
3. MHRD. Government of India. 2014. *Padhe Bharat Badhe Bharat*.

6

In Search of a Professional Identity

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Teaching is one of the most arduous and demanding professions. Many teachers enter the profession brimming with ideas with the aim to inspire young students and to realise their potentials. What makes teaching particularly challenging is the diverse nature of classrooms and the expectation that every child will be brought into the fold of learning. Diverse classrooms often demand that teachers play varied roles- ranging from a counsellor, storyteller, actor, writer, orator and many others. Despite this many teachers enjoy the complexities of their work.

Teaching in a primary school for the past several years, has been the most rewarding and satisfying experience I have had. I have enjoyed every aspect of my work: selecting and designing subject content, developing exciting ways of engaging students with new and complex concepts and issues, reaching out to quieter and disinterested children, telling them animated stories about the worlds of fantasy and reality and making sure they learn.

During the past couple of years however, I have been witness to changes introduced in school education under the guise of 'reforms'. These reforms we were told are necessary to become 'efficient professional' teachers. Soon after one such experience claimed to take us through 'the process of becoming professional', I realised that my role as a teacher- a decision maker-had been reduced to that of a mere 'implementer'. As teachers, we were expected to teach according to preplanned lessons and activities. Only did this impose on me a style of working that did not come naturally, it created in me a strong dislike towards the profession of teaching itself. I felt immensely so pressurised to follow specific steps in organising my teaching that I wondered whether I had made a correct career choice about a profession I lovingly chose for myself more than a decade ago.

The reforms being instituted in schools claim to improve pedagogical approaches with the aim to shape teaching into a more professional

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activity. As a result of these reforms, several 'private' high fee charging schools expect teachers to use pre-planned curriculum materials under the guise of enhancing capabilities and skills of learner. These pre-packaged materials provide readymade lesson plans for most of the concepts contained in school textbooks. In effect they 'tell' teachers what to teach and how to teach. School administrations emphasise the use of pre-packaged materials as it gives them the opportunity to increase school fees. The market sector of pre-packaged materials is seen as a step towards making school 'technologically advanced'; School managements seek to increase their 'businesses' by catering to children of particular socio economic classes.

These changes in the name of educational reforms can be ascribed to the rising neo liberal ideologies in the field of education. Redefined as a commodity, education and the related issue of quality are being directly associated with the commercial activity. Consequently, in the neo-liberal era, the wider aims of education are seen in economic terms with a focus on continuous monitoring of student learning and teacher accountability. Teachers have become the object of reforms (Batra, 2012); their professional worth is now discussed in terms of the measurability of the outcomes of their efforts (Kumar, 2011). The underlying assumption of such initiatives is to raise student performance in the desired 'academic' tasks by controlling the curricula. Hence, students' achievement can be increased through detailed prescription of teaching through scripts.

I will elaborate in this short essay area of critical concern that has been thrown up as a result of these reforms. First, teachers are now expected to simply implement predetermined content and instructional procedures and follow blindly the given curriculum material foreclosing any scope or need to adapt or modify to suit changing contexts and student needs. This has lead to the stifling of teachers' autonomy and the virtual disappearance of any role of the practicing teacher to develop and plan curriculum and teaching learning process. The role of teacher gets reduced to a technician who can implement the given content rather than seeing them as a thinking humane professional. Second, the attempt to homogenize curriculum content and transaction diminishes the NCF (2005) emphasis on socio-historical and cultural diversity as a key starting point of providing meaningful learning experiences. Generally the scripted material is designed to meet the needs of a particular class. The content, its presentation; the language reflects a social setup of a specific group. The material intends to instill certain values and attitudes that are appreciated by that culture. There is hardly any scope for discussion about existing inequities and issues of diversity are usually ignored. In a way, the materials maintain the

existing inequalities and hierarchy that students observe in their surroundings.

Third, the predesigned lesson plans contain inbuilt exercises for assessing student learning via multiple choice and other objective questions that actively disallow nuanced engagement with subject matter. It is evident that such appraisal mechanisms do not provide space for students to think critically and in fact limit the possibility of exploration and the application of concepts in varied contexts. Last, control over matters related to teaching guarantees a standardised system of teaching. This further widens the gap between those who control the schools from the outside and those who actually deal with curricula and students on a day-today basis, leading to a greater bureaucratization of schools as well as of teachers' work.

My experience of being a teacher suggests that teaching is a spontaneous activity rather than a planned activity as the direction of 'reforms' propose. There were rare instances where I have found myself successful in transacting a lesson planned in terms of its content and methodology. While teaching, I have often had to take quick and spontaneous decisions to modify my teaching plan in case I found that it was not going according to preconceived ideas. Overcoming my own despair of a lesson gone bad, I had to constantly infuse optimism and liveliness in my teaching so as to maintain learner's engagement in class. I had to work with learners who came with varied interests and knowledge. I had also to cope with the intensity of their emotions that would change with every passing hour. I realized that with every teaching experience, I improvised the content I had planned to engage students with and developed new insights that enriched my pedagogy further.

Before I was exposed to the series of workshops that claimed to make me into a 'professional teacher', I enjoyed the freedom of teacher in selecting and transacting a concept drawing upon my knowledge and expertise. We would plan at the beginning of the academic term by selecting broad topics that would form the syllabus outline for the year. Before introducing a concept, I with my colleague would discuss the themes in terms of content and pedagogic communication. As teachers we had the flexibility to approach the concepts using our own unique pedagogical style and knowledge. We were not compelled to select the same stories, ask similar questions and expect uniform answers from our learners.

For me teaching was a flexible and open activity wherein a teacher designs or chooses appropriate activities keeping in mind the varied abilities and potential of learners in her classroom. For instance, some children engage more enthusiastically with activities that involve making models or charts whereas others may

enjoy activities that involve building stories or poems related to the concept learnt, or read about it before visiting a museum. A teacher who observes learners is able to develop a reasonably accurate picture of their strengths, weaknesses and orientation towards learning. Besides this, interaction with learners assists teachers in balancing the task of combining group work while also focusing on individual learners. In doing so, a teacher transforms personally as well as professionally. She explores and discovers the world again with her learners and in this process learns much more. Undergoing through a cycle of planning diverse activities for learners and reflecting on her own pedagogy, a teacher becomes more creative and reflective in her teaching.

With the introduction of scripted materials, there is far greater control on the process of teaching and a constant focus on the efficient management of human 'resource' (students and teachers) with virtually no scope for developing thinking and ideas. The real problem with this "effectiveness and efficiency" discourse, and readymade materials is that these are being positioned as tools for 'empowering' teachers. Teachers are being given the impression that this approach will ease their teaching and reduce their workload by taking away the 'mundane' tasks of planning and transacting curricula. The reality however is that most teachers find prepackaged materials rigid as they are unable to adapt to suit the diverse needs of the classroom and learners. In effect, the power and authority of teachers over curricula issues is minimised. In fulfilling the expectations of instituting reforms as a teacher, I have found myself struggling in the absence of power over matters related to teaching. Pre-packaged materials introduced in the name of 'assisting' teachers now govern their pedagogy. At a deeper level, these 'reform' measures also reflect a deep mistrust in the teacher's capacity to choose and design developmentally appropriate content and learning experiences for learners.

A scripted lesson on plants and seed germination also takes away the prospect of outdoor activity. The charm of having a class under a tree and planting a seed in the school garden has virtually disappeared as a pedagogic activity. Opportunities to talk about nuanced aspects of plant life led by outdoor activities are thing of the past. Often such activities become the starting point of discussions that might or might not be related to the concept undertaken. These learners led 'diversions' help in enhancing their understanding. A teacher creates that space where these diversions are given a direction. Outdoor activities that provided expression to learners' enthusiasm and quest for knowledge are no longer indicators of learning. The intimate bond between the teacher and learners has been replaced by a 'business model' where 'performance' on standardized test and learning outcomes are considered

as the only parameters of a system of education. It would not be incorrect to say that teaching and learning as a nuanced pedagogical process has been consciously reduced to a mere mechanical exercise. In other words, the complex notion of teaching is put simply as an easy and standardised task.

Telling teachers to follow a schedule or teach in a particular way with stated content is contradictory to the notion of strengthening and building teachers as professionals. Teachers feel a growing loss of power around the basic conditions of their work and consider themselves disempowered rather than autonomous professionals. In addition, such approaches grossly undermine the cultural specificity of a school as an institution and treat all schools as uniform organizations devoid of a geographical, historical, socio-economic and cultural context. Moreover, these readymade curricula materials are suggested by 'experts' who may neither have the experience of working with children nor engage with educational theory. Often, they are crudely unaware of the multiple realities and experiences learners from different socio-cultural and lingual background bring with them. In this scenario teachers' roles too have been reduced to the dictates of 'experts', removed from the context of classrooms and the children they inhabit.

It can be argued that teacher's work has now become more controlled and structured under the provisions provided by the administration of their respective organisations. Informal talks with teachers reveal the perplexed situation they are in especially with the introduction of continuous and comprehensive evaluation (CCE). Teachers have to provide evidence for the work they have done in order to justify their professional existence. Hierarchies are introduced at each level in form of subject coordinator, class coordinator, and primary head to ensure that teaching goes according to prescribed plans. For teachers, the sole intention of teaching has become one of finishing the designated weekly plan and to provide evidences of successful completion of the tasks assigned to them. Most of the teaching time goes into preparing reports that need to be submitted to different "coordinators". Delays or failing to follow planned schedule demands "valid" reasons and severe questioning. It can be said that stress has been laid on objectifying the whole pedagogical process.

This does not mean that teachers are free from any accountability. Teachers are accountable to their students and parents however, high stake accountability and putting every aspect of teacher's work into scrutiny is what makes teaching troublesome. The argument is that teachers need to have adequate power in the day to day classroom matters for learning to become effective. Teachers' autonomy should be viewed as a mandatory aspect so that teachers feel content and responsible about their work. Enough freedom and flexibility

opens up new avenues for learning and makes teaching more humane endeavor.

While most teachers do not express their concern or raise a voice against the changes being instituted in the schools. Mass media is being used to propagate the idea that anyone can teach. The advocacy of prepackaged content and its aggressive marketisation has trivialized the need for professional qualification to become a teacher. Thus, several factors seem to work together against the teacher especially since teachers are rarely seen as a collective agency to reclaim their space in school education.

To conclude, it can be argued that teachers are a crucial factor that influences learning of the students. Each one of us is likely to remember a teacher who may have changed or influenced our lives deeply. It is usually the human aspect of a teacher that touches our lives and leaves an ever lasting imprint on our mind. Dedicated, loving, knowledgeable and reflective teachers can foster critical and creative thinking in the students. No other factors such as materials and curriculum can substitute the way in which a teacher increases a student curiosity and keeps the teaching process lively. A teacher not only selects content of a lesson but plans it in a way to meet the different level of learners, their interests and needs. She customizes and balances the task of making each child learn through her qualifications and experience. Keeping in mind the varied needs of a learner, she constructs an environment where learning is supported and challenged too. This is why teaching remains a human endeavor. The ability to decide, select and choose content is the primary right of a teacher and taking away this would erase the very soul of teaching. It is important to view student's achievement with respect to the product of teacher's effort rather than focusing on other factors such as curricula and content. To disseminate quality education, teachers need to be seen as an active agency that can think, decide for her students and take into cognizance the multiple socio political and cultural locations of the learners. Instead of limiting the authority of teacher the focus should be on empowering teachers so that they can devise the best way to face the challenge of multi cultural classrooms and to achieve this, a serious rethinking of teachers' professionalism needs to be worked out.

REFERENCES

Batra, P. 2012. Positioning Teachers in the Emerging Education Landscape of Contemporary India. *India Infrastructure Report*. IDFC Foundation. New Delhi: Routledge. 219-231.

Kumar, K. 2011. Teaching and the Neo-Liberal State. *Economic and Political Weekly,* 46(21), 37–40.

7

Performance-based Assessment for Assessing Science Learning

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Abstract

There has been a major shift in the area of assessment from 'outcome based assessment' to 'assessment for learning'. The purpose of assessment now is to obtain feedback in order to improve learning of students. The traditional outcome oriented methods of assessments through multiple choice questions, short answer questions or true/ false items do not provide any clue about the ability of students to solve real life problems by applying theoretical knowledge gained in the classroom situations. Performance-based assessment tasks provide opportunities to students to demonstrate their problem solving abilities by working individually or in groups. The aim of performance-based assessment is to integrate it with learning. During performance-based assessment, students get opportunities to apply various science process skills such as classifying, formulating hypotheses, interpreting data, and conducting an experiment. Another important highlight of the performance-based assessment is the process through which students go through while engaged in a task along with the product.

Introduction

A teacher teaches the concept of 'Force and Pressure" to her eighth standard students and asks questions after finishing the lesson to get an idea about their level of understanding. She finds that students were able to answer simple knowledge based questions but failed to apply the concept of 'Force and Pressure' in day-to-day life. After realising this, she focuses on everyday problems (e.g., why is it slippery to walk on ice? Why do we lubricate the engine of the vehicle? what is lubrication?) Students were then divided into groups to solve these problems and then discuss the outcomes in the class. Next day, she presents some other problems (e.g. what is the difference between weight and mass? why does a person weigh less on a moon?) and the students

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were expected to solve them in groups. While students work in groups, teacher moves among the groups of students and note down important observations which later will be used for assessment and feedback.

A biology teacher faced the same problem while teaching the concept of 'habitats' to ninth standard students. She divided the class into three groups. First group was given 'aquarium', second group was given 'terrarium' and the third group was given 'vivarium'. All the three groups were then expected to create their respective habitats keeping in mind the climatic conditions, adaptations of animals etc. Each group was given time to discuss their plans and implementation of these plans with their teacher. Lab attendant was also given the responsibility to assist each group. Students learned about different habitats while creating/ designing manmade ecosystems such as, aquarium, terrarium and vivarium. They also learned how a particular habitat offers food, shelter and other favourable conditions to plants and animals for their survival.

In the above two examples, students –

- were involved in real world contexts
- focused on 'bigger ideas' and major concepts, rather than isolated facts and definitions
- were involved in using science processes
- were given open ended questions
- were given opportunities to interact and collaborate
- were encouraged to make connections between concepts and ideas

The above two are examples of 'performance-based assessment'. What is performance-based assessment? How is it different from traditional assessment? Let us learn more about it.

What is Performance-based Assessment?

Performance-based assessments aim to model the real learning activities that we wish students to engage with, oral and written communication skills, problem solving activities etc, rather than to divide them into parts, as do multiple-choice tests; the aim is that the assessments do not distort teaching.

Performance-based assessment is different from traditional testing

Traditional outcome based tests are adopted for large scale testing of students on certain pre determined criteria. These tests are easily available, cheap, short, offer broad but shallow coverage, are easy to score and reliable. Performance-based assessment by contrast is:

time-consuming, tends to provide detailed information from multiple perspectives about a particular skill or area, (and, because of the time factor, depth may be exchanged for breadth); scoring is generally complex and usually involves the classroom teacher; standardization of the performance is not possible and

therefore reliability in the traditional sense is not high. All these features, which render performance assessment valuable for assessment to support learning, become problematic when performance assessment is to be used for accountability purposes (Frechtling, 1991).

Performance-based assessment is different from authentic assessment

Authentic assessment is performance assessment carried out in an authentic context, i.e., it is produced in the classroom as part of normal work rather than as a specific task for assessment. While not all performance assessments are authentic, but almost all authentic assessments are performance assessments. In other words, authentic assessment is a special case of performance assessment. An example of an authentic assessment would be a portfolio— the portfolio contains examples of actual student performance: 'best' performance elicited under normal classroom conditions in the classroom context. Meyer (1992) suggests that in using the term 'authentic assessment' assessors should specify in which respects the assessment is authentic: the stimulus; task complexity; locus of control; motivation; spontaneity; resources; conditions; criteria; standards; and consequences. According to Gipps, (1994), the list of these criteria may be very long but what becomes important in this case is addressing the question 'authentic to what?

During performance-based assessment, students can be assessed on the basis of products or performances. The end products for assessment are: display board, poster, exhibition, collage, photo essay, song, model, log/journal, recorded audio/video presentation, diagram or spreadsheet. The performances for assessment are: quiz, debate, group activity, multimedia presentation, power point presentation, story-telling, drama/ role-play, science lab demonstration and oral presentation.

Performance-based Assessment in Science

Why performance-based assessment in science? How are the basic principles of science in alignment with objectives of performance-based assessment? Science can arguably be defined as having at least three aspects: body of knowledge, process/ method, and a way of constructing reality, that is, nature of science (NOS), that distinguishes it from other disciplines or ways of knowing (Lederman & Khalick, 2001). These three aspects are different although an overlap between these three aspects is unavoidable. Performance-based assessment is in tandem with above mentioned three aspects of science, knowledge, process/method and nature of science. In performance-based assessment, it is the process which is equally important while they are engaged in solving a problem (product). Why? It is because; students make important decisions throughout

the learning process. Performance-based assessment assesses students on their ability to use/apply process skills such as classifying, formulating hypotheses, interpreting data, and conducting an experiment. For example, identification and classification of different insects, solving a problem scientifically, a project on 'pollution control measures in vehicles' in your city, a study on behavior of twins in your neighborhood, can be taken up for such assessments. To convey the correct NOS to students, assessment in schools must provide opportunities to get and use information. Older models of assessment were focusing upon definition of terms and concepts, and upon verification of skills. The science student's ability to find and to use information is an important part of scientific continuum and is basic to the study of science. Performance-based assessment reinforces the correct NOS by providing opportunities to get and use information in different authentic contexts.

Development of critical thinking and problem solving abilities of students is an important objective of school education. Involving school students individually or in small groups, in the act of solving a problem, or thinking critically about an event/incident, concept, or process, is known as performance-based assessment. In addition, performance-based assessment stimulates the development of other important dimensions of learning, namely the affective, social and metacognitive aspects of learning (http://institute-of-progressive-education-and-learning.org/k-12-education/based-learning). Let us find out.

During performance-based assessment affective (emotional) aspect of learning refers to motivation derived by students when they are involved in interesting and meaningful assessment tasks. They acquire confidence and develop a sense of satisfaction and pride while undertaking the assessment task.

