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- Educational policies concerning Primary Education
- Questions and Answers
- States Round-up
- Illustrated material for classroom use.

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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

Teacher as Researcher

As teachers, you raise questions related to your profession; you identify problems and try to find answers to these questions or problems. For example, why are some students irregular? Why is attendance low in some schools? Rithika has good mathematical ability, but she cannot read her textbooks. Why is her performance in language poor? Can I use her mathematical ability to teach language? asked a teacher. Another teacher from an MCD school, Delhi said that there are four students in her class who are not progressing well and all her strategies are failing. What can be done about these students is her anxious query. To find answers to these questions, teachers try to understand their own practices and the impact of these on students' learning. A teacher of MCD school analysed the student work to examine her own teaching. She used assessment data to understand why students responded in a particular way and what produced these responses. She then realised that students are committing the same error that she had inadvertently made while writing on the blackboard.

Geeta Devi Meena, a teacher in a primary school at Rajasthan observed that some children were not regular in school. She believes that parents and guardians should ensure the regular attendance of their wards. She tried an innovative method of enhancing the participation and commitment of parents in the education of children. She started giving her first graders 'Card of the Day' at the end of each day. On one side of the card, the child's name and date is written while on the other side what the child had learnt on that day. Children share this card with their parents at home. Parents collect these cards and share with teacher in monthly parent- teacher meet. This helped in enhancing the participation of parents in the schooling process. Through this activity, she also verified her belief that parents' interest and participation in children's education can improve attendance. You may think of several such interventions. Try out these in your school and see what works in your school with your children.

Similarly, whenever a new curriculum, evaluation procedure or policy decision is given to you for implementation, you may like to examine its effectiveness in your context. Some of these changes may contradict your existing beliefs. You look for evidence to accept or reject these changes. Should we have CCE or examinations, rote learning or learning for understanding, activity-based learning or chalk and talk method? While implementing CCE in her class, a teacher said it is difficult to pay attention

to each child. We teach them as a group. However, Shashi Prabha used children's responses to make their existing concepts explicit. Her paper in this issue describes how she recorded each child's response and how children negotiated knowledge and developed their own ideas. This process gave her insight into students' learning. Tullika Day used folk songs to teach Environmental Studies. The teacher and students developed songs on notes and rhythm of folk songs. She found that use of folk songs enhances pupil participation and motivates them to learn. This issue has several such papers from practitioners. This method develops students' creative abilities.

All these teachers are researchers. A teacher-researcher attempts to understand her own practice, tries new strategies and studies the impact of these on student learning. Teacher researchers raise questions about the schooling practices and what they think about these. When teachers become researchers, description of traditional research changes. Teachers are subjective insiders and classroom or school is a lab for them. Teacher researchers can conduct experiments in different classes using different teaching-learning strategies, and can then measure the results to see what works best in their schools. They can also experiment as to which type of assessment procedures works in their class. Teacher researches can help in bringing about the desired changes in the curriculum, pedagogy, assessment and other practices.

Dear researchers, take active part in all schooling processes, conduct researches, collect evidence and share with fellow teachers and authorities. This will go a long way in improving the school practices and contributing to renewal of the curriculum.

—Academic Editor

With Respect to Children

Varada M. Nikalje*

The National Curriculum Framework (NCF) 2005 developed by NCERT has for one of its guiding principles the connecting of knowledge to life outside the school. Consequently, the post-2005 textbooks brought out by NCERT followed this principle, with the happy result that pedagogically speaking, the textbooks were more user-friendly and encouraged critical thinking. One of the textbooks in English published by NCERT has a short piece on the *tsunami* of 2004. As is well-known, the South Asian tsunami, also called Boxing Day tsunami, occurred on Sunday, 26 December 2004. It had a devastating effect along the coasts of most landmasses bordering the Indian Ocean, killing over 2,30,000 people in 14 countries. It was one of the deadliest natural disasters in recorded history. The excerpt in the Class VIII textbook (English) narrates how the Smith family from South-East England were celebrating Christmas at a beach resort in Phuket, Thailand. Tilly Smith, a ten-year old school girl, along with her younger sister and parents, was on the beach on