The performance-based assessment involves peer interaction thereby enhancing their social skills for life. The group interaction further leads to social interactions and learning of social skills such as negotiating with others, accepting differences, reaching a consensus amicably, respecting others' opinions, individual contribution to the group effort and shared responsibility for task completion.

As for the metacognitive aspect of learning (pupils' thinking about their own learning), skills such as reflection and self-assessment also contribute to the learning process. When teachers require pupils to think about what they are learning, how they learn and how well they are progressing, they develop skills which make them more independent and critical pupils.

Performance-based Assessment in Science – the hows and whys?

There are SIX major characteristics of 'Performance-based assessment' which are given below –

1. Performance-based assessment is an assessment method in which students are required to perform skills and strategies in the form of hands-on assessment questions?
   (i) As an example for class 6th science, students were asked to investigate how a lactometer can be used to find out the amount of water in different milk samples provided to them. A Lactometer works on the principle of specific gravity of milk. It measures density of milk which is affected due to addition of water to milk. They were given different samples of milk and task to determine how the lactometer could be used to establish the correct density for a pure sample of milk. This hands-on task allowed students to conduct several investigations, make predictions, evaluate their work, and provide explanations for their responses.
2. Performance-based assessment strategies provide teachers with better knowledge of their students' strengths and weaknesses by giving teachers insights into students' process skill abilities.
   (i) Performance-based assessment assesses process(s) used along with the products presented at the end of the assessment. Products presented for assessment could include such tangible things as reports, models, posters, diagrams, spreadsheet, and written explanations and problem solutions. These products provide a teacher an understanding about the strengths and weaknesses of students along with the ability of students to apply process skills in a given situation.
3. Performance-based assessment allows students to collaborate, discuss, and refine their thinking in the assessment process. This is because much of the assessment process serves a teaching/learning function in a formative manner that leads learners to deeper, more accurate understandings.
   (i) For performance-based assessments, students work together while conducting science investigations and then evaluate each other's reports. They cannot accomplish these tasks without collaboration. It is beyond doubt that these types of collaborations on performance assessments better reflect skills required in the twenty-first century. Vygotsky (1978) believes that a learning community is important because learning takes place in a social context and relies on communication and interaction with others.
4. Performance-based assessment tasks are conceptual and therefore involve students in problem solving, higher level reasoning, critical thinking, and creativity.

(i) In performance-based assessment, students are apply knowledge gained in classrooms to real-world problems and while doing so they select required knowledge, approaches to apply this knowledge, and then providing explanations for the solutions obtained. The entire process involves reasoning, critical thinking and creativity (new designs, new strategies/ methods). For example, in an assessment question, science students are expected to discuss various reasons for environmental problems such as, pollution, ozone depletion, and global warming. They are also expected to discuss its relationship with various human activities. To predict its future implications on earth, and other animals and plants and to suggest measures for saving/conserving planet earth. Elucidate wherever possible. Prepare a report and present it in the class through poster and power point presentation followed by a discussion in the class.

5. Evaluation should be authentic. Assessment is authentic if it "... asks students to demonstrate knowledge and skills characteristic of a practicing scientist or of the scientifically literate citizen" (Lovitts & Champagne, 1990). Authentic assessments require that students perform tasks that relate to everyday life and demand the application of knowledge.

   (i) Yes, all performance-based assessments are authentic if undertaken in its right spirit. Students act like scientists and integrate scientific method in solving real life problems.

6. Performance-based or authentic assessment leads to deeper understanding of science, allowing teachers to know more about students' thinking and learning processes. This information can inform subsequent instruction.

   (i) Working in a group for solving real life problems is a highly motivating experience for students. It encourages them to learn and increases their achievement level. Such cognitively and emotionally satisfying experiences act as great reinforcers of learning.

What is a Performance Task?

A performance task is a structured situation in which stimulus materials and a request for information or action are presented to an individual, who generates a response that can be rated for quality using explicit standards. The standards may apply to the final product or the process of creating it. A performance assessment is a collection of performance tasks (Stecher, 2010). This definition has four important elements. First, each task must occur in a structured situation, meaning the task is constrained with respect to time, space, access to materials,

and so on. Second, each performance task contains some kind of stimulus material or information that serves as the basis for the response. In this respect, performance tasks can be very similar to multiple-choice items. Third, the task must have directions indicating the nature of the desired response. The directions can be part of the stimulus materials. Fourth, the task must prompt responses that can be scored according to a clear set of standards. It is usually the case that the standards are fully developed before the task is given.

There are TWO different types of performance tasks. These can be classified as –

1. **Classifying based on Stimulus Materials and Response Options** It is a two-way classification scheme based on the structural characteristics of the task, particularly the nature of the stimulus materials and the nature of the response options. (This scheme is inspired by the work of Baxter & Glaser, 1998, discussed subsequently) The stimulus materials can be classified in terms of complexity along a dimension that runs from simple to complex. (See table 1) A physics task that asks the student to solve an equation for x represents a relatively simple stimulus. Similarly, the response options can be classified in terms of freedom along a dimension that runs from constrained to open. There can be constrained responses such as, a short answer question on photosynthesis. In comparison, a life science task in which students are given a set of leaves to observe and are asked to create at least two different classification schemes and arrange the leaves into groups based on each scheme offers a relatively open range of responses. By crossing the stimulus and response dimensions, we create four quadrants that can be used to classify all performance tasks. A written, short-answer (fill in-the-blank) question is an example of a relatively simple, relatively constrained task. A Physics word problem that requires setting up equations, using a graphing calculator, and other calculations is an example of a relatively simple, relatively open task.

Table 1: Classification based on Task Structural Characteristics

(Hammond, Linda & Adamson, 2014)

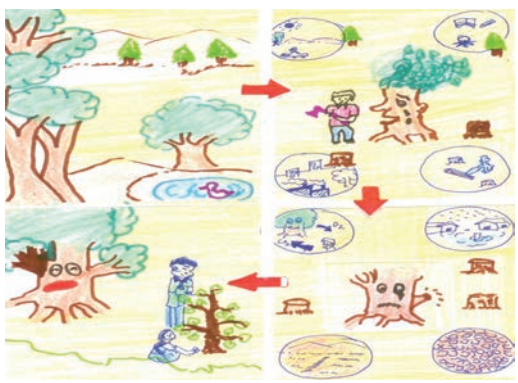
Stimulus/ Response	*Simple*	*Complex*
Simple	Simple Stimulus	Simple Stimulus
	Simple Response	Complex Response
Complex	Complex Stimulus	Complex Stimulus
	Simple Response	Complex Response

2. **Classifying based on Content Knowledge and Process Skills** Baxter and Glaser (1998) suggest a way to classify science performance

tasks by their cognitive complexity, and this approach could be used more generally. They divide the science assessment space into four quadrants depending on whether the process skills demanded are open or constrained and whether the content knowledge demanded is lean or rich. They provide examples of science tasks corresponding to each quadrant. For example, "Exploring the Maple Copter" is an example of a content-rich and open-process task. In this task, high school physics students are asked to design and conduct experiments with a maple seed and develop an explanation of its flight for someone who does not know physics. The two-way content-process classification is helpful for characterizing the cognitive complexity of performance tasks. This distinction is useful when thinking about the inferences that are appropriate to make from scores on performance assessments and the kinds of information that would be needed to validate those inferences.

Some Examples of Performance Assessment Tasks

1. *Performance Tasks to Assess Science Knowledge:* Conceptual understanding of the natural world is a key goal of elementary school science. Understanding principles, concepts is important because it further helps in application and interpretation of these facts/ principles in different situations. Therefore, simple tasks such as fill-in-the blanks, short answer questions, locate the following help in assessing their science understanding.
2. *Pictorial Interpretations:* The teacher shows a picture and asks students to explain it– what do you see in this picture? (any four points) who is responsible? (one point) What can be done to restore it back? (any two points)



Element	0-7 Points	
Comparison of 4 parts of the picture	Any four observations related to the picture such as cutting of trees, change in soil quality, climate, causing floods, constructing houses etc. (0-4 points)	
Who are responsible for changes?	Man/human activities (0-1 point)	
What can be done?	Any three points such as planting more trees, avoiding cutting of trees (0-2 points)	
Scoring	Outstanding Satisfactory Needs improvement Unsatisfactory	6-7 points 4-5 points 2-3 points 0-1 points

3. *Assessing Data-Gathering Processes with a Plant Growth Task:* In order to assess the application of processes of science, a project on plant growth is planned for students. In the performance task, students were expected to observe pairs of growing plants over a period of time and answer questions about them. During this task students measure, record data, and determine patterns and trends from the data. The products to be judged are the students' oral or written answers to the questions. A rubric can be prepared for assessing their answers.

4. *Using Performance Tasks to Assess the Application of Inquiry Procedures and Science Processes:* Involving students in inquiry activities during science learning is all the more important today. Assessing inquiry procedures and science processes, both during formative as well as summative assessment, is an important part of science school programmes especially at elementary stage. For example, students are given six different fruits (ranging from unripened stage to fully ripe form) and given some questions such as (a) observe them for few days and note down changes in each of these fruits; (b) test these fruits for starch and sugar on 1st day, 3rd day, 5th day and 7th day. Record your observations and explain these observations.

The assessment of these inquiry procedures can be done by focusing on long-term conceptual goals of this lesson. 'Conversion of starch into sugar during ripening of fruits' is the guiding concept for this problem-based inquiry. The responses of the students, in this case, will be analyzed to understand students' thinking and will be used appropriately by the teacher for making decisions for further improving their learning (a basic requirement for assessment of inquiry).

5. *Assessing Multiple Objectives through Performance Assessment:* when students acquire required knowledge and conceptual clarity about scientific facts then they can use this knowledge and understanding for creating new or different products.

   (i) Making Models: Models depict students' understanding of natural objects, organisms, living processes, structural features and their abilities to apply science processes and inquiry procedures. Therefore, these models are excellent products for assessment. For example – solar system model, physiological systems of human body, stages in water purification etc.

   (ii) Student Demonstrations: Students can again exhibit their understanding of scientific concepts and their

interrelationships by planning, manipulating and demonstrating with scientific supplies and equipments such as electric circuit, movement of light in a straight line, solubility of different solutes in water, separation of iron and sulphur mixture by bringing a magnet, separation of different substances by using different techniques.

(iii) Projects: Students projects can convey a lot about students' conceptual clarity as well as thinking. Projects provide the teacher with insight into how well students have learned, recorded and applied their knowledge. For example, You are an agricultural scientist appointed at an agricultural institute in a rural area. Your task as an agricultural scientist is to choose two crops to be grown in mixed cropping in a given piece of land keeping in mind their duration, growth habits, root patterns, water needs, demand for nutrients, improvement in soil fertility, variety of produce, increase of yield and minimizing pest damage. Submit a report explaining the selection of these two crops for the selected area. Submit appropriate evidences in favour of your selection (such as soil testing, weather conditions, nutrient requirement of plants to be grown for mixed cropping). This written report submitted by students can be assessed by developing a rubric.

Summing up

Assessment is an integral part of teaching-learning process. It provides a crucial feedback to the teachers about learners' level of progress. The theoretical understanding of the concepts must help the learners in solving real life problems. Science process skills such as, observing qualities, measuring quantities, sorting/classifying, inferring, predicting, experimenting, and communicating, are not only useful in science, but in any situation that requires critical thinking. Performance assessments also involve assessing students on their ability to use science skills. Furthermore, performance-based assessment focuses on the process pupils go through while engaged in a task as well as the end product, enabling them to solve problems and make decisions throughout the learning process. There are a number of methods which can be used for performance-based assessment in science.

REFERENCES

Arter, J. and J. McTighe, 2001. *Scoring Rubrics in the Classroom*. Thousand Oaks. CA: Corwin Press

Baxter, G.P. and R. Glaser. 1998. (1998). Investigating the cognitive complexity of science assessments. *Educational Measurement: Issues and Practices*, 17(3), 37-45.

Birenbaum, M. 1997. Alternatives in Assessment. Tel-Aviv: Ramot Publishing.

Adamson Darling-Hammond, Linda and Frank (2014). *Beyond the Bubble Test How Performance Assessments Support 21st Century Learning*. San Francisco, CA: John Wiley & Sons

Frechtling, J.A. 1991. Performance assessment: Moonstruck or the real thing? *Educational Measurement issues and Practice*, 10, pp. 23-25.

Gipps, C. V. 1994. *Beyond Testing: Towards a Theory of Educational Assessment*. London and Washington, DC: Falmer.

Lederman, N.G., R. Schwartz, F. Abd-El-Khalick and R.L. Bell. 2001. Pre-service teachers' understanding and teaching of nature of science: An intervention study. *Canadian Journal of Science, Mathematics, and Technology Education*. 1, 135–160. Lovitts, & B. E., & Champagne, A. B. (1990). Assessment and instruction: two sides of the same coin. In A. B. Champagne, B. E. Lovitts & B. J. Callinger (Eds.), This year in school science 1990: Assessment in the service of instruction (pp. 1–13). Washington, DC: American Association for the Advancement of Science.

Mc Tighe I. and S. Ferrars. 1994. *Assessing learning in the classroom*. Washington, DC, National Education Association.

Meyer, C. A. 1992. What's the difference between authentic and performance assessment? *Educational Leadership*. 49, 39-40.

Stecher, B. 2010. Performance assessment in an era of standards-based educational accountability. Stanford, CA: Stanford University, Stanford Center for Opportunity Policy in Education. Retrieved on July 30, 2015 from scale.stanford.edu/ system/ files/performance-assessment-era-standards-based-educationalaccountability.pdf

Vygotsky, L. 1978. *Interaction between Learning and Development*. From Mind and Society (pp. 79-91). Cambridge, MA: Harvard University Press.

8

ICT Augmented Elementary Teaching and Learning

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"Computer-based instruction has raised student achievement in numerous studies. It has given students a new appreciation for technology and has had positive effects on student's attitudes toward schools and teaching. And computers have helped teachers save instructional time."

J. A. Kulik and C. C. Kulik (1987)

1. Technology and Teaching-learning

1.1. Conceptual Overview and Recent Trends

Technology, to a layman, means some strategy, apparatus, instrument or practice, which can make a work easier, efficient, requiring lesser efforts, lesser time, lesser labour, and lesser money. In other words, technology is the one, which saves time and energy while pursuing a particular task.

Being so useful, technology has encrypted in almost every sphere of human life, including the education. In the sphere of education, transforming from effective strategies for teaching-learning, as earlier concept of 'technology of education', technology has, now, taken a different shape as of using effective apparatus, instruments, platforms and resources for effective teaching-learning, which can be said as 'technology in education'. Technology, now, means not only the content creation, but also to communicate it effectively to the prospective learners and opening up a new door for enhancing creativity among them, believing in the principles of constructivism.

Evolved through the era of audio-visual aids, educational technology (ET) and information technology, the technology in education has now manifested into the concept of Information and Communication Technology, popularly known as

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ICT in education. Its origin lies into the philosophy that the creation of information is not just sufficient, but the information created must be communicated, too, to the learner for better facilitating learning and learning. And, the learner should be the active creator of this information. Hence, the development occurred in trends of ICT in education, too. A few of recent trends are Open Educational Resources (OER), Web 2.0 tools, Learning labs, e-learning (learning through digital format), m-learning (mobile learning), u-learning (ubiquitous learning), etc.

While ministries of Human Resource Development (MHRD) of the nation and various states are emphasizing on the use and applications of ICT in teaching-learning through various efforts, viz. ICT@Schools Scheme, providing tablets to school learners, etc., it becomes the need of the hour that facilitators, especially at elementary level, must be very well acquainted with the technology augmented teaching-learning, and should have maximum possible knowledge of teaching- learning through the technology.

Observing indispensability of the technology, in the current and coming era, in the field of education, the current article endeavours to discuss the technology for learner and learning, facilitator and teaching (facilitating learning), professional development of facilitators and educational technology repositories.

1.2. Why Technology in Education?

Technology in education is endeavouring to provide a temporal free, spatial free, unbiased, full of equal opportunity, and non-threatening learning environment to learners. Through technology, facilitator and learners can be in touch for better interaction irrespective of annual calendar, school timings and period timings; irrespective of school building and classroom space, irrespective of gender, caste and location, irrespective of chances available to each person for expressing his/her ideas, and providing less-threatening virtual learning environment, ubiquitously. This is helping in not only reaching a large quantity, but also enhancing the quality of education with more flexibility and multi-tasking opportunity. These are a few, and also might be several other, reasons which are making facilitators, learners, stakeholders, policy makers and administrators for supporting and applying the technology in the field of teaching-learning at elementary level, with a greater enthusiasm.

2. Technology for Learner and Learning

2.1. Technology for Content

Learning-content is the backbone of all sorts of formal learning. The richer the content, in terms of quality, the richer the quality of learning. Learning-content can be full courses, course materials, content modules, learning

objects, collections and journals, etc. Earlier, the content was generated and developed by the experts only, and learners were having no say in this process, but now the scenario is changing. The development of content material is also thought to be as an opportunity for learning. The learners are also involved to collaborate in content creation, sharing, editing, enriching, review and feedback. Their maximum active participation in this process facilitates their learning. Technology, here, is playing a prominent role. There are online tools and software to support content creation, where learners can be efficiently involved giving rise to better learning on their part.

2.1.1. Document creation, sharing and collaborative editing

For document creation, sharing and collaborative editing, there are platforms viz. Google docs/ drive, which provide ample freedom, control and security of document development process.

For an instance, at elementary level, a story can be written on how clouds are formed following a classroom brainstorming discussion (DEP-SSA, 2007) session. During discussion various students may share various views. They can be asked to discuss and create a shared document on this topic. The collaborative editing of the created document on how clouds are formed can enhance the learning on the part of elementary learners.

2.1.2. Content creation in Hindi and regional languages

Using technology, it has become, now, very easy to create and edit content in Hindi, Bangla, Gujarati, Kannada, Malayalam, Marathi, Oriya, Punjabi and Telugu, just by typing in English. One can download and install Microsoft Indic Language Tool on a computer. Then, any language, as mentioned above, can be easily typed by transliteration process. For an instance, typing 'prathmik' using English keyboard will result into प्राथमिक in Hindi, પ્રાથમિક in Gujarati, প্রাথমিক in Bangla and ପ୍ରାଥମିକ in Oriya, etc. This can be used in creating document, presentations, data files, etc. Not only this, it can be used offline as well as online with almost equal efficiency. To clarify more, it can be used to write online emails, blogs, Facebook comments, twitter comments, etc. with the same efficiency as that of the offline documents. Moreover, editing process is the same as that of the application platform, it is being used.

For an instance, narration of an event (DEP-SSA, 2009a) by looking at a given picture showing two people sitting in a train can be a good activity at elementary level. The significant aspect of a narration is the learner would prefer to narrate in his/her own specific language and would be most comfortable in narrating his/her preferred language. The ICT tool discussed above can help a lot in

expressing thoughts in their own local/regional language.

2.1.3. Subject specific content tools

There are subject specific content tools available, viz. Celestia, Google Earth, and Geogebra, etc., which have not only in-built specific content, but also have prospects for subject related further activities.

For instance, stars in the sky or patterns (NCERT, 2010) formed in the sky can be a good topic to discuss at elementary level. Celestia can help a lot in such learning at elementary level. Geogebra can help in recognising various elementary shapes like circle, square, etc.

2.2. Technology for Creativity

Creativity is inherited in all the learners, though its degree may vary. This creativity can be used for better facilitating learning and learning. Creativity, here, can be understood as creating something new, with respect to one's own earlier experiences and capabilities. Learning through creativity not only involves divergent thinking, but convergent thinking, too. Facilitators can use creative learning through concept mapping, crosswords, puzzles, quizzes, gap-filling exercises and jumbled-sentences, etc. Technology can help learners and facilitators, both, for enhancing expression of creativity and cognitive abilities among learners.

2.2.1. Concept Mapping and Crosswords

Cmap and Hot Potatoes are exemplary software, which can be used for creating concept maps, quiz for multiple choice questions, short answer type questions, hybrid questions, gap-fill or close exercises, crosswords, jumbled-sentence exercises, matching or ordering exercises.

For an instance, learners at elementary level can create their own crosswords for names of vegetables. They further can try to develop a concept map what are names assigned to the relations in a family and how are they related to each other. This activity can create interest among learners and can result into expression of creativity.

2.3. Technology for Evaluation

A good evaluation is an inherent and integral part of learning process and benefits the learners (NCF, 2005). Technology can be efficiently used for evaluation purpose, too. Now a day, while the evaluation is accepted as an in-built and simultaneous process in teaching-learning, and while we have shifted towards concept of continuous and comprehensive evaluation (CCE) and fair/transparent evaluation, the need is there that the facilitator is in constant touch with and has record/recognition of all the activities of the learner, while undergoing the learning-process. The manual logging of all these formal and informal activities is not an easier task. Technology is

available for better evaluation through e-portfolio and rubrics.

2.3.1. e-portfolio evaluation

Using R-campus, e-portfolio can be created, managed and enhanced. The activities, facts, links, data, documents, audio, video, pictures, blogs, etc. depicted in the e-portfolio can be used, altogether, for CCE.

For instance, a field visit or educational tour or excursion or picnic can be a good activity for learning at elementary level. An e-portfolio can be created depicting various aspects pertaining to the visit viz. pictures, planning text, descriptions, history, video of the event, sharing experiences, some special sound clip, etc. It can also help in depicting and learning concepts related to time, distance, data, graphical representation, etc. (DEP-SSA, 2009b). This will reflect their learning which can help in better evaluation.

2.3.2. Rubric evaluation

Rubrics are the depiction of gradual hierarchical components of a task in order to assign a grade or category not only for evaluation, but feedback for improvement also. Using i-rubric or Rubistar, rubrics can be easily developed not only by facilitators, but also by the learners.

For an instance, a rubric can be developed for reciting a poem with expressions at elementary level. Learners can suggest not only various important aspects for a good recitation but also put them in an order as per their understanding. This can result into a rubric, which further can help in evaluation.

3. Technology for Facilitator and Facilitating Learning

3.1. Learning Management System

Learning management system (LMS) is an all-inclusive setup from beginning to completion of a learning task. Facilitator, with the help of learners, manages learning of his/her learners. They can share assignments, projects, activities, problems, feedback, qualitative assessment, exercises, etc. on a common platform. They can form groups, subgroups, etc. as per the need and task. These groups can be controlled or uncontrolled, closed or open, and facilitator-managed or learner- managed. Technology is helping in creating and managing learning through LMS.

3.1.1. Creating and managing wikispaces

Wikispaces and eXe are the exemplary tools which can be used as LMS. Learners can develop, edit, modify, enrich, and comment, etc. on documents in partial and full manner.

For an instance, addition and subtractions of large numbers (NCERT, 2011) can be performed by elementary learners in many ways. This becomes more varied though specific in nature while it is done mentally without pen and paper. A wiki can be created using

wikispaces where each learner can share how they perform such addition and subtractions.

3.1.2. Virtual classroom

Classroom 2.0 is one of the virtual classroom setting/platform, which can be used for various activities through discussion, deliberation, blogging, sharing resources, online lectures, etc.

For an instance, learners at elementary level may wish to share their co-curricular and co-scholastic experiences with their peers and facilitator while they visit their grandparents' home or some relative's place. These experiences may imbibe into them the moral and other values.

3.2. Facilitator Managed Communication Platform

Facilitator plays a vital role in facilitating learning. He/she, sometimes, plays the role of manager, controller, director, facilitator, demonstrator, guide, supervisor, resource, authority, listener, evaluator, etc. In this entire process, a communication platform is needed. Since facilitator is a formal agency for the formal learning, a communication platform managed by the facilitator is an essential elementary requirement. Technology has provided facilitator managed communication platform for enhancing formal learning through a blend of informal interaction with the learners and their parents, to.

3.2.1. Edmodo

Edmodo is one of the best facilitator managed communication platforms, which can be used for all the activities for sharing and interaction, including assessment and communicating to the parent of learners. The significant aspect of Edmodo is it creates different group code for every group, which can easily be shared by the facilitator to the prospective learners.

For an instance, elementary level learners can share instances of triangular shapes (DEP-SSA, 2009c) from their environment with others through pictures, videos, documents, etc. using Edmodo.

3.2.2. The Course Networking

The Course networking (thecn) is another communication platform, which has in- built system for self-achievement applause and motivation. This motivates the learner to proceed in addition to facilitator-managed communication for facilitating learning.

For an instance, elementary level learners can share year-long activities with the group thecn. The system gives some points to the learner for such a sharing and learning proceeding. This gives a sense of self-achievement to the learner.

4. Technology for Professional Development of Facilitators

4.1. In-service Training Programme

Professional development of facilitators is an essential element to help, in turn, in better facilitating learning and learning. During pre-service teaching,

facilitators, as trainee in any other profession, may not be acquainted with current trends, recent technology and updates in the field of education. Moreover, there is a need for consistent enrichment in the knowledge of facilitators related to latest educational policies, educational philosophies, educational strategies, recent changes and development, etc. for enabling them to facilitate learning in an efficient and justified manner. These are carried out through in-service training programmes (INSET). A large number of facilitators can't attend these programmes simultaneously and as and when needed. Technology has enabled facilitators to attend INSET programmes as per their ease, interest and requirement.

4.1.1. OCL4Ed and Coursera

Open Content Licensing for Educators (OCL4Ed) and Coursera are examples, which help facilitators to upgrade and enrich themselves by attending programmes and learning at their own ease and pace.

4.2. Academic Association, Collaboration and Forum

Academic association, collaboration and forum help facilitators to discuss their classroom problems, facilitating learning strategies and innovative ideas with other colleagues. They not only get solutions to the problems, but also share solutions to problems faced by their peers. Technology has made it easier to join some existing association, collaboration and forum or to create a new such body.

4.2.1. TICAL Community

TICAL is a community association for improving facilitating learning and learning by various sorts of activities.

4.2.2. Teacher 2.0

Teacher 2.0 is a collaborative forum of facilitators, where they can share their ideas, plan some activity, participate in conferences, seminars, etc.

4.3. Journals

Facilitators should know about innovative ideas, recent researches and should be able to share their own innovative ideas and researches about facilitating learning and learning. These can be best achieved with the help of journals in the field. Facilitators should have access to journals and periodicals. Technology has made it easier to explore for journals and specific content as per requirement to the facilitators.

4.3.1. DOAJ

Directory of open access journals (DOAJ) is an extensive source for a large number of open access journals. Journals can be freely explored, opened, read, referred, and most of the times downloaded, too.

4.4. Simple Data Tools

Facilitators, while facilitating learning and learning, needs to keep record of many other things also like assessment, progress, attendance,

percentage, data, charts, graphs, etc. Technology has enabled facilitators to keep all the data and operate with the data in an efficient manner.

4.4.1. Open Office Spread sheet

Open office is a set of application software for creating documents, presentations, spread sheets, etc. Using spread sheet, one can deal with the data and its editing in various possible forms.

4.5. Web Conferencing

No technology can replace facilitators and the value of their interaction with the facilitators. Even from NCF (2005), also, it can be drawn that ET/ ICT should be viewed as a supplement rather than as a substitute both for classroom facilitating learning and facilitator training. Hence face-to-face interaction is a must for better facilitating learning and learning. Technology has enabled facilitators and learners, not only to create virtual learning environment, but also to interact through real-time interaction platform, where they can see each other, talk to each other, accept each other and even feel each other's expressions.

4.5.1. Skype in the classroom

Skype in the classroom is a web-conferencing platform meant for teaching-learning purpose, where an expert can interact through online real-time visual sharing.

4.5.2. Google talk

Google talk allows people, or group of people, to interact among them freely for audio and video conferencing using the web.

4.5.3. WizIQ

WizIQ is meant for online classes, where along with text and audio, video and presentations can also be shared in real time. These classes go in a pre-planned manner and can be held free of cost as well as at some nominal charges.

5. Educational Technology Repositories

There are several educational repositories available for facilitators and learners, where they can find a lot of resources like text material, pictures, images, presentations, audio, video, links to the educational materials, etc. These repositories are very useful for facilitators keeping in mind various needs of various fields, subjects, topics, etc. Facilitators can explore these resources for making their facilitating learning efficient and facilitating learners in a better way.

5.1. Merlot

Merlot, as a part of its so many other varied important ventures, makes available a link-repository having documents, presentations, journal articles, books, videos, etc. which can be used for teaching-learning purposes. Merlot, in fact, creates links for material available at other places and then shares the links at a single platform. Hence, it can rather be said as a repository of web links of sources available at various websites.

5.2. Slide share

Slide share is a repository for presentations. Learners and facilitators can not only use and download the presentations, but also can upload their own presentations.

5.3. Open Clipart

Open clipart is a repository of pictures and images, which can be freely used and shared for various purposes for text, books, etc.

5.4. UNESCO and COL

UNESCO and COL websites are having vast repositories for a large number of educational resources on various themes.

6. A Note on OER and Web Educational Tools

Open educational resources are content, tools and licenses, which can be reused, reworked, remixed and redistributed irrespective of any restriction to the groups, fields, subjects, locations, specific-products, etc. without any copyright permission and that, too, free of cost. The principles lying behind the philosophy of OER are access, reach, quantity and quality education to all, in general, and to the last learner of the society, in specific. Now a day, endeavours, at large scale, are being made at national and international level, public and private level for creating, supporting and spreading OERs to the mass level for facilitating learning of the mass. There are open content, open tools, open platforms, open software and open repositories, too, which are boosting up the use of OER for facilitating learning and learning.

Web educational tools are online tools, which are helping in facilitating learning and learning. There are Web 1.0 tools, Web 2.0 tools and Web 3.0 tools, which are very well known. Web 2.0 tools are very popular among learners and have been supported at global level for better learning through active involvement and active participation. Web 2.0 is about user-generated content and the read-write web. The significant characteristic of Web 2.0 is people are consuming as well as contributing information through blogs or sites or site applications like Edublogs, Classroom 2.0, Teacher tube, web groups, etc. As revealed from various resources, Web 2.0 has some of the prominent aspects as being the read-write web, reaching one billion plus global users, focusing on communities, blogs (weblogs), sharing content, grand use of Wikipedia, XML, RSS, incorporating an enormous number of web applications, facilitating tagging ("folksonomy"), making websites more user friendly, reducing cost per click and valuing word of mouth etc. In the current era of Web 2.0, the dividing line between a consumer and content publisher is getting blurred, gradually. And, in some of the cases like wikispaces, this gap has been almost diminished, giving rise to equal and better opportunity for learning and facilitating learning.

7. Summary

Technology, due to its efficiency and advancement, has deeply mingled with the roots and flourishing buds of facilitating learning and learning in the current times. Technology is providing opportunity for collaborative content creation, enhancing creativity, fair, transparent and participatory evaluation in order to achieve quantitative, qualitative and acceptable facilitating learning and learning, depicting its trust in the principles of constructivism. Imagining facilitator in various possible roles, it supports learning and interaction through learning management system, web conferencing and various communication platforms. Technology, not only helps facilitator in classroom facilitating learning, but also to solve problems arising in classroom learning situations through INSET, academic association, collaboration, forum, etc. It provides access and reach to journals and repositories, where facilitators can find and share innovative ideas, recent development and resources for fruitful and efficient facilitating learning and learning. Though technology is available for various purposes, and in various forms, but facilitators can use one or many technologies as per the need and rationale. Finally, facilitator should be wise, free and justified to select, prefer, decide and apply the particular technology for facilitating learning and learning.

8. Let Us Have Some Hands-on Exercises

8.1. Explore Google docs/drive and create a collaborative document involving the learners.

8.2. Tell your learners to write a page in their own local language and try to type it using Indic language tool.

8.3. Create a rubric involving your learners on a topic of your interest using Rubistar and discuss it in your class.

8.4. Using wikispaces develop a write-up in your class on any topic by dividing it into five subtopics and each subtopic assigned to a small group of learners.

8.5. Tell your learners to explore five presentations pertaining to your subject area on slide share.

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All the authors and proprietors of the websites and published material, whose works are cited or quoted, with or without any changes, in this document, are highly and heartily acknowledged.

REFERENCES

DEP-SSA. 2007. *Effective Classroom Processes: A Resource Book*. New Delhi: IGNOU.

— 2009a. *Communication skill in English*. New Delhi: IGNOU.

— 2009b. *Teaching of Mathematics at Upper Primary Level*, vol I. New Delhi: IGNOU.

— 2009c. *Teaching of Mathematics at Upper Primary Level*, vol II. New Delhi: IGNOU.

— 2005. *National Curriculum Framework* 2005. New Delhi.

— 2010. *Mathematics Teachers' Training Manual*. New Delhi: NCERT.

— 2011. *Laboratory Manual Mathematics: Elementary Stage.* New Delhi.

9

Acquiring Scientific Skills through Science Education in Schools: A Critical Reflection

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Sunil Kr Singh**

Abstract

Science Education is an important part of the curriculum in schools. Science education enhances children's knowledge and understanding of themselves and the world around them. Various aspects related with science are so significant for life and society that science cannot be limited as a subject. Therefore, keeping in view the importance of science, the school teachers have to essentially pay more attention to it with a changed perspective. Importance of science process skills (basic and integrated) for a person's intellectual development and holistic development has to be emphasised in schools. In particular emphasis on scientific skill development through science education in the school curriculum has to be brought up .It necessitates to include more practical based activities (laboratory, exploratory and interdisciplinary) related to real world in the teaching–learning of the subject. The present review paper gives a brief introduction of science education, its purpose and the scientific skills which must be acquired through it in schools.

Key-words: Science Education, Scientific Skills.

Introduction

Science encompasses knowledge and understanding of the biological and physical aspects of the world and the processes through which they are developed. According to Sharma (2009), the three basic principles related to nature of science are as follows –

- An accumulated and systematised body of knowledge (content)
- The scientific method of inquiry; and
- The scientific attitude

Amongst them the first one indicates the 'product of science or the body of scientific knowledge', while the

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second and third indicate the 'process of science'. In other words, science is both- a product in form of a body of knowledge accumulated by scientists, and the process through which this knowledge has been acquired. Through the present paper specifically an attempt has been made to develop review based clarity on the concepts like science education, science process skills, scientific skills and the ways to develop scientific skills through science education in the schools.

Science Process Skills and Science Education

The above paragraph reflects that, the first dimension of science is the body of scientific knowledge which can be categorised as facts, concepts, generalisations, theories and laws. The second dimension is the process of science by which body of knowledge has been acquired. Individuals require 'science process skills' to involve in the process of science. The American Association for the Advancement of Science (AAAS) has classified the science process skills into fifteen skills (as cited in Akinbobola & Afolabi 2010) given below in table 1.

Table 1: Science Process Skills

i. observing	ii. measuring,	iii. classifying
iv. communicating	v. predicting	vi inferring
vii. using number	viii. using space/ time relationship	ix. questioning,
x. controlling variables	xi. hypothesizing	xii. define operationally,
xiii. formulating models,	xiv. designing experiments	xv. interpreting data.

While doing science and using science process skills through science education in schools, children construct, modify and develop a broad range of scientific concepts and ideas. Sharma (1992) has defined science as "the process by which we increase and refine understanding of ourselves and of the universe through continuous observation, experimentation, application and verification". Doing science involves them in the process of observation, questioning, discussion, prediction, analysis, exploration, investigation, and experimentation, while the knowledge and skills they acquire in the process may be applied in designing and making tasks. Thus, science education equips children to live in a world that is increasingly scientifically and technologically oriented.The report of the Education commission 1964-66, popularly known as Kothari Commission Report, laid emphasis on science-based education, in the following words (NCERT, 1970):

> "There is, of course, one thing about which we feel no doubt or hesitation: education, science-based and in coherence with Indian culture and values, can alone provide the foundation-as also the instrument-for the nation's progress, security and welfare."

In its recommendations on 'Education and Productivity' the Commission further mentioned that:

"Science education must become an integral part of

school education; and ultimately some study of science should become a part of all courses in the humanities and social sciences at the university stage, even as the teaching of science can be enriched by the inclusion of some elements of the humanities and social sciences."

The above observations clearly reflect the significance of science education. Thus, science education is also useful for children as it enhances their knowledge and understanding of themselves and the world in which they live. It involves children in the active construction of their own understanding. The understanding changes in response to the children are broadening experience. A scientific approach to investigations fosters the development of important skills,concepts and knowledge through which children can observe, question,investigate, understand and think logically about living things and their environments, materials, forces, everyday events and problems. The knowledge and skills acquired may be applied in designing and making activities in which children perceive a need to create or modify elements of their environments.