26 December 2004. Tilly saw the sea slowly rise, and start to foam, bubble and form whirlpools. She sensed that something was wrong. The excerpt reads: 'Tilly started to scream at her family to get off the beach. "She talked about an earthquake under the sea. She got more and more hysterical," said her mother Penny. "I didn't know what a tsunami was." The family went back to the hotel. Other tourists also left the beach with them. The family took refuge in the third floor of the hotel. The building withstood the surge of three tsunami waves.' The excerpt goes on to say that thanks to Tilly and her geography lesson, they were saved.

While this was one of the more obvious examples of connecting knowledge to life outside the school, a recurring albeit hypothetical question kept niggling in my mind — if it had been an Indian child, what might have been the reaction of the Indian parents? Would they have got up immediately and left the beach? Would they have taken her words seriously? Or would they have dismissed it as

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“just one of those things you learn in school”? My suspicion is, that even if they had left the beach, it would have been due to their own growing alarm at the unnatural waves, and not respect for the child’s ability to make sense of things.

I asked this question to several school children—if, God forbid, it had been their own family at the beach, would their parents have taken their child’s words seriously? The answer was, without exception, ‘No’. Indian parents watch indulgently as their young child parrots ‘A for apple’ or spouts nursery rhymes; they showcase the child’s ability to reel off names of capital cities of the world; they beam all over when their child is the winner of a spelling bee; but if the child suggests something based on his learning at school, it may not meet with the same approbation. Parents—indeed most elders in India—feel that they know better because they are older, and therefore wiser. On the whole, scant respect is paid to the utterances of the young.

The NCF states that education is meant to give children “a taste of understanding, following which they would be able to learn, as they go out to meet the world... Fertile and robust education is always created, rooted in the physical and cultural soil of the child, and nourished through interaction with parents, teachers, fellow students and the community.” Yet the way most adults interact with children leaves much to be desired. For instance, I happened to be near

the display rack in the Sales Section of the NCERT, when I saw a little child approaching the counter. With oiled hair and a face scrubbed clean, unaccompanied by any elder, his eyes were shining in the anticipation of buying textbooks all by himself. To the sales clerk behind the counter, the child’s head slowly looming up would seem like the sun rising over the hills—I thought fleetingly.

‘Three English textbooks, Class V’ he said importantly.

‘Got the money?’ came the surly response of the person at the counter.

‘Yes’, said the child excitedly, reaching up to hand over the money.

But the man had turned away, to serve an adult customer. The child waited. No doubt he was used to being passed over for his elders and betters. A few minutes later, the salesclerk returned. The child repeated the order. ‘Why three textbooks?’ the salesclerk wanted to know. ‘You planning to sell them at a profit?’ At which the other salespersons sniggered. ‘Pay at the next counter,’ he continued, ‘and then move on to collect the books at the last counter. That is the procedure. I don’t know why parents can’t buy these things instead of sending a child to do it,’ he added parenthetically. Eventually the child got his three textbooks, but the brightness of his face had considerably dimmed by then.

Much too often we show disrespect to the young child. For instance, little children are invited to sing welcome

songs at functions; once the song is over, they are generally bundled off the dais to stand—not sit—in a corner. Again children from primary schools are made to stand in long rows in the hot sun, to cheer and wave flags for VIPs.

The disrespect permeates the very atmosphere in schools. As the noted columnist Jayashree Ramadoss points out, there is often a “fatalistic attitude towards the performance of students who come from poor families, have no guidance and are sometimes suspected of having low intelligence. The baselessness of such beliefs has been demonstrated repeatedly... By lack of commitment we fail to draw the best out of the vast pool of talent which stagnates in our villages.” One main reason is that the concept of *tabula rasa* is still part of the mindset of many teachers. The Latin term refers to the Roman tabula or wax tablet on which letters were inscribed. Some prefer the metaphor of moulding putty, or giving shape to clay. A research study conducted by the University of Ediaburh records a statement made by Charan Singh, a teacher in a school near Bijnor, “As the potter gives shape to the clay pots, so does the teacher shape his own students the way he wants them to be. But each soil is not the same. The potter cannot make pots out of every kind of soil. Some soil may be sandy and water does not stay in it, and so pots cannot be made from it. Some soil is powdery...” He extends the metaphor that to indicate several things have a hand in the making of a

child. “Let us suppose the potter has given the soil shape, and made a pot. But suddenly there is rain. Having become wet, the pot is spoiled. In this there is no fault of the potter. Along with good soil, it is necessary to have favourable conditions.” Notions such as ‘mould’ or ‘shape’ are applied in a figurative way: if a person is to develop in knowledge and understanding he must in some way be brought to learn and understand. Moreover, “the metaphor of ‘shaping’ carries with its implications about how learners are to be treated, to which there are grave moral objections, for the human mind is not composed of material that can be shaped like clay. It suggests that the learner’s point of view and dignity as a human being are to be disregarded and that little value is to be placed on his freedom. An authoritarian method of teaching is suggested, and the desirable form of response is unquestionable acceptance of doctrines.”

The stereotype regarding girls encourages the belief that they are not interested in mathematics and science. “In India, this phenomenon is striking in rural classrooms, where sometimes girls seem to be accepted more by sufferance than by choice. The passive role of girls is actually reinforced by teachers, when for example, they intervene and complete a task for a girl who needs help, but a boy in a similar situation gets extended instructions on how to do the thing for himself.”

The phenomenon is not confined to the rural sector alone. An article in *Frontline* on a 'whipping ceremony' described the flogging of Vanita, student from Erumapalti. "She received two powerful lashes from the priest that left her hand severely lacerated. She had fared badly in her monthly exams, and her parents, both primary school teachers, brought her for the flogging to get her interested in studies again. More than the trauma of the experience however, it was the thought of what her school friends and neighbours would say that worried her. The ritual, she said, was known to be meant for curing mental disorders. 'Now I have to face a stigma back at my school', she said."

What is most disturbing is that the flogging has been carried out to 'help' the child regain her interest in studies. Education is expected to remedy the perpetuation of superstitious practices, but in this case the act was carried out in the name of education. The flogging was conducted with the active support and approval of the parents, who are themselves primary school teachers. What would be their attitude to corporal punishment? How would they dispel blind beliefs, when they themselves uphold them? How would they socialise girl children under their care?

Children's curiosity is boundless. They have questions on everything under the sun, and also about the sun. But adults, most of whom have forgotten the joy of questioning and

discovery, usually respond to them with a discouraging silence. Curiosity may or may not have killed the cat, but the adult world certainly attempts to kill curiosity.

To quote Professor Yash Pal, "Over the years, I have been asked several questions that have been 'discovered' by children. These questions are seldom of a kind to which straight answers can be found in textbooks. Often, they are considered 'non-school questions' and are not addressed by teachers driven by the need to finish the course. Many of these discovered questions require more than one academic discipline to understand. Over a period of time, a consensus develops that there are two distinct categories of knowledge—one that is acquired in school and the other that is imbibed and internalised through the act of living. Furthermore, a feeling is engendered that these two categories are almost orthogonal, in the sense, that they do not and need not interfere with each other."

Children are more discerning than we think. For instance, they observe, even if they don't always understand, the perfunctoriness of most school rituals. The following extract would make it more clear of how marvellously unaware we adults are of language in the classroom/school. Though the extract is one relating to the American flag, the underlying principle would apply to the Indian situation as well :

I asked my 4-year-old son, 'What do you guys do at school?'

One day he said, 'We line up, we go to the flag, and we talk to it.'