Purpose of Science Education

Science is a dynamic, expanding body of knowledge, covering ever- new domains of experience (NCF, 2005). The need to include science education in school curriculum is mainly to enable students develop scientific knowledge, skills and positive attitude towards science and technology. This would enable them understand the role and value of science and technology in society and interaction between science, technology and society. Science education creates awareness on the effect of scientific knowledge in everyday life (Abungu & et.al, 2014).According to NCERT (2013) the aim of science education for the learner is to –

- know the facts and principles of science and its applications, consistent with the stage of cognitive development;
- acquire the skills and understand the methods of processes that lead to generation and validation of scientific knowledge;
- develop a historical and developmental perspective of science and to enable her/him to view science as a continuing social enterprise;
- relate science education to environment (natural environment, artifacts and people) local as well as global and appreciate the issues at the interface of science, technology and society;
- acquire the requisite theoretical knowledge and practical technological skills to enter the world of work;
- nurture the natural curiosity, aesthetic sense and creativity in science and technology;
- imbibe the values of honesty,

integrity, cooperation, concern for life and preservation of environment; and

- cultivate scientific temper– objectivity, scepticism, critical thinking and freedom from fear and prejudice.

Das (1992) also described aim of science education which can be categorised as follows –

(i) Acquisition of knowledge and information
(ii) Development of interest and appreciation
(iii) Development of favourable habits
(iv) Training in scientific method
(v) Development of scientific attitude
(vi) Development of skills and abilities
(vii) Science studies as a basis of future career and
(viii) Provision for utilisation of leisure.

Sharma (2009) also discussed the main objectives of science teaching under following heads –

(i) Knowledge
(ii) Skills
(iii) Abilities
(iv) Attitude
(v) Training in scientific method
(vi) Interests and habit
(vii) Appreciation and
(viii) To provide work for leisure

Science Education and Scientific Skills

One of the basic aims of science education is development of skills. The advances in science and technology have transformed traditional fields of work such as agriculture and industry, and led to the emergence of wholly new fields of work. Today people are faced with an increasingly fast-changing world where the most important skills are flexibility, innovation, and creativity (NCF, 2005). The student should acquire skills in experimentation, construction, observation, drawing and problem-solving. The skills in experimentation include:

(i) Experimental skill- handling of instruments, arranging apparatus for an experiment & preserving chemicals, specimens, apparatus etc.

(ii) Constructional skill- making hand-made apparatus, repairing of certain instruments

(iii) Drawing skill- Drawing the sketches of certain experiments, Biological specimens, instruments etc.

(iv) Problem solving skill, and

(v) Observational skill

Vaidya (1996) defined scientific skills as "a desirable outcome of science education which provides sufficient instructional experiences as regards the acquisition of skills which will function at various levels of proficiency as the growing children pass through successive grades". Scientific skill may also be defined as a set of scientific abilities, appropriate to many science disciplines and reflective of the behaviour of students. As per the process approach of science, process

skills have been grouped into two types-basic and integrated. According to Padilla, 1990 as cited in George (2013) Scientific Process Skills (SPS) include skills that every individual could use at each step of his/her daily life by being 'scientifically literate' and increasing the quality and standard of life by 'comprehending the nature of science'. Further, Bybee (2014) listed five categories of skills: acquisitive, organizational, creative, manipulative, and communicative.

The scientific skills which can be developed through science education as described by Vaidya (1996) are as follows:

1. *General skills:* Language skills that is reading and writing
2. *Communication skills:* speaking and listening including dramatization
3. *Social skills:* to get on with people, respect for others and their property, self-competition, working effectively in groups, cooperation and emotional stability etc.
4. *Library Skills:* finding various and varied references and consulting them.
5. *Laboratory skills:* experimental skills needed in the laboratory to set up apparatus and develop preservation skills.
6. *Mathematical skills:* computation, graphing, ranking, averaging, approximating, geometrical drawings, dealing with symbols and reading tables.
7. *Aesthetic skills:* artistic sensitivity and physical ability to prepare charts, models, instructional and illustrative materials.
8. *Safety skills:* avoiding accidents and ability to do first aid whenever needed.
9. *The abstract skills:* ability to recognize and classify things on the basis of common characteristics, ability to analyse simple and complex problematic situations, ability to check evidence, ability to verify one's ideas, ability to judge absurdities, irrelevancies and fallacies, ability to set up control experiments and thereby to distinguish between relevant and irrelevant variables and development of insight into the nature of underlying assumptions and proofs.

According to Padilla (1990) the basic (simpler) science process skills provide a foundation for learning the integrated (more complex) science process skills. These skills have been listed and described below-

Scientific Skills as Basic Science Process Skills

These skills described below provide a basis or foundation for more complex skills, hence are known as 'basic science process skills,.

1. Observing — using the senses to gather information about an object or event. Example: Describing a pencil as green, yellow, blue, and black and so on.

2. Inferring — making an "educated guess" about an object or event based on previously gathered data or information. Example: Saying that the person who used a pencil made a lot of mistakes because of certain reason like- the eraser was badly worn.
3. Measuring — using both standard and nonstandard measures and estimates to describe the dimensions of an object or event. Example: Using a meter scale to measure the length of a table in centimetres.
4. Communicating — using words or graphic symbols to describe an action, object or event. Example: Describing the change in height/ girth of a plant over time in writing or through a graph.
5. Classifying — grouping or ordering objects or events into categories based on properties or criteria. Example: Placing all insects having same characteristics into one group.
6. Predicting — stating the outcome of a future event based on a pattern of evidence. Example: Predicting the height of a plant in two weeks' time based on a graph of its growth during the previous four weeks.

Scientific Skills as Integrated Science Process Skills

These skills are based on the above mentioned basic skills. The integrated skills are as follows and require mastery of basic process skills for development.

(i) Controlling variables — being able to identify variables that can affect an experimental outcome, keeping most constant while manipulating only the independent variable. Example: Realizing through past experiences that amount of light and water need to be controlled when testing to see how the addition of organic matter affects the growth of peas.

(ii) Defining operationally — stating how to measure a variable in an experiment. Example: Stating that pea plant growth will be measured in centimetres per week.

(iii) Formulating hypotheses — stating the expected outcome of an experiment. Example: The greater the amount of organic matter added to the soil, the greater the pea plant growth.

(iv) Interpreting data — organising data and drawing conclusions from it. Example: Recording data from the experiment on pea plant growth in a data table and forming a conclusion which relates trends in the data to variables.

(v) Experimenting — being able to conduct an experiment, including asking an appropriate question, stating a hypothesis, identifying and controlling variables, operationally defining those variables, designing a

"fair" experiment, conducting the experiment, and interpreting the results of the experiment. Example: The entire process of conducting the experiment on the affect of organic matter on the growth of pea plants.

(vi) Formulating models — creating a mental or physical model of a process or event. Examples: The model of how the processes of evaporation and condensation interrelate in the water cycle.

Developing Scientific Skills among Students

Benchmarks for Science Literacy emphasize the importance of development of skills in preparing students to "make their way in the real world, a world in which problems abound-in the home, in the workplace, in the community and on the planet." (Valentino, 2000). Development of critical thinking skills, including science process skills, Information and Communication Technology (ICT) skills, Communication skills and many other important skills contribute to the development of students' potential in the class. These skills are applicable in many areas in life. The shift from the teacher-centred method of teaching science to child-centred activity based methods which encourage and develop in the child the spirit of inquiry; an attempt to make students fully aware as well as understand the ways scientists work; and also the equipping and preparing students for their careers in science and technology led to the development of scientific skills (Akinbobola et.al., 2010).

Inculcation of scientific skills among students is an important aspect of teaching learning process. Therefore, these skills affect the personal, social, and global lives of individuals. The scientific skills are a necessary tool to produce and use scientific information, to perform scientific research, and to solve problems. These skills can be acquired by students through certain science education activities in schools. Scientific skill training can also be done through the involvement in the development of teaching learning materials (TLM). By developing such materials, the teacher and the student both will have a great opportunity in the development of desirable skills. Activities such as TLM based experimentation or exploration activities are capable of directing teachers and students in developing scientific skills.

Padilla (1990) has given following three strong arguments and stressed on the need and importance of including science process skills based activities in classroom learning:

(i) Generalisability of these skills to life.

(ii) Process skills based activities more accurately reflect the nature of science and acts of scientists.

(iii) Process skills based activities involve the development of formal reasoning abilities.

Conclusion

Science learning and the development of scientific skills are integrated activities. It is a well-known fact that science is a practical subject. Students learn better by active participation and learning by doing. Scientific skills are basically the process skills namely basic and integrated process skills. The learning outcomes related to science which every student should possess basically depend on the scientific skills integrated in various types of activities in school-be it in science or other subjects and activities too. School is the most appropriate place where a student can be provided opportunities to inculcate these skills. Development of these skills among students is planned by the teacher during teaching learning and assessment process. Hence a teacher should also be equally aware about the theory and integration of these skills. Acquiring scientific skills is not a very quick process. These skills can be developed among students through training and practice simultaneously .Similarly a teacher has also to ensure the same in his/her case. For this purpose a science teacher should be trained (pre-service and in-service) about- how to adopt innovative teaching practices in science education? Innovative teaching practices should be totally focused on development of scientific skills with proper understanding of the subject. Science education needs a model of learning as a medium for teachers to implement the understanding and knowledge of the scientific skills as well as the effective use of instructional materials to inculcate scientific skills. In addition to the training of science teachers, it also needs the development of learning models that provide opportunities for teachers and students to develop scientific skills together, such as lab -based learning model and explore the natural environment around the schools. Infusion of science process skills (basic and integrated) is required in the laboratory learning, exploring the nature and linkage of science with other subjects in schools .Such orientation is to be focussed for promoting inculcation of scientific skills through science education in schools. It will make our life more qualitative and happy.

REFERENCES

Abungu, H. E., M.I.O. Okere and S. W. Wachanga. 2014. *The effect of Science Process Skills Teaching Approach on Secondary School Students' Achievement in Chemistry in Nyando District, Kenya.* 4(6), 359-371. Retrieved from file:///C:/Users/hp-pc/Downloads/4101-16073-1-PB%20(1).pdfon 23/12/2014

Akinbobola, A.O. and F. Afolabi. 2010. Analysis of Science Process Skills in West African Senior Secondary School Certificate Physics Practical Examinations in Nigeria. *American-Eurasian Journal of Scientific Research.* 5(4). 234-240. Retrieved from http://idosi.org/aejsr/5%284%2910/3.pdf on 18.12.2014

Bybee, R.W., J.C. Powell and L.W. Trowbridge. 2014. Categories of Skills and Abilities In Science Class.Retrieved from http://www.education.com/reference/article/skills-abilities-science-class/ on 08.01.2015.

Das, R. C. 1992. *Science Teaching in Schools*. New Delhi: Sterling Publications Private Limited.

NCERT. 1970. Education and National Development – Report of the Education Commission 1964-1966. Delhi: NCERT

Fitzpatrick, F. 1960. *Policies for Science Education*. New York: Bureau of Publication, Teachers College, Columbia University.

George, A. 2013. *Effectiveness of web based instruction in learning scientific skills among higher secondary students*.

NCERT. 2013. *Pedagogy of science,* Part –I. New Delhi: NCERT

— 2005. *National Curriculum Framework*. New Delhi: NCERT

Padilla, Michael, J. 1990. The Science Process Skills, Research Matters To the Science Teacher, No. 9004, National Association for Research in Science Training.

Sharma, L. M. 2003. *Teaching of Science and Life Science*. New Delhi: DhanpatRai Publishing Co. (P) Ptd.

Sharma, R. C. 2009. *Modern Science Teaching*. New Delhi: DhanpatRai Publishing Company(P) Ltd.

Vaidya, N. 1996. *Science Teaching for the 21st Century*. New Delhi: Deep and Deep Publication.

Valentino, C. 2000. *Developing Science Skills*. Retrieved from http://www.eduplace.com/science/profdev/articles/valentino2.html on 15.12.2014

10

Teacher's Perception and Practice About Nature-based Teaching at the Pre-primary Level

Kriti Sharma*

Abstract

Young children learn about the natural world by interacting with it, teachers and other adults must attend to the frequency, nature, and the quality of interactions that take place between the children and the natural world during the early years. These days lives of children are much different as they have much lesser opportunities for outdoor free play and contact with the natural world on a regular basis. There are a number of factors which have shrunk their physical boundaries (Francis 1991, Kyttä 2004). Parents these days are afraid for their child's safety and a 'culture of fear' has set in.School and teacher's role is thus imperative in introducing nature to the preschool children. A study was conducted to find out the perception and awareness of teachers towards adoption of nature based education at the pre primary level. Purposive sampling technique was used to select the sample and data was collected with the help of a questionnaire, rating scale and observation schedule.A series of need based workshops creating awareness about nature education was conducted. Findings of the study reveal a positive change in the attitudes and practices of the teachers about natural environment education, on comparison of pre-test and post-test results. The results showed, an exceptional rise in the domain of emotional development, which further proved that, when children develop love for animals, plants, insects, birds and the environment they form a positive attachment to it. This emotional bond aids them in the learning process and thus, facilitates their overall growth or holistic development. Also it implies that the awareness and attitude of teachers can be augmented through intervention programmes. Inclusion of natural environment components in the preschool curriculum needs strengthening.

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Introduction

Natural education refers to acquiring of knowledge and sensitivity towards nature in a lifelong process beginning from preschool level and continuing through all the stages of life. It creates opportunities where children can have a direct experience with nature. Wilson (2002) suggests that the process by which young children learn about the natural world should begin before the kindergarten. The preschool years are considered crucial for developing the right knowledge and attitude. Children must develop a sense of respect and care for the natural environment during their beginning years of life or be at risk for never developing such attitudes (Stapp, 1978; Tilbury, 1994; Wilson, 1994). Early experiences with the natural world have also been positively linked with the sense of wonder. This way of knowing, if recognized and honoured, can serve as a lifelong source of joy and enrichment, as well as an impetus, or motivation, for further learning. However the ability to experience the surrounding environment and the natural world as a source of wonder tends to diminish over time (Wilson, 1997). So in the initial years it is important to spark the curiosity and wonderment of the natural surroundings.

People often assume that outdoor education must take place in semi-rural settings. However urban settings can also offer ways to spend time in nature outdoors. A small amount of exposure to nature really offers huge opportunities. For example, urban teachers can plan a nature walk or a time to study clouds (Erickson, 2008).

Children's emotional and affective values of nature develop earlier than their abstract, logical and rational perspectives (Kellert, 2002). Rather than books and lectures, nature itself is children's best teacher (Coffey, 2001). Children have an innate, genetically predisposed tendency to explore and bond with the natural world known as biophilia, i.e love of nature (Sobel 1996, 2002; Kellert, 2005)

The way children learn is completely different from adults. To be effective, children's environmental education needs to be designed to match children's developmental needs, interests, abilities and learning styles (Bredencamp and Copple 1997). Adults usually see nature as a background for what they are doing, as a visual, aesthetic experience. Children experience nature holistically (Olds 1989) and not as a background for events (Cohen and Wingerd 1993), but rather as a stimulator and experiential component of their activities (Sebba 1991). Young children are active learners and their best learning occurs with hands- on experience, interactive play and self- discovery rather than on trying to impart knowledge to them (Piaget 1952; Fein 1981; Bergen 1988; Similansky and Shefatya 1990; Bredencamp and Copple 1997)

A teacher can play a pivotal role in fostering the love for nature in

the preschoolers. By providing early experiences with nature teachers purposefully support children's development of scientific and aesthetic thinking, so they can "appreciate beauty, express creativity and perceive patterns and develop senses" (Torquati and Barber 2005).

Methodology

The study aims to find out the awareness level and approaches adopted by pre primary level teachers for developing love for natural world among preschool children. The study also aims at developing attitudes and knowledge about the natural environment with the help of series of workshops/intervention programme.

The objectives of the study were –

(i) To find out the attitude and teaching practice related to natural environment adopted by teachers.

(ii) To plan and implement intervention programme which includes a series of PowerPoint presentations on raising awareness and suggesting strategies to preschool teachers for including natural environment education.

(iii) To study the difference in perception of attitude and practices of teachers before and after the intervention programme.

Sampling method

Purposive Sampling was used to select the schools. The schools those were willing to participate in the intervention programme and ready to provide researcher with the required sample size and gave permission for observation of the classrooms, were selected.

Sample Size

The total sample size for the study was 17 pre-primary teachers (5 Nursery teachers, 6 Junior K.G teachers, 6 Senior K.G teachers) from one of the English medium school in Mumbai city.

Procedure of Data Collection

The tools used for data collection were:

1. Questionnaire
2. Rating scale
3. Observation schedule

The questionnaire was divided into two parts:

1. General profile of the teachers
2. Knowledge about natural environment

Rating Scale

A 5 point rating scale was used which consisted of 32 statements specific to attitude of preschool teachers towards natural environment.

Also a 4 point rating scale was used which consisted of 27 statements specific to the teaching practices adopted by the teachers.

Observation schedule

An observation schedule was prepared to observe and document the practices of the teachers before and after every intervention programme/workshop.

The schedule was designed to record the teaching sessions.

Validation of the tool

The tool was validated by two experts in the field of Early Childhood Education. The suggestions were incorporated and required changes were made in the tool.

Pilot study

The tool was pilot tested with 10 preschool teachers who were purposely selected from three English medium schools in Mumbai city to understand the effectiveness of the tool before administering it to the sample of the study.

Procedure for Data collection

The procedure of data collection started with the identification of the schools where the study was intended to be carried. The data collection began with a series of observations of pre primary classes followed by the administration of pre test questionnaire and then the workshop on Introducing natural environment and ways to develop love for nature was conducted, followed by observations of classroom interactions. Workshop using power point presentation on developing teaching strategies and activities for imparting nature based education was conducted; follow-up for administering the impact by observing the classes and questionnaire was used to see the change in attitude of teachers.

The duration of classroom observations done during the course of the study was 13 hours and 50 minutes and the running record was maintained instantly.

Data Analysis

The responses obtained from the rating scale were scored for each of the 32 statements. The total score was obtained and used to learn about the attitude of teachers about natural environment. For other 27 statements percentage response for each category was obtained and effort was made to know about the teaching strategies adopted by the teachers. The data was then presented in form of graphs and analyzed subsequently. The data from the pre test and post test questionnaire was tabulated and represented in the form of graphs. The data obtained through observations were also analyzed qualitatively and presented.

Results and Discussions

The distribution of the sample based on their age group and teaching experience showed that majority of teachers around 34% were in the age group of 19-25 years followed by 24% in the age group of 26-32 years. Around 36 % had experience of 12 to 17 years in teaching children at the pre primary level.

Teachers' awareness about Nature Education

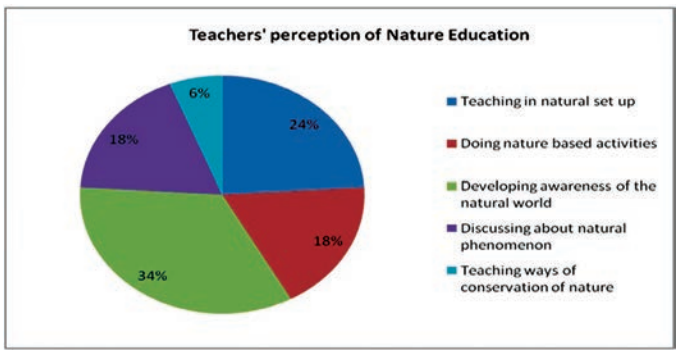
69% of the teachers had heard about Nature Education through books (15%), internet, friends, school (24%), magazines (10%) and workshops (6%).

However 31% of the total sample size had not heard or read about pre primary education focusing on natural elements. Nature Education being a newly emerged concept is not followed as part of the pre primary curriculum by teachers.

Teachers' understanding of Nature Education

The study further proceeds to explore the understanding of the teachers about Nature Education and it is found that a highest percentage of teachers ,34% think that nature education is about developing awareness of the natural world. However only 24% assume that teaching children outdoors in the natural set up is the only way of imparting natural education.

Out of the total sample 18% feel that talking about natural phenomenon in the class and doing nature based activities is the way to nature education. While only 6% teachers assume nature education as a concept highlighting conservation of nature.



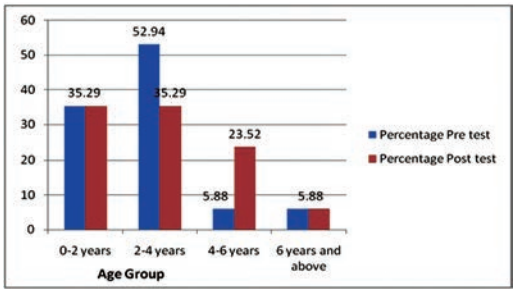
After conducting the intervention programme with the pre primary teachers the pre test and post tests the results were compared and following are the results based on the responses obtained from them in the questionnaire.

Right age for introducing child to nature

The graph below illustrates that same percentage of teachers, 35.29% think 0-2 years of age as the right age for introducing child to nature in pre test and post test. In the age group of 2-4 years, the percentage response of teachers is very high, 52.94% compared to 35.29% in the post test. An increase of 17.64% in the post test percentage response is seen in the age group of 4-6 years compared to the pre test. However the percentage response of the teachers in the age group of 6 years and above remained constant, 5.88%.

A decrease of 17.65% is seen in the age group of 2-4 years in the post test compared to pre test. While an increase in the percentage responses (17.64%) for age group of 4-6 years in the post test in comparison to pre test. The teachers assumed that the right age for introducing children to natural environment is 4-6 years because children of this age start going to the preschool, which is seen as a platform for learning new concepts and thus a

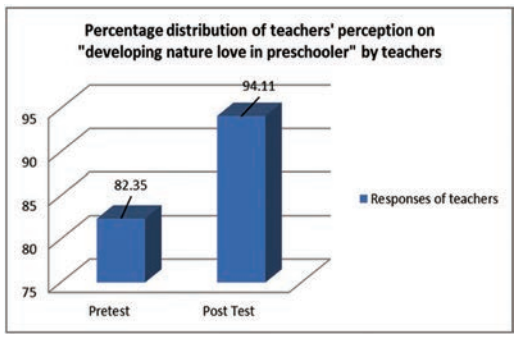
better perception of nature, can be established in the child's mind.



Teachers' perception on developing care and concern for natural environment

The results shows that 82.35% of the teachers in the pretest responded positively on developing of care and concern for natural environment compared to the 94.11 % teachers in the post test. The teachers in the pretest assumed that there are individual differences and the relationship with nature cannot be developed in all the children, as it is inborn. However the posttest percentage of teachers' response showed that the teachers held the view that love for nature can be developed in the children.

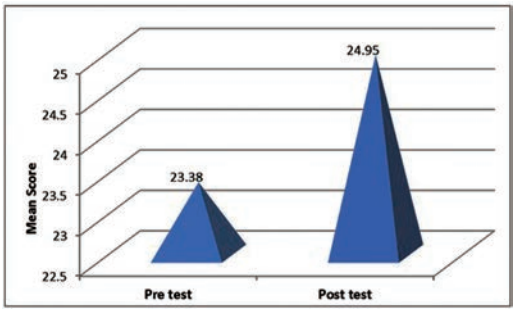
The research by Bunting & Cousins 1985, Harvey 1989 supports the responses of teachers in the post test. The high percentage of teacher response in the post test can be attributed to the intervention program in form of three workshops. Also the observations done in the classroom and during outdoor play shows that as suggested in the workshops children when, over the time were exposed to natural elements in the classroom like pictures, videos of plants and animals, potted plants etc., developed a sense of appreciation towards nature and thus the change in the perception of teachers was seen in the post test.



Inclusion of Nature Education in preschool curriculum

The result obtained from the pre-test shows a lower mean score of 23.38 as compared to the post test score of 24.95. The post test results showed a positive perception and can be supported with works done by many researchers.

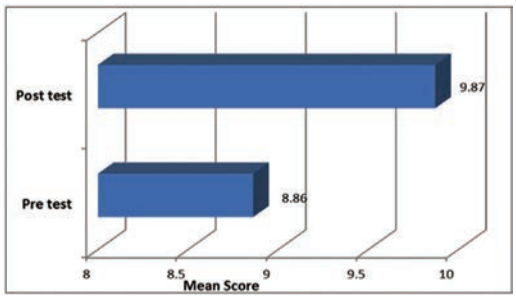
Chawla, 1994 said "More recently, there has been significant interest in promoting young children's awareness of environmental concerns and what are commonly accepted as friendly environmental practices. Consistent with that interest, environmental awareness activities are often incorporated into curricula for young children in preschool and elementary school classrooms." The teachers in the post test assumed that the nature education kept children in constant touch with the natural surroundings.



The teachers after the intervention programme started nature inclusive curriculum, for instance counting, letter construction were taught by giving hands on experience to children with usage of twigs, leaves, shells, toy animals etc., which supports the apparent increase in the post test mean score.

Perception on role of teachers in imparting Nature Education

The data depicted shows that the pre test score (8.86) and the post test scores (9.87) of the teacher perception of role of teachers in creating sensitivity in the children regarding nature. There is an increase in the mean score of post test by 1.01 compared to the pre test which indicates that teachers perceive their role to be important for developing love for nature in the preschoolers. A child on an average spends 4-5 hours in school and a teacher through stories and through various teaching strategies can develop the sensitivity in the children and further seek help of parents to reinforce the feeling of sympathy and care towards the nature and environment.



The study looks in the classroom strategies adopted by the teachers in teaching children for imparting nature education. The following strategies were studied:

Giving hands on experience

The comparison of scores of pre test and post test showed that the teachers' response to providing hands on experience showed a rise by 22.06%. It can be assumed that after the intervention the teachers believed that giving hands on experiences will give a better understanding of the nature concept to the children. The teachers introduced the concept of number using pea pods, as children sat in groups and counted the pea pods. The teachers used the natural elements to teach concept of numbers to the children. The classroom observations indicated that teachers gave hands on experience to the children by bringing tomato plant in the classroom and showing the children various parts of the plant and children participated in touching the leaves of the plant and the little tomato fruit part red and part green.

Chawla (1998) "Without continuous hands-on experience, it is impossible

for children to acquire a deep intuitive understanding of the natural world that is the foundation of sustainable development".

Inclusion of experimentation in classroom teaching

The inclusion of experimentation in the classroom teaching when studied through the pre and post test scores indicated that a rise of 13.72% was seen in post test scores which showed that experimentation was used as a strategy to teach children about the natural world. The classroom observation done post interventions showed that the teachers included experimentation for teaching children about the natural surroundings like teaching the concepts of floating objects through the use of objects collected during nature walk like fallen leaves, flowers, twigs, grass blades, mud ball, stones, feathers etc.

Children experience nature as a stimulator and experiential component of their activities (Sebba, 1991). The children judge nature not by aesthetics, but rather by the manner of their interaction and sensory experiences with it (Cobb 1997, Gibson, 1977; White and Stoeklin, 1998).

Inclusion of questioning in Nature Education

The pre test percentage of the teachers who always are in the support of questioning children for better perception of nature is 29.4% which almost doubled to 59% in the post test. While the majority of the teachers who often chose questioning children on nature based concepts during the pre test, decreased by 20% in the post test. During the observations after the intervention sessions it was learnt that teachers included questioning related to the natural elements, like discussion on wild animals by quizzing children on how pet animals are different form wild animals. It developed inquisitiveness and curiosity amongst the children who shared their experiences of having pets at home or visiting the zoo.

Summary and Conclusion

The preschool plays an important role in shaping the views of the child as it is seen as the window for introducing the child to the outer world. So nature education is seen as facilitator of future development of the child. With the present day curriculum which focuses on all the developmental domains of the child, natural environment education can be fused with other subjects and easily imparted to the young children.

Teachers play an essential role in creating child's learning environment. It is important for the teacher to adopt the teaching strategies for imparting nature education so that the child not only develops the right knowledge and attitude but also the concern and love for the nature. The foundation of this relationship is however laid in the preschool years and nature education acts as a pivotal force in strengthening of this bond.

It may be concluded that majority of the teachers have heard of nature education but it was not used in the classroom teaching consciously. They felt that a special class needs to be allotted to teach the concept of nature sensitivity. The intervention programme which included three workshops to enhance the awareness about Nature Education among teachers and ways in which it can be included in the classroom teaching were also suggested. After the workshops, the teachers showed a more positive attitude towards practicing nature education in the class and taking the responsibility of introducing nature to the preschoolers. This reflected their view that nature education should be a part of preschool curriculum. This was observed in the practice also, the teachers tried to include components of natural environment into the classes. However the teachers showed preference towards giving hands on experience, questioning the child about nature, participation of teachers in nature related activities and inclusion of nature based activities. I would also like to thank Dr. Padma Yadav, Associate Professor, NCERT for her guidance and editorial support.

REFERENCES

Bergen, D. 1988. *Play as a medium for learning and development.* Portsmouth, NH:Heinemann.

Bredencamp, S. and C. Copple. 1997. "Developmentally appropriate practice in early childhood education". Washington, D.C.: AEYC: pp.10-20.

Bunting, T.E. and L.R. Cousins 1985. "Environmental dispositions among school-age children". *Environment and Behaviour.* 17(6), pp.15-23.

Chawla, L. 1994. "Editors' Note". *Children's Environments.* (11) 3.

Coffey, A. 2001 "Transforming School Grounds, in Greening School Grounds: Creating Habitats for Learning"' (eds) Grant, Tim and Littlejohn, Gail, Toronto:Green Teacher and Gabriola Island, BC: New Society Publishers.

Cohen, S. and D. Wingerd. 1993. "Children and the environment: Ecological awareness among preschool children", *Environment and Behavior.* 25(1), pp.103-120.

Erickson, M. 2008. "Ensuring that all children can spend quality time outdoors" *Young Children.* 2(3),pp.1-5.

Fein, G. 1981. "Pretend play: An integrative review". *Child Development.* 52, pp. 1095-118.

Fjortoft, I. 2001. "The Natural Environment as a Playground for Children: The Impact of Outdoor Play Activities in Pre-Primary School Children". *Early Childhood Educational Journal.* 29(2), pp.111-117.

Kellert, S.R. 2002. "Experiencing Nature: Affective, Cognitive and Evaluative Development, Children and Nature: Psychological, Socio-cultural and Evolutionary Investigations". Cambridge, MA: The MIT Press.

Olds, A. 1989 "Nature as a healer". *Children's Environments Quarterly*. 6(1), pp.27-32.

Piaget, J. 1952. "The origins of intelligence in children". New York: International Universities Press.

Pyle, R.M. 2002. "Eden in the Vacant Lot: Special Places, Species and Kids in the Neighbourhood of Life". In Peter Kahn, Jr. and Stephen Kellert (Eds.). "Children and Nature: Psychological, Socio-cultural and Evolutionary Investigations", Cambridge, MA: The MIT Press.

Sebba, R. 1991. "The landscapes of childhood— The reflection of childhood's environment in adult memories and in children's attitudes". *Environment and Behaviour*. 23(4), pp. 395-422.

Smilansky, S. and L. Shefatya.1990. "Facilitating play: A medium for promoting cognitive, socio-emotional and academic development in young children". Gaithersburg, M.D: Psychosocial and Educational Publications.

Stapp, W. 1978. "An instructional model for environmental education". *Prospects*. 8(4), pp. 495-507.

Tilbury, D. 1994. "The critical learning years for environmental education". In R.A. Wilson (ed.), "Environmental Education at the Early Childhood Level". Washington, DC: North American Association for Environmental Education, pp. 11-13.

Torquati, J. and J. Barber. 2005. "Dancing with trees: Infants and toddlers in the garden", *Young Children*. 60(3), pp. 40-47.

Wilson, R.A. (Ed.). 1994. "Environmental education at the early childhood level", Washington, DC: North American Association for Environmental Education.

Wilson, Ruth A. 1997. "The Wonders of Nature-Honoring Children's Ways of Knowing". *Early Childhood News*. 6(19).

Wilson, Ruth A. 2001. "More than lessons including animals in the classroom". *Early Childhood News*. 13(6), pp. 54-61.

11

Concept Mapping as a Successful Tool of Teaching-Learning and Evaluation in Primary Grades

Ratna Gupta*

Abstract

There are various methods of teaching as lecture method, seminar method, discussion method, learning by doing, play way method, etc. One of these methods is concept mapping method which is comparatively less heard. Concept mapping is a graphical tool for organising and representing knowledge. It includes concepts, usually enclosed in circles or boxes of some type and relationship between concepts is indicated by a connecting line. Words written on the connecting line referred to as linking words or linking phrases, specify the relationship between the two concepts. Is concept mapping a successful tool of teaching learning and evaluation in primary grades? This research paper inquires about it.

There are various methods of teaching as lecture method, seminar method, discussion method, learning by doing, play way method, etc. One of these methods is concept mapping method which is comparatively less heard. Concept mapping is a graphical tool for organising and representing knowledge. It includes concepts, usually enclosed in circles or boxes of some type and relationship between concepts is indicated by a connecting line. Words written on the connecting line referred to as linking words or linking phrases, specify the relationship between the two concepts.

Concept maps are represented in a hierarchical fashion with the most inclusive most general concepts at the top of the map and the more specific less general concept arranged hierarchical below. Specific examples of events or objects that help clarify the meaning of a given concept, may be added to concept maps, but normally, these are not included in ovals or boxes.

Concept mapping is based on Asubel's (1963) Assimilation Theory of Learning. The fundamental idea in his theory is that learning takes place

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by the assimilation of new concepts into propositional framework held by the learner.

According to Novak, J.D. (1990), concept mapping is so powerful for the facilitation of meaningful learning that it serves as a kind of template to help organise knowledge and structure it, even though the structure must be built up piece-by-piece with small units of interacting concepts and propositional frameworks. Many learners and teachers are surprised to see how this simple tool facilitate meaningful learning and not only permit utilisation of knowledge in new contexts, but also retention of the knowledge for long periods of time.

Shailza, H.M.(2009) reveals in her study that most of students (93.5 per cent) agree that concept mapping is useful in understanding the concept. Majority of the pupils are of the view that the concept maps help in seeing relationship between concepts. More than two-third students report that concepts mapping is useful in remembering the content. Around sixty per cent students reply that concept maps help them in finding relationship between subordinate and super-ordinate concepts. 62.5 per cent students feel that the group concept mapping is easier and 37.5 per cent of students feel that individual concept mapping to be easier.

Agarwal, P. (2012) in her research article tells about the history of concept mapping and the process of making good concept maps.

Process of Concept Mapping

The process of concept mapping has three steps –

Starts with a Main Idea Topic or Issue to Focus on

A helpful way to determine the context of your concept map is to choose a focus question something that needs to be solved or a conclusion that needs to be reached once a topic or question is decided on, that will help with the hierarchical structure of the concept map.

Then Determine the Key Concepts

Find the key concepts that connect and relate to your main idea and rank them most general inclusive concepts come first, then link to smaller more specific concepts.

Finish by Connecting Concepts Creating Linking Phrases and Words

Once the basic links between the concepts are created, add cross links which connect concepts in different areas of the map, to further illustrate the relationship and strengths in student's understanding and knowledge of the topic.

It is important to recognise that a concept map is never finished. After a preliminary map is constructed, it is always necessary to revise this map. Other concepts can be added. Good maps usually result from three to many revisions. This is one reason why using computer software is

helpful. The concept map can also be a class effort, using a projector, where all students can give their opinion and participate in the construction of the map. There is a growing body of research that shows that when students work in small groups and cooperate in striving to learn subject matter positive cognitive and affective outcomes result (Berk, 1995).

Vygotsy (1978) introduced the idea that language and social dialogue can support learning, especially when members of the social group are at about the same zone of proximal Development (ZPD). He describes the ZPD as that level of understanding for a given subject where the learner can progress on her/his own, with minimal aid from a tutor.

Preszler, (2004) states when students work co-operatively in group and use concept maps to guide their learning, significantly greater learning occurs.

How to Use Concept Mapping in Teaching, Learning and Evaluation

Lower Primary Level

Similarly, at lower primary level a teacher can teach students through concept maps based on pictures. She/he can have some picture cutouts and coloured pencils and paste them on the chart. She/he can draw lines and cross links with the coloured pencils and She/he can also write connecting words, with the markers. An example of picture concept map is shown in Fig. 1.

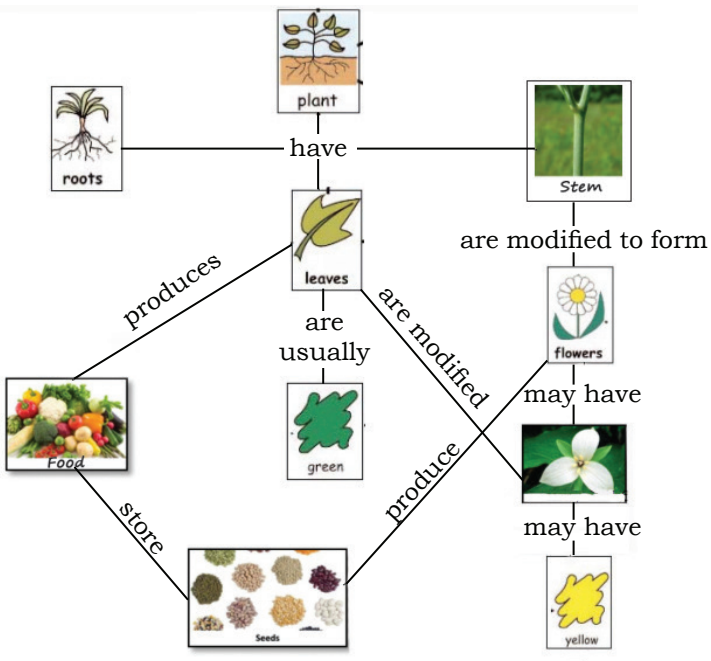

Fig. 1. An example of picture concept map for structure of plant

This technique can be used for evaluation also, for this purpose she/he can make use of following techniques-

Linkages and Linking Words Missing Techniques

She/He can paste pictures on the chart and ask students to draw linkages and write linking words with the coloured pencils.

Picture Missing Technique

Another technique may be picture missing technique. Some important pictures can be missing from the map and otherwise it may be complete. Students can be asked to stuck the missing picture at the blank space.

Picture Rearrange Technique

Another technique may be that all the pictures can be placed at the wrong place in the concept map and the students can be asked to rearrange the pictures putting right pictures at the right place otherwise the map may be complete.

Complete Picture Map Construction Technique

Beside, a teacher can evaluate through complete pictures map construction technique. The teacher can give to the students picture cutouts and a blank chart with focus question written on it and ask students to prepare a picture concept map for the focus question.

Upper Primary Level

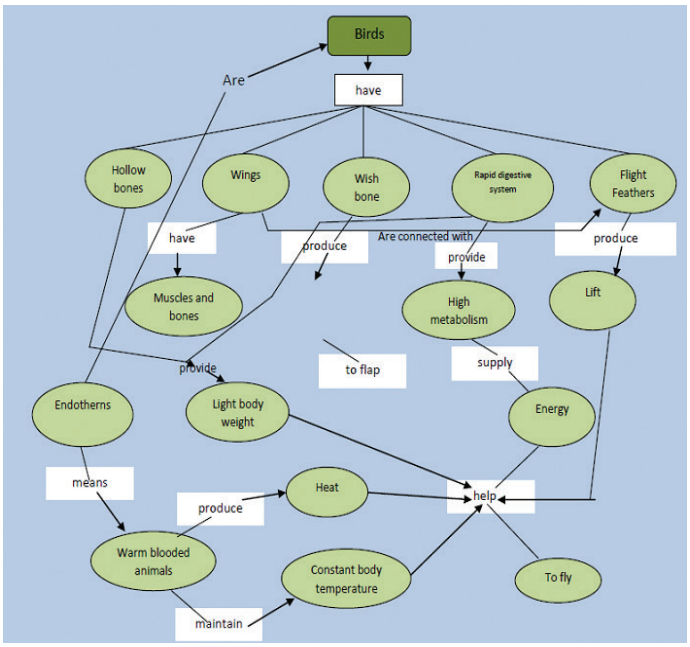

Fig. 2. An example of concept map for 'how birds fly'

At upper primary level a teacher can make a concept map on the blackboard step-by-step elaborating it thoroughly to the students. One example of concept map teaching is shown in Fig. 2.

Another way of teaching can be that the teacher can write the focus question on the blackboard and ask students to come and add something to the map. It is an example of group concept mapping in which each and every student participates. Thus, the knowledge gained is collaborative.

Another way of teaching through concept mapping at this level may be that the teacher should divide students into small groups, and ask them to prepare concept maps. When all the group have prepared their concept maps, teachers can ask leaders of the group, to form again a group of leaders who have to prepare only one concept map again by taking help of all the group maps and finally only one leader out of all the leaders will present the concept map on the black board.

For evaluation at upper primary level, a teacher can apply following techniques-

Concept Map Construction for the Focus Questions

A teacher can ask students to draw a concept map in their notebooks for the given focus question, she/he can give this assignment in group as well as individually.

Concept Map Elaboration Technique

Another way is that she/he can draw the concept map on the blackboard and ask students to elaborate it in their notebook.

Ovals Present and Content Missing Technique

Besides, the teacher can distribute among students, concept maps in which ovals; and boxes are there, but content is missing, She/he can ask students to fill the ovals with the right concept.

Concept Map Construction for Given Concepts

Not only this, the teacher can either write certain concepts on the blackboard or can distribute paper with certain concepts written on it and ask students to prepare a concept map with the help of those concepts in their notebooks.

Conclusion and Suggestion

Nerves that lead from the eyes to the brain are many times larger than those leading from the ear, and science tells us that we give twenty-five times as much attention to eye suggestions as we do to ear suggestion. In concept mapping technique, our eyes are involved so our learning is better, while in lecture method our ears are involved so our learning is poor and achievement is little. Besides our brain works to organise knowledge in hierarchical frameworks and that learning approaches that facilitate this process significantly enhance the learning capability of all learners (Brasford, *et. al* 1999). Moreover, our brains have a remarkable capacity for acquiring and retaining visual images of people or photos; we forget the name of people but we do not forget their appearance. Perhaps this is the reason that proverbs that are passed on from generation to generation are almost all visual sayings as, 'a bird in the hand is worth two in the bush', 'it never rains but it pours', 'you can lead a house to water but you cannot make him drink'. Similarly, we find the same picture element in almost all the

'similes' that have lived for centuries and grown hoary with too much use as, 'shy as a fox', 'dead as a door nail', 'flat as a pancake', 'hard as a rock'. Perhaps, Lincoln and Shakespeare knew about this element, so the former in his speeches and the latter in his writings used visual phraseology. As in concept mapping, there is visual presentation learning is long lasting and so the achievement is high. Thus, it is a reality not a myth that concept mapping is a successful tool of teaching, learning and evaluation in primary grades.

Finally, Primary teachers can be suggested to make use of concept mapping technique for teaching because if they teach by this technique their students' learning and thereby their achievement can be better. It is because 'one cannot rely on speech alone to make himself understood or to gain and hold attention A dramatic supplement is needed. It is better to supplement whenever possible with pictures which show the right and the wrong way, diagrams are more convincing than mere words and pictures are more convincing than diagrams. The ideal presentation of a subject is one in which every sub-division is pictured and in which the words are used only to connect them. It has merely been found that in dealing with men a picture was worth more than anything.' (Carnegia, D. 2012).

Similarly, education planners may be suggested;

- to get published books based on concept mapping technique.
- to promote concept mapping technique through workshops, seminars and conferences short terms courses, orientation courses and refresher courses of U.G.C.
- to include in the curriculum of B.Ed., B.T.C., M.Ed. a chapter of concept mapping.
- to provide various grants for promoting concept mapping based researches
- to promote publication based on concept mapping.

REFERENCES

Agarwal, P. 2012. *Concept mapping and constructism as Modern Technique of teaching Biology*. Kabitanjali, Deptt. of Teacher Education. Vardhman P.G. College, Vijnor.

Anderson-Inman, L., L.A. Ditson and M.T.C. Ditson. 1998. *Computer based concept mapping: Promoting meaningful learning in science for student with disabilities*. Information technology and disabilities, 5(1-2) retrieved September 6, 2005, from http.//www.edu/ease.itd/iddv5vn12/article.htm

Asubel, D.P. 1963. The Psychology of meaningful verbal learning; an introduction to school learning, *journal of Educational Psychology*. Grune and Stratton, New York.

Berk, L.E. and A. Winster. 1995. *Scaffolding children's learning: Vygotsky and Early Childhood Education*. National Association for Education of young children. Washington.

Brasford, J., et.al. 1999. *How people learn brain, mind, experience and school*. National Academy Press. Washington.

Carnegie, D. 2012. *How to develop self confidence and influence people by public speaking*. A and A publisher New Delhi.

Edmondson, K. 2000. Assessing science understanding through concept maps, in J Mintzes, J. Wandersee and Novak (Eds.) *Assessing Science Understanding*. Academic Press, San Diego.

Mintzes, J.J. 2002. *Assessing Science understanding: A Human Constrictive View*. Academic Press, San Diego.

Novak, J.D. 2006. *The theory of underlying concept maps and how to construct and use them*. Technical Report. IHMC camp tools. www.ihmc.us

Preszler, R. 2004. *Co-operative Concept Mapping: Improving Performance In Undergraduate Biology*. Retrieved from, E-reality Home Blogsopt.com/2009/05

Shailza, H.M. 2009. Effect of Concept Mapping Strategy in Physics on Achievement and attitude of students. *Indian Educational Review*, Vol. 45, July 2009, 105-111

Vygotsky, L. 1978. *Mind in Society, the Development of High Psychological Process*. Howard University Press, Cambridge.

12

Study of Four Main Pillars of Quality Education in Mobile Learning Centres (Delhi)

Chiter Rekha*

Abstract

Mobile Learning Centres (MLCs) or Chalta Phirta School are being run by Non-Government Organisations in Delhi. This is an initiative conceived and supported by Government of National Capital Territory of Delhi and the UEE (Universalisation of Elementary Education) Mission. It focuses on children who are out of school and ensures that they receive non-formal education and subsequently attend a regular school. This study was conducted to study the four main pillars i.e. (Instructors, professional qualifications and their teaching competencies, Teaching Learning Material (TLM) & Teaching Learning Process (TLP) of quality education in Mobile Learning Centers. What extent the quality education is provided by the Mobile Learning Centres in accordance with their prescribed duties under Sarva Shiksha Abhiyan (SSA)? How far have they been successful? The sample comprised six Mobile Learning Centres, 12 Instructors and 180 children. Survey Method was adopted for the collection of data. The tools used for the study include interview schedule, observation schedule and check list. A qualitative approach was adopted to analyse and interpret the data using some quantification in form of percentage.

Introduction

Education is a process of drawing out innate powers. According to Gandhiji that true education mean the all round drawing out of the best in child and man – body, mind and soul. Quality refers to high degree of goodness, worth or excellence in an 'object' or system. Quality education helps the children to develop their skills and abilities in a way that translates becoming a productive member of society. A quality education allows and helps the children to realise their

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potential and their personal goals. Quality determines how much and how well children learn and the extent to which their education translate into the range of personal, social and developmental benefits. Quality education must ensure the child's all-round development i.e. physical, mental, social emotional and spiritual aspects of her/his potential.

The Dakar framework (2000) for action declared that access to quality education was the right of every child. It affirmed that quality was, "at the heart of education"- a fundamental determinant of enrolment, retention and achievement. UNESCO 2003 promotes access to good quality education as a human right and supports a right based approach to all educational activities and personal social development. According to the International Commission on Education, concepts of quality education revolve around four fundamental pillars of learning i.e. learning to know, learning to do, learning to live together and learning to be.

Providing quality education has always been a prominent agenda of several of committees and commissions in education. Consistent efforts have been made in the past to improve the quality of elementary education. The NPE 1986/92 had recommended a number of measures for improvement in the quality of education through reforms in content and process of classroom teaching, improvement in school facilities, provision of additional teachers, standardising levels of learning at primary stage and so on. A large number of national and state programmes were launched in this direction. The Right of Children to Free and Compulsory Education (Right to Education) Act, 2009 also focused on quality education**.** Elementary education in India received a new thrust with the National Policy on Education, 1986 as modified in 1992, which emphasis the following three aspects: (1) Universal access and enrolment, (2) Universal retention of children up to 14 years of age, and (3) A substantial improvement in the quality of education to enable all children to achieve essential level of learning.

Delhi

Delhi being one of the metropolitan cities and the capital of India has shown good progress in the field of education. The literacy rate in Delhi rose from 25.01 per cent in 1941 to 86.2 per cent in 2011.

Table 1. Progress of Literacy in Delhi

Sl. No	*Year*	*Total*	*Male (%)*	*Female (%)*
1	1941	25.01	31.99	15.25
2	1951	38.36	42.99	32.34
3	1961	52.75	60.75	42.55
4	1971	56.61	63.71	47.75
5	1981	61.54	68.40	53.07

6	1991	75.29	82.01	66.99
7	2001	81.67	87.33	74.71
8	2011	86.20	90.09	80.80

Source: Directorate of Census Operations, Delhi excluding population of 0-6 age group

Table 2. Standard Classification of School Education System in Delhi

Sl. No.	*Level*	*Class/ Classes*
1	Primary	I-V
2	Upper Primary	VI-VIII
3*	Elementary	I-VIII
4	Secondary	IX-X
5	Higher Secondary	XI-XII

*The focus of SSA is on universalisation of elementary education

Table 4. Organisations Providing Elementary Education in Delhi (as on 31-3-2014)

Sl. No	*Organisations*	*No. of Schools*
1	Delhi Cantonment Board (DCB)	08
2	Kendriya Vidyalayas	42
3	Public Schools recognised by MCD	759
4	Public Schools recognised by Directorate of Education	1187
5	Aided Schools	221
6	New Delhi Municipal Council (NDMC)	82
7	Municipal Corporation of Delhi (MCD) Schools	1750
8	Government Schools	924

Source: Directorate of Education, Delhi

Table 3.Types of Schools in Delhi (as on 30-09-2013)

Institutions	*2009-10*	*2010-11*	*2011-12*	*2012-13*	*2013-14*
Sr. Secondary Schools	1350	1392	1427	1504	1627
Secondary Schools	474	480	463	458	389
Middle Schools	583	588	600	564	728
Primary Schools	2586	2563	2581	2580	2657
Pre-primary Schools	50	50	51	49	52
Total	5043	5073	5122	5155	5453

Source: Delhi Statistical handbook 2014

The elementary education in Delhi is being provided by different organisations, Non-Government Organisations and local bodies, including Directorate of Education, Municipal Corporation of Delhi, New Delhi Municipal Council, Delhi Cantonment Board and privately managed educational societies.

Education is the fundamental right of every child and Delhi Government is determined to provide quality elementary education to all the children of Delhi. Universal enrolment and retention of children up to the age of 14 and providing quality education to the children are major goals that Delhi Government is focusing on. It

has launched various schemes to ensure that the benefits of education reach every household of Delhi.

- ***Delhi Sarva Shiksha Abhiyan Samiti* (DSSAS):** In 1993, the Department of Education, Delhi launched the 'Education For All' programme through school students and teachers. The programme was conducted under Delhi. The target was to cover about 12 lakh illiterates of Delhi in the *Sarva Shikha Abhiyan Samiti* (DSSAS) under the chairmanship of Lieutenant Governor of Delhi and Secretary (Edu.) in the age group of 6-35.
- **Universalisation of Elementary Education Mission (UEEM-2002):** *Sarva Shiksha Abhiyan* (SSA) was started in Delhi in the year 2003 i.e. two years after its launching in 2001 in other states. A society was formed and got registered in the name of "Universalisation of Elementary Education Mission" (UEEM 2002) under the Department of Education, NCT of Delhi for implementation of SSA programme. UEE Mission in Delhi envisages two kinds of integration of the formal school systems (MCD, NDMC, and DCB) as well as of the formal and alternative education system. The SSA in Delhi is being implemented in partnership with Directorate of Education of the Government of National Capital Territory (GNCT) of Delhi, Municipal Corporation Delhi (MCD), New Delhi Municipal Council (NDMC), Delhi Cantonment Board, State Council for Educational Research and Training (SCERT), nine District Institutes of Education and Training (DIET), Community, NGOs
- ***Sarva Shiksha Abhiyan* (SSA): *Sarva Shiksha Abhiyan* includes:**
  1. National Programme for Education of Girls at Elementary Level (NPEGEL) and
  2. District Primary Education Programme (DPEP)
  3. National Program of Nutritional Support to Primary Education (NP-NSPE) commonly known as the Mid-Day Meal Scheme.
  4. Teacher Education
  5. *Kasturba Gandhi Balika Vidyalaya* (KGBV)
  6. *Mahila Samakhya*
  7. Education Guarantee Scheme and Innovative Education (EGS and AIE)
- **Teaching through CALTOONZ**: UEE Mission has developed the course material for upper primary classes to help the learners in overcoming their weaknesses by learning through CALTOONZ, a programme based on computer animation. The aim of the programme is to check the dropout rate of children by making the learning process more interesting and attractive in the Government schools.
- **YUVA**: An Innovative Programme: UEE Mission has launched a new

innovative programme for making learning a joyful experience. The aim is to take life skill education and other related issues to the classrooms.

- **BaLA:** Every child needs a harmonious environment for personality development. However, the buildings of the schools of the Delhi Government are neither child-centric nor child-friendly. Realising this, it has been decided by Education Department that all the school buildings will be suitably developed with architectural designs in such a way that building itself acts as a learning aid.
- **Enrolment Drive** (*Dakhila Abhiyan*): The concept of *Dakhila Abhiyan* took shape in the year 2001. Delhi Government in its initiative passed an order that no school would insist on showing a birth certificate or an affidavit for admission up to Class V.
- **Automatic Admission from Class V to VI (Twinning of Schools):** To save the students drop-out at Class V stage, a system (Twinning of Schools) has been evolved in which every primary school is attached to one Directorate of Education school and the admission of students from primary school to the Directorate of Education school is Automatic. (Note: all the primary schools do not come under the Directorate of Education school. Primary schools come under the MCD, NDMC, DCB and Directorate of Education in Delhi).
- **Online Student Management System, including Online Admission**: The online student management system has been developed to administer all the work processes related to the students right from registration for admission in Delhi Government schools till the student leaves the school by obtaining School Leaving Certificate . Tracking each and every child to check dropout at any stage and maximise efforts to ensure retention in the educational system, including schools and/ or learning centres run by NGOs under *Sarva Shiksha Abhiyan* (SSA).
- **Mid Day Meal Programme**: It aims at giving a boost to universalisation of primary education by increasing enrolment, retention and attendance and simultaneously improving the nutritional status of students in primary schools.
- **No Retention Policy:** In order to achieve the target of UEE and bring the dropout rate down to zero, Government has launched the policy of "No Retention" till Class VIII from the year 2009.
- **Education Guarantee Scheme and Alternative Innovative Education Centres (Delhi):** *Sarva Shiksha Abhiyan* provides support to out-of-school children in the forum of Education Guarantee Scheme (EGS) and many other strategies under Alternative and Innovative Education (AIE) Programme.

The restructured Non-Formal Education scheme called EGS and AIE. .

- **Alternative Innovative Education (AIE) Centres**: Alternative Schools are an alternative approach for the education of out-of-school children under the Education Guarantee Scheme.

  (a) Learning Centres (2002-03): The UEE Mission involved NGOs on annual contract basis to run learning centres (LCs) which were established as an alternative approach.

  (b) *Khulja Sim Sim Project (2008-09)*: In order to provide education to Out-of-school children and adult learners through an interactive, interesting and enjoyable manner, the department has initiated an innovative project to establish ICT based learning stations on the boundary wall of the Govt. schools all over Delhi.

  (c) Chalta Firta Schools / Mobile Schools (2008): The two Chalta-Firta Schools / Mobile Learning Centres (MLCs) are being run by the organisations namely Butterflies and *Salaam Baalak Trust*.

  (d) Residential Bridge Course Centres (2006)-The Government of Delhi has launched a campaign for the education of all children and adolescents who live and work on the streets under SSA. The Department has operationalised three Residential Bridge Course Centres (RBCCs) for street and working children, with the involvement of '*Samya* Centre for Equity Studies'-an NGO.

  (E)* Kasturba Gandhi Balika Vidyalaya (KGBV*): In view of the low female literacy rate, in the Mustafabad area of North East Delhi, MHRD Government of India has directed the Department of Education to set up one Hostel-cum-School under the *Kasturba Gandhi Balika Vidyalaya* Scheme of *Sarva Shiksha Abhiyan*.

  (g) Early Childhood Care Education (ECCE): In order to provide quality pre-primary education, 300 Model Early Childhood Care and Education Centres have been operationlaised in various schools.

The National Capital Territory of Delhi, in spite of being one of the main metropolitan cities, is not in a position to enroll all children of the age group 6-14 and 11-14. The goal of achieving universalisation of elementary education is therefore still a distant dream to achieve.

Save the children, in collaboration with the Institute for Human Development, conducted a census of street children in all nine districts of Delhi in 2010, to find out how many children are living and working on the

streets in the city and to gain a deeper insight into their lives. The study identified 50,923 children below 18 years of age as street children in Delhi from 12 July to 28 August 2010. Street children in Delhi constitute nearly 0.4 per cent of the total population. Street children below 18 years constitute nearly one per cent of the total number of children in Delhi. North Delhi district had the highest concentration of street children at 10,091 and South West Delhi the least at 2936 children. Only 20.5 per cent of the street children in Delhi were girls.

Table 5. Street Children in Delhi 2010

District	*Male*	*Female*	*Total*
Central Delhi	4770	1092	5862
East Delhi	5966	1359	7325
New Delhi	4512	1117	5629
North Delhi	8031	2060	10091
North East Delhi	4167	1249	5416
North West Delhi	2814	767	3581
South Delhi	3382	932	4314
South West Delhi	2427	509	2936
West Delhi	4392	1377	5769
Total	40,461	10,462	50,923

According to the Project Approval Board Meeting (held on May 2011), 25,536 children are out of school in Delhi. All these out-of-school children shall be covered during the year 2011-12.

Table 6. District-wise Out-of-School Children (2011-12)

District	*No. of Out-of-School Children (OoSC)*
East Delhi	2380
North East	3860
North	960
North West	3200
West	3665
South West	2520
South	5751
New Delhi	160
Central Delhi	1140
Total	23,536

The main goal of Education Guarantee Scheme is to achieve Universalisation of Elementary Education in Delhi. It implies that all children in the age group 6 to below 14 year get enrolled in a regular school or an alternative school system and they do not dropout from school before completing the full cycle of elementary education established under Education Guarantee Scheme. In order to take the education to more children living in difficult circumstances such as at Traffic Signals, Construction Sites, Red Light Areas etc in Delhi, the two *Chalta-Firta* Schools /mobile learning centres were being run by the Non Government Organisations (NGOs).

Objectives of the Study

The present study was attempted to find out the Quality of Mobile Leaning Centres working under EGS for UEE for the age group of 6-14 years in Delhi. The main objectives of the study were to study the four main pillars of quality education in Mobile Learning Centres:

- Instructors' qualifications and their teaching competencies.
- Basic facilities available at MLCs.
- Teaching Learning Process and Teaching Learning Methodology (MLCs).
- What extent the activities undertaken by Mobile Learning Centres in accordance with their prescribed duties under *Sarva Shiksha Abhiyan* and Right to Education Act.

Sample for the Study

Only six MLCs were selected randomly. Instructor is a person who teaches the children in MLCs. Twelve instructors and 180 children who were studying in MLCs were chosen for the interview. Survey Method was adopted for the collection of data. The data for the present study were collected with the help of interview schedule, observation schedule & check list.

Table 7. Tools & Sample

S. No.	*Tools*	*Sample*
1	Interview Schedule	Children (180)
2	Interview Schedule	Instructors (12)
3	Observation Schedule	Mobile Learning Centres (6)
4	Checklist	Mobile Learning Centres (6)

For the analysis of the data simple statistical techniques percentage was used. On the basis of data analysis and interpretation, the following main findings have emerged out of the present investigation

Instructors' Professional Qualifications and Competencies

SSA visualises instructors as a capable facilitator who motivates the child to construct her/his own knowledge. The instructors should be aware of the progressive pedagogy and willing to understand the child's world. She/He must know the nature and experience of children from various social and cultural backgrounds. She/He should appreciate the pedagogical value involved in the process of 'knowing the children & childhood' and instructors should be sensitive towards community knowledge / resources. The most important category of this study was instructors.

Table 8. Instructors by Professional Qualifications and Teaching Competencies

Professional Qualifications and Competencies of Instructors	**N=12**
Educational qualification (Sr. Secondary pass outs)	**12 (100%)**

Professional qualification / experience	2 (16%)
Conceptual: Clarity & deep understanding of educational theories.	-
Content : Full mastery over the content of the subject	8 (66%)
Curriculum: Complete entire curriculum within specified time	12 (100%)
Transactional: Meaningful interaction between teachers and pupils, pupils and pupils, pupils and the learning materials and pupils and the environment	12 (100%)
Educational: Systematic planning and effective implementation of curricular and co-curricular activities	10 (83%)
To develop teaching-learning material : Ability to develop interesting teaching aids for making teaching learning process easy	6 (50%)
Evaluation : continuous and comprehensive evaluation	6 (50%)
Management : to achieve high quality educational objectives in minimum time, energy and money	5 (42%)
Related to working with parents: Hold regular meetings with parents and guardians and apprise them regularity in attendance, ability to learn, progress made in learning and any other relevant information about the child	12 (100%)
Related to working with community	12 (100%)

Above table clearly indicates the professional qualifications and competencies of the instructors of the MLCs. From the table it is understood that all the instructors of MLCs were only Sr. Secondary pass outs and 84 per cent of them had no professional qualification and had less than one year teaching experience. At the time of selection, the directors of the NGOs are not keeping in mind the qualifications of instructors which were required under the Section 23 of the RTE Act 2009 (any person processing such minimum qualifications as laid down by an academic authority, authorised by the Central Government, by notification, shall be eligible for appointment as a teacher).

Only 50 per cent instructors have the ability of developing interesting teaching-learning aids for making teaching-learning effective and 66 per cent instructors have full mastery over the content of the subject. Only 42 per cent instructors are using the better management skills. The relationship & interaction among the instructors and pupils, pupils and pupils, pupils the learning materials and pupils the environment were cordial. All instructors tried to establish good relationship with parents to convince them about the importance of the education in the lives of their children and apprised them regularity in attendance, ability to learn, progress made in learning and any other relevant information about the child.

Instructors visit the community. They called eminent personalities on various occasions for motivating the children of MLCs. Parent-teacher meetings were also conducted in the entire MLCs.

Basic Facilities at Mobile Learning Centres

Table 9. Responses about the Facilities at MLCs

Facilities	*Instructors (12)*	*Children (180)*	*Observation Result MLCs (6)*
Stationery, teaching aids / learning aids /computers	12 (100%)	180 (100%)	6 (100%)
Library and their use	12 (100%)	180 (100%)	6(100%)
Laboratory	X	X	X
Daris	12 (100%)	180 (100%)	6 (100%)
Toilet facility	X	X	X
Drinking water facility	12 (100%)	75 (42%)	3 (50%)
Hygiene	12 (100%)	122 (67%)	4 (67%)
Adequate instructional material, textbooks	8 (66%)	145 (80%)	4 (67%)
Chairs, benches	X	X	X
Proper light in the class room/sun light	9 (67%)	89 (49%)	4 (67%)
Adequate space in the classroom/bus	X	X	X
Play material (Indoor Games)	X	X	X
Uniform	X	X	X
Medical facility (First Aid Box)	2 (16%)	X	X
Facilities for children with special needs	X	X	X
Supportive, peaceful and safe environment	12 (100%)	129 (71%)	6 (100%)
Effective and constructive discipline and reinforcement of positive behaviour	12 (100%)	180 (100%)	6 (100%)

All the instructors and children of MLCs said that all these facilities which are given in Table 9 are provided at all the MLCs whereas (no toilet for the students, not adequate play material, not adequate space, not adequate drinking water, uniforms, not adequate instructional material, textbooks, proper first aid box & chairs) are those facilities which are not provided by any MLCs. MLCs fulfill the requirement of the SSA partially since one of the major objectives of SSA is to provide basic facilities to children such as drinking water, toilets for students, learning equipments, etc. MLCs have no separate classroom for the different classes of children and no proper space for group activities as they were facing the space problem. All the MLCs run in a mobile bus. Not even MLCs have chairs and students have to sit on the *daris*. There is no special arrangement for Children with Special Needs (CWSN).

There is no discrepancy between the data provided by instructors of MLCs and children of MLCs and researcher's observation .Thus it can be said that following facilities such as textbooks, uniform, play material, more space, proper light, adequate drinking water, special arrangement for CWSN, toilets for students, chairs for the children and medical facilities, proper first aid box are the facilities which need improvement at these centres.

Teaching Learning Process (TLP) and Teaching Learning Methodology (TLP) used at MLCs

Table 10. Observation Results with respect to TLP ,TLM & Tools

S.No	*Teaching Learning Process and Teaching Learning Methodology*	*MLCs (6)*
1	Instructors develop their own teaching plans	3 (50%)
2	Books are used for teaching (Formal school books)	6 (100%)
3	Curriculum development	-
4	They use effective technology and audio-video aids and other teaching aids while teaching	2 (33%)
5	Methodology of teaching are used by the instructors (child centred)	2 (33%)
6	The teacher works as a facilitator in the multi-level-teaching –learning process	4 (66%)
7	Continuous and comprehensive evaluation of learner done by the instructors	4 (66%)
8	Proper monitoring and supervision	5 (83%)
9	Remedial teaching /bridge courses	6 (100%)
10	Instructor and child relationship (cordial)	6 (100%)

11	Punishment is used for classroom management	1 (17%)
12	Medium of instruction (mother tongue)	6 (100%)
13	Development of the physical and mental abilities to the fullest extent through activities, discovery, etc	4 (66%)
14	– Classroom organisation	-
	– Well planned seating arrangement	2 (33%)
	– Display of material in the classroom (Bus)	5 (83%)
	– Grouping of children	-
	– Homogeneous	5 (83%)
	– Heterogeneous	1 (17%)

It was found by the researcher that all the MLCs used formal school books and 50 per cent instructors of the MLCs have developed their own teaching plans before teaching in the classroom to make the teaching learning effective. Only 33 per cent MLCs instructors were using effective technology and audio-video aids and other teaching aids (such as models, charts, maps, specimens, etc) while teaching. In 67 per cent of the classes of MLCs, the concepts were being taught by the instructors by traditional method of teaching (by books) whereas 33 per cent instructors of MLCs used child-centred approach during Teaching Learning Process and involved the students in Teaching Learning Process (TLP). According to the NPE 1986, a child-centred and activity based process of learning should be adopted at the primary stage. It was seen that most of the MLCs were not using the child-centred approach. 66 per cent instructors of MLCs work as a facilitator in the multi-level-teaching-learning process and the relationship between instructors and students were found cordial. It was seen that 17 per cent MLCs instructors used punishment for classroom management. It shows that almost 83 per cent MLCs were following the RTE Act, 2009 (the act bans physical and mental harassment and recommends the child-centred approach. 33 per cent MLCs have well planned sitting arrangement. It was found that 83 per cent MLCs displayed the material in the classroom and taught the homogeneous group of children during TLP. 83 per cent Instructors of MLCs reported that they maintain all the records and all the records supervised by the supervisors. Researcher herself found that progress report and record of support services like uniforms; midday meals etc were being maintained by nearly 50 per cent of the MLCs whereas follow-up record of mainstreamed children was not being maintained by any MLC. None of the MLCs are developing

their own curriculum and textbooks according to the NCF-2005. Only 66 per cent instructors are using CCE for the evaluation of the children. There is discrepancy between the instructors' responses and researchers observations.

Activities under taken by MLCs in accordance with their prescribed duties under SSA & RTE

Table 11. Activities undertaken by the Mobile Learning Centres

SSA Norms	*MLCs (6)*
All the EGS & AIE provide free education to 6-14 age-group of children	6 (100%)
Provision for the education of children with special needs	6 (100%)
Bridge the gender and social gap	6 (100%)
EGS & AIE centre function for at least four hours during the day time	6 (100%)
Regularity and punctuality of the centres and instructors	6 (100%)
Preference were given to women in selection of EVs/ instructors	4 (67%)
Teacher qualification laid down by the NCTE under Section 23 of the RTE Act	-
30 days' induction training of EVs for primary level centres and 40 days for upper primary centres were completed prior to the starting to the centre	2 (33%)
If the Number of children exceed 40, additional EVs can be provided at the centres. Pupil : Teacher ratio should be 40:1	6 (100%)
The involvement of the Community operationalised through parents' group SC/PTA's/MTA's	3 (50%)
Door-to-door survey of OoSC done	6 (100%)
For age appropriate admission of OoSC, and continued support to enable them to cope with regular school	
Bridge courses	4 (67%)
Remedial teaching	6 (100%)
Residential camps	-
Curriculum development, particularly of bridge courses	-
Mainstreaming of children in to formal schools.	6 (100%)
Close monitoring of the learner admitted in the MLCs in regard to their regular attendance, dropout, child profile, promotion to next class.	4 (67%)
HMs were involved in regular supervision of MLCs from which children are likely to be mainstreamed	4 (67%)
Regular evaluation of the functioning of MLCs	4 (67%)

Out of these 15 norms prescribed by SSA, following are being observed in all MLCs:

- All the MLCs were providing education to 6-14 age-groups of children. All the students of Class I-V studied in a mobile bus.
- SSA prescribed definite hours (minimum) for MLCs is 4 hours/ day. All the MLCs are working according to the prescribed norms of SSA.
- All the MLCs have a provision for the education of children with special needs but they do not have adequate resources for CWSN. They are trying to bridge the gender and social gap.
- According to the norm of SSA /RTE, 50 per cent women instructors should be recruited under SSA. 67 per cent MLCs have female instructors.
- As per the norm under SSA, teacher : pupil ratio in a class should be 1:40. All the functionaries reported that the teacher : pupil ratio at their MLCs was 1:40 which was as per norms under SSA.
- The RTE Act stipulates age appropriate admission for out-of-school and dropout children. The RTE Act also provides that such children shall be entitled to free and compulsory education even after attaining the age of 14 years till they complete elementary education. All the MLCs were providing remedial education and bridge courses to slow learners or children who had been absent for a considerable period of time.
- All the MLCs are conducting household surveys for locating Out-of-School-Children as well as dropout children which was in line with SSA and helping in mainstreaming the children in formal schools like MCD, NDMC and Sarvodaya Vidyalayas, etc.
- Close monitoring of the learner admitted in the MLCs in regard to their regular attendance, dropout, child profile, and promotion to next class was conducted in 67 per cent MLCs.

However the norms which are not being followed by all the sample MLCs are:

- With reference to the teacher qualifications laid down by the NCTE under Section 23 of the RTE Act, out of 12 instructors of MLCs, only 16 per cent have required qualifications. Instructors qualifications laid down by the NCTE under Section 23 of the RTE Act are not being fulfilled.
- Only 33 per cent MLCs instructors got the induction training of 30 days.
- Only 50 per cent MLCs received the support provided by the community like suitable space, drinking water facilities etc. and trying to involve the community through parents' group PTM/ SC, etc.

- None of the MLCs are developing their own curriculum and textbooks according to the NCF 2005.
- None of the MLCs are developing curriculum for bridge courses.
- None of the MLCs have adequate resources for children with special needs.

Some of the advantages of the MLCs established under SSA as evident from the study were:

- MLCs are providing education to those children who are not in a position to reach out to formal schools like children of parents working at construction sites or railway stations, children of sex workers, Out-of-School-Children, migrated children/off the state children, street children, orphan children or children of dysfunctional families, etc. 75% MLC are working in slums and unauthorised areas whereas 25 per cent of MLCs are providing education in rehabilitation colonies. All the MLCs are providing education to the 6-14 age groups of children. Almost all the MLCs are open for 5 days in a week and work for 2 hours/ day (at each habitation). 35-45 children enrolled at one centre at present. Teacher : pupil ratio is 1:40. Instructors make special efforts to encourage and enroll students. There is no doubt that MLCs are the best alternative system of providing education.
- There is less rigidity in terms of age of the child to seek admission, timings of classes, date of admission, attendance, and leave rules, etc. unlike in the formal schools. It was observed in the study that though the class timings of MLCs are flexible, this cannot happen either in government schools or in private schools. Most of these children work either in their homes or in someone else's house/shops.
- Those children who have been out of school or dropped out from schools get a chance to study in MLCs. The parents, who are mainly labourers, feel that instead of the child loitering around here and there it is better that she/he stays in the MLCs and learn something in the process.
- Children after studying for a few years in the MLCs can be admitted to a formal school, thus achieving one of the purposes of opening SSA i.e. of preparing the child to enter formal school. This is in consonance with an important objective of SSA that- all children in such schools should be 'back to school' by a prescribed time. In this sense, these MLCs work as preparatory mechanisms to groom a child to enter the formal school.
- Some of the MLCs are providing vocational training to their children and trying to develop various skills.

Recommendations

- Instructors' qualifications as laid down by the National Council of Teacher Education (NCTE) under section 23 of the Right To Education

(RTE) Act, 2009 should be followed in future recruitments (Instructors must have the diploma or degree of Teacher Training Institution).

- Drinking water, toilets for students, chairs, adequate space, health check-up facility (proper first aid box), textbooks and special arrangement must be made mandatory by all MLCs.
- Around 65 per cent of the surveyed MLCs have 35-45 students enrolled at the centre, at different grades or levels. Many of the enrolled students are first generation learners or out-of-school-children with no support at their homes. It is important to understand that this target group needs special efforts in the early formative years, for which instructors need to be provided special orientation not only to provide bridge courses but also remedial classes to make schooling feasible for the overage new entrants and to curb dropouts.
- An orderly atmosphere and an attractive working environment will make children happy and comfortable. Therefore, adequate space and better infrastructure must be provided.
- Separate MLCs for boys and girls have to be established so that orthodox parents send their girls to MLCs as they are not interested in sending their daughters to co-education school and MLCs.
- An individual educational plan should be prepared for child with special needs in consultation with parents and experts. Its implementation should be monitored from time to time.
- In MLCs where there are children of different age-groups and of different abilities (EGS & AIE) generally with a single teacher and a likelihood of 3-4 groups of learners, supply of adequate and appropriate need based TLM becomes a major concern. It becomes important that children should have a variety of TLMs that are relevant to their age and ability so that they are actively engaged in the teaching-learning process.
- The SSA Framework states "children should be encouraged to think and observe independently and the classroom should be the forum for interaction". The ground reality, however, seen in most of the MLCs is different than that advocated in SSA. Instructors generally use the traditional '**chalk, talk, and text**' method. Therefore, the instructors should use child-centred activity based approach.
- The vision of SSA is to enable each child to understand skill & dignity involved in manual work. Work education and art & craft education will enable children to consolidate their experiences through manual work and realize its significance. So, work education and art & craft education should be provided to the learners.

In short, we can say that SSA will encourage participation of NGOs by way of participatory need assessment, implementation and monitoring. In addition, these agencies are expected to play a proactive role in advocacy for children' rights with emphasis on the Right to Education.

REFERENCES

NCERT. 2000. *Mainstreaming of out-of-school children*: M V Foundation Experience Comparison of SSA vis a vis RTE Norms SI interventions www.ssa.nic .in / quality-docs/ appendix% 20% annex

Dave, PN. 1981. *out of school children in south Asia*, NCERT

Delhi Government: 2014. *Delhi Statistical Handbook*. no 39

District Elementary Education Plan UEE Mission: Annual Work plan and budget (2006-07), District South NCT of Delhi.

Draft. 2010. *Sarva Shiksha Abhiyan Framework of implementation* www.ssa.nic/ framework-docs/ Draft 1

Eleventh Five-Year plan. 2007-12. New Delhi. Planning Commission. GOI.

Government of India. 1997-2002. Planning Commission Government of India

Government of NCT UEEM Delhi. 2009. An introduction and progress made so far www. edudel. nic.in /ssa / Brouchure—SSA

Kumar Naresh. 2008. Assessing the social parameters of elementary education, Jammu city, *Journal of the Council for Social Development*, Vol. 38 No. 2, June 2008

Malgavkar, P.D. 1995. *Elementary Education-International Perspective and Rational: universalization of primary education*, Konark Publishers Pvt Ltd ,New Delhi

Mehta, A. C. 2005-06. *Elementary education in India- where do we stand? District Report Cards*, New Delhi NUEPA

— A.C. 2004. *Elementary education in India–where do we stand? District Report Cards* (vol-1). New Delhi NEUPA

Memoire Aide. 2010. SSA twelfth Joint Review Mission www.ssa.nic.in/ ... final%20 AIDE% 20 MEMOIRE % 20 of % 2012

MHRD, Government of India. 1999. Sarva Shiksha Abhiyan: frame for implementation, Department of Elementary Education and Literacy, New Delhi

— 2004-05. Selected Educational Statistics, Planning, Monitoring and statistics Division, Department of Secondary and Higher Education, New Delhi

— 2005. *Sarva Shiksha Abhiyan: a programme for universal elementary education*. Department of elementary education and Literacy, New Delhi

— 2007. *Effective classroom process: A Resource book.* IGNOU (DEP-SSA)

Minute of the PAB meeting to consider the Annual work Plan & Budget SSA Delhi (2010-11) www. ssa.nic.in / pab/pab minutes -Delhi

Mohanty, Sunil Behari. 2005. Elementary Education for All in India, *Journal of All India Association for Educational Research.* Vol 17, No. 3 & 4 (Sep &Dec)

NCERT, 2007. EDUDOC Services: News clip Series.

— 2006. *Modules on Quality Dimensions of Elementary Education,* Under SSA,

— 2007. *The Reflective Teacher-Organization of In–service Training of the teachers of Elementary School* under SSA

— Annual Report 2003-04.

— Annual Report 2005-06.

— Annual report 2006-07 Department of Elementary Education.

— 1999. *National Curriculum Framework for School Education– A Discussion Document. NCERT*

— 2005. *National Curriculum Framework*

Panchamukhi, P.R. 2002-03. *Bulletin of educational data bank: elementary education* (vol-1), Centre for multi disciplinary Development Research, Dharwal

Patel, R.C. and Awasthi, Ms. Kashyapi. 2007. Perception of community members of different communities regarding SSA and its implementation, *Journal of Teacher Education and Research.* Vol-2, December 2007

Sarva Shiksha Abhiyan: Perspective plan (2005-10) Delhi State, UEE Mission Delhi

SCERT. 2007. Status of Education and major achievements in Delhi : A Quick Report

Sharma, Dr R D. 1998. *UEE Research Trends and Educational Implication,* NCERT

Government of India. 2002-07.Tenth Five Year Plan Planning Commission, New Delhi

— 2009. *The Right of children to Free and Compulsory Education Act.* www.en. Wikipedia org/../The_ Right_ of_ children_ to _free _and _compulsory_ education_ act.

Tyagi, R.S, Aggrwal .I.P. 2000. Educational Administration in Delhi, Structures, process and future prospects, NEUPA

UNESCO. 2002. Right to Education: Scope and Implementation. Economic and Social Council. UNESCO Publication.

Vimla Ramachandran (ed). 2003. Gender and Social Equity in Elementary Education Hierarchies of Access, Sage Publication, New Delhi

Xiaohua Liu. 2002. International Community Foundation–"Overview of Educational Needs & Philanthropic Opportunities in China

Yadav Shalini. 2006. A Study of NGO participation in SSA with respect to Enrolment, Retention and Achievement stage in the NCT of Delhi.

Yuva School Life Skill Programme. 2009. *hand book for teachers and Department of Education & SCERT,* Delhi vol-1

WEBSITES

www.nce.org.in
www.delhi.gov.in
www.educational.nic.in
www.edudel.nic.in
www.ssa.nic
www.planningcommission.nic.in
www.unesdoc.unesco
www, eduationforall.in India. com

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Elementary Education in Arunachal Pradesh

Vandana Mishra*
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Arunachal Pradesh

The importance of books in the process of socialisation is unquestionable. The key to reading is literacy, and this is endorsed in the document Padhe Bharat Badhe Bharat, launched by the Government of India, on 26th August 2014. The document endorses reading as a key strategy for realization of academic goods, and recommends that all states and union territories should provide graded reading series and children's literature for children to browse in classrooms, particularly for Classes I and II.

India being a multicultural and multilingual country, it is of utmost importance for children to learn about other people, different customs and parallel cultures. This is possible only through education, in the widest sense of the word. It includes poems, narratives and an awareness of numbers in the mother tongue, moving on to other languages and new concepts in school education and higher stages of learning. The roots of India's literacy tradition can be traced to the rich oral literatures of the tribes. The folk tales are expressions of the close contact between the world of nature and the world of human existence.

The survey of Indian languages carried out by Bhasha Research and Publication Centre shows that the country in the early '60s had 1,100 languages out of which 220 have disappeared by now. In other words, India has lost around 20 per cent of its languages in the past five decades. This just shows how much indigenous languages have suffered because of urbanization. The present situation for some indigenous languages in the northeast indicates that all is not well.

Arunachal Pradesh is unique in that it has a large number of tribes, both

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major and minor, with an equally large number of languages and dialects. The languages of the tribes of Arunachal Pradesh come from different language families. Furthermore, these languages are extremely diverse in terms of morphology, phonology and syntax. In terms of the number of speakers of the language, each of them could be treated as a linguistic minority. In the context of the recommendations of Padhe Bharat Badhe Bharat, a new graded reading series was planned for children of Classes I and II. Due to its multilingual landscape, the series was planned in English.

The project reflects collaboration of both State and Centre levels. A five-day workshop was organised from 17-21 November 2014, by the *Sarva Shiksha Abhiyan* (SSA) Arunachal Pradesh, at Naharlagun, for the development of the series. The role of the National Council of Education Research and Training (NCERT), was to provide critical academic support for the initiative. This involved creating an awareness of the importance of familiarizing children with tribal identity and culture, followed by sessions on the parameters of selection for children's literature. Representatives from the major tribes of Arunachal Pradesh were invited by SSA for this purpose. Each of them was asked to write at least three stories suitable for young children prior to the workshop, and bring them along for discussion. Representatives from thirteen major tribes finally made it to the workshop. By the end of the workshop, thirty stories were finalised.

The new series when distributed in government schools in Arunachal Pradesh will be read by children from tribal as well as non- tribal families. *Orchids* has thirty folktales in all, spread over three levels. The number of sentences and the complexity of the plots in the stories increase as one moves upwards across the levels. The tribes, from which these tales were chosen, are thirteen: Nyishi, Adi, Longchang, Khampti, Sherdukhpen, Nokte, Singpo, Galo, Apatami, Mishmi, Nuepa, Sajolang, Miji and Tagin. The tales were chosen after much discussion.

The series is the first of its kind in India, as children in government schools in Arunachal Pradesh will have access to the folk tales of thirteen different tribes of their state. SSA Itanagar, Arunachal Pradesh has been granted funds from MHRD for the printing of Orchids, and it is expected that it will be disseminated later this year. In a way, the series would provide a counter-balance to modern education which is deficient in many ways; it is the oral tradition which fills the gap by inculcating universal and human values. The preservation of tribal identity, culture and values remains a point of concern in today's world, and the series hopes to address this issue and in its own small way.

Some Interesting Facts About the English Language

Vandana Mishra*

English is a West Germanic Language that was first spoken in early medieval England and is now a global language. It is an official language of many sovereign states. It is the third most common native language in the world. It is widely learned as a second language and is an official language of the United Nations, of the European Union, and of many other world and regional international organisations. English has been playing a major role in many sectors. In today's global world, the importance of English cannot be denied or ignored since English is the most common language spoken all around the world.

Here are some interesting facts about English language –

- A sentence that contains all 26 letters of the alphabet is called a pangram.
- A palindrome is a word, phrase, number, or other sentence of characters which reads the same backward or forward. Allowances may be made for adjustments to capital letters, punctuation, and word dividers. For example- Malayalam, Nitin.
- There is no word in the English language that rhymes with month, orange, silver, purple, angel and bulb.
- Only two English words in current use end in "-gry". They are "angry" and "hungry".
- If you were to write out every number name in full (*one, two, three, four...*), you wouldn't use a single letter B until you reached one billion.
- Letters 'a', 'b', 'c' & 'd' do not appear anywhere in the spellings of 1 to 99

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(Letter 'd' comes for the first time in Hundred)

- Letters 'a', ' b' & 'c' do not appear anywhere in the spellings of 1 to 999 (Letter 'a' comes for the first time in Thousand)
- Letter 'c' does not appear anywhere in the spellings of entire English Counting.
- The longest English word with its letters in reverse alphabetical order is *spoonfeed*.
- Here is a very simple sentence which uses every letter of the alphabet:
- 'The quick brown fox jumps over a lazy dog '!
- Challenge your friends! Ask them to find rhyming words for any of these five words - Orange, Month, Silver, Angel & Bulb ! You will be surprised to try that these five words don't have any rhyming word!
- Do you there are few words in English language, which only exist in plural form? Here are few –glasses, scissors, trousers, jeans, pants etc.
- Here is a strange fact about September. The word 'September' originates from Latin word for 'seven' i.e. septem. Then why it is ninth month? September used to be seventh month in original Roman calendar, new year started in April in this calendar thus making September as seventh month. But another Roman emperor, Julius Caesar shifted the start of new Year back two months. It resulted in September being ninth month!
- Same is true about October & November. These words originated from Latin words octo & novem, meaning eight & nine, since these were the eighth & ninth months in old Roman calendar.
- Posing a question and then immediately answering it yourself is called sermocination.
- The longest English word without a vowel is – rhythm!
- There are only four words in the English language which end in "dous": tremendous, horrendous, stupendous, and hazardous!
- "I am." is the shortest complete sentence in the English language!
- The dot over the i or j is called a tittle.
- There are fourteen punctuation marks in English grammar: Period, comma, colon, semicolon, dash, hyphen, apostrophe, question mark, exclamation point, quotation marks, brackets, parenthesis, braces, and ellipses.
- We pronounce the combination "ough" in 9 different ways. The following sentence contains them all: "A rough-coated, dough-faced, thoughtful ploughman strode through the streets of Scarborough; after falling into a slough, he coughed and hiccoughed."

Internet Sources

www.wikipedia.org
www.englishclub.com
www.bloomsbury-international.com
www.grammarly.com
www.oxforddictionaries.com

My Page

Sonika Kaushik*

The rapid proliferation of play schools for the pre-primary years is a fairly recent phenomenon. It is the first step towards a formal system of education. The following description has been gleaned from observations made during a four-day visit to a play school in Delhi.

The play school was a part of a reputed chain of schools. The play school had three play groups and a section each of nursery and kindergarten. Each play group had 20-25 children, two teachers and an attendant. Even though the stay at the school was fairly short, it revealed a range of significant aspects of the curriculum and the classroom environment. I have discussed each of the themes as given below:

The classroom environment

For young children, making one of their earliest and independent forays into the school system, it was a warm and welcoming environment. The room for each group was vibrant and an inviting space. However, despite the smart effort of using wall length mirrors to lend the rooms a feel of spaciousness, the available space did not seem to do justice to the activities organized in the class. The furniture for children was suitable for their physical stature and had interesting characters made on them. For instance,One of the pre-nursery groups had the character of Noddy painted on benches. I did not see chairs for teachers in any of the groups I observed.

The display boards in each of the observed groups were done up in an interesting manner. The themes for the boards seemed apt for the group, but the variety of themes could have been bewildering for the kids. For instance, the board in the pre-nursery group, under the broad title of 'creativity' displayed print and illustrations on the following themes: colours, numbers, things, weather and Janamashtami. Also, during those four days, I did not come by any children's work on display in any form.

The teachers were kind and affectionate in their dealings with children, though with a tendency to be louder than required. Even though the children seemed comfortable in approaching their teachers, the interaction, largely, flowed one-way, from teachers to children. The teachers seemed familiar with each child's needs and tendencies and acted promptly if a situation arose. Mostly, children were addressed as 'babies'. This conveys the assumptions the school/teachers have about children.

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The nature of curricular activities

The plan for each day was clearly chalked out. It was written on the board at the start of the day and guided the teachers as the day progressed. A day's plan for a play group was written as follows –

1. welcome
2. assembly
3. rhyme time
4. matching the cards
5. lunch
6. physical activities
   i. jumping
   ii. crawling like an ant
   iii. hop like a rabbit/frog
   iv. twist
   v. free dance

This was clearly not meant for children and not shared with them. The classroom was always well-equipped with the material required on a particular day and if needed there was sharing between groups. The coordination between the two teachers was good and they took over from each other whenever required.

The school at the time of observation had a festive mood and was gearing up for Diwali celebrations. Each group had some activity which carried the spirit of the festival. The pre-nursery groups, for instance, decorated diyas with assistance from teachers. The groups were also rehearsing for role-play on the Ramayana. Other activities planned for conceptual learning focused on recognition of numerals, matching print with associated graphic out of a set of four cards, recognizing a fruit depicted on a card and naming it in chorus, working on puzzles, identification of colours. Most of these activities were organized on a one-on-one basis and did not leave room for interaction between children. The group was kept engaged in one activity by a teacher, most of the time choral singing of rhymes while the other teacher drew out one child to do the activity on a concept with one child.

The description shared above is of a particular play school and does not represent the diversity of systems for the pre-primary years.

To the Contributors

The Primary Teacher invites you to write articles, field notes and reports that impact elementary education. The focus may be on issues and concerns that you are sensitive to, which you feel should be shared with other teachers working at the grassroots levels.

- Each article should be about 1500 to 3000 words.
- Each article should have a short abstract in about 150 words.
- Use simple and non-technical language in keeping the clientele in mind, which is the primary teacher.
- The articles should have a friendly and communicative tone.
- The articles must be sent in two copies of the piece along with the soft copy (CD/e-mail).
- The photographs and illustrations should be sent in JPEG format having a resolution of at least 300 dpi.

The papers may be sent to:

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MY PAGE...

This column would contain your letters and feedback where you can put forward your responses, suggestions and expectations from the articles, papers and columns presented in *The Primary Teacher*. You may have issues, concerns and doubts related to teaching-learning processes, classroom practices, syllabus, textbooks, evaluation patterns, research pursuits, etc. These could also reflect the concerns of many others working in this area. Please feel free to raise these issues in this column. You could also ask specific questions that would have baffled you.

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NCERT
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