'What do you say to the flag?'

'How do I know? They are talking to it.' You could see he wasn't bothered by it. For the kindergarten didn't require him to talk to the flag himself. All that it required of him was that he stand up and look as if he knew what was going on. That wasn't hard, and it didn't take very long, so he didn't mind doing it.

The daily chanting of the oath of allegiance to the flag, or a prayer that they don't know the meaning of, or lip service paid to photos of national leaders on certain days, characterises much of the language environment of the child, which, in effect, 'disconnects' him for short durations. 'It is extremely important that textbook writers and

teachers realise that children learn as much outside as in the classroom, particularly in the case of language.' On the other hand, "every experience that leads the child to conclude that the teacher is talking some other language, when situations are presented to him/her such that he disconnects himself, is in effect teaching him that listening is unnecessary and is imposing a restriction upon the range of situations in which he will be willing to trust words. The real danger is that we may so condition him that he learns to accept his incomprehension."

The child will begin to view schooling, and by extension education itself, as being only form and not connected to life. That surely is the greatest disrespect accorded to the child. Fortunately, though, it did not happen to Tilly Smith.

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Modelling Values

Savita Bawa*

During the last Parent Teacher Meeting a parent told me that her son was always watching TV. Another parent said that his daughter was not fond of reading. Still another parent confided in me and discussed at length all the changes that were coming in the thinking and personality of his child. The list can go on endlessly. The problems varied but every parent looked at me expectantly as if I, the teacher, had the magical wand to set everything right. Parents expressed not only their complete helplessness but also the desire to see a positive change in their children.

Back home I started thinking: do I really influence the lives of young adolescents this much? Why did the parents have such faith in me? I started introspecting and continued to observe my own behaviour for a period of time. I became mindful of my words and actions. I realized that children learn more by what they see than what they hear. It is easy for them to follow foot prints than advice. I may be able to escape the eagle eyes of my Principal but never my students. It is

both verbal and non-verbal language used by me in the class or outside the class that students observe so minutely. I think I am the magician performing live on the stage every day.

As a teacher of English, I decided to make a deliberate attempt to ensure that students pick up values and grow up to become sensible and responsible citizens. I decided to utilise 'Arrangement Periods' and also spend some time from my regular classes interacting with students, trying to help them unfold. Narrating personal experiences, anecdotes and relating them to the text served a very useful purpose.

I observed that all the lessons that I taught in the class have scope for inculcating values among students. While teaching, I touched upon various values in a very subtle way. Students imbibed life skills naturally. They developed self awareness, decision making, creative thinking, inter personal communication, critical thinking, empathy, and problem solving. They learnt effective communication, built

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self esteem, learnt refusal skills and negotiation. Values were integrated in such a manner that students and teachers did not even realise how and when students picked up skills of compromising, accommodating, mediating, sorting out interpretations from fact and developing a sense of forgiveness.

I give a lot of importance to character building and always remember that I am being observed minutely by my students every day. Setting Ground Rules in the beginning of the session really helps teach students life time values. Every lesson of the textbooks teaches a value. I make a deliberate attempt to sensitise students about the value learnt. As and when time permits, I tell students about legends and heroes, people we look up to and relate well to them.

I lay special emphasis on values of respect, responsibility and discipline. Reinforcement of the values learnt and practised definitely pays off. I take the core values and ask students “Is anyone opposed to respect, opposed to responsibility, discipline or self-control?”. With experience I have realised that all the students recognise the importance of values, they may not be able to demonstrate them, but they at least agree that values are significant.

I do not like my students coming late to the class. But sometimes they do have a genuine work. Therefore, I have told my students that they will be allowed to do their work provided

they wait for me to come to the class and go with my permission. It has been found that students remain seated in the class.

Recently I gave students a project on how to resolve conflicts. The project included a lot of reading by the students, interviewing different age groups, preparing a magazine and a classroom presentation. Students keep a daily record of the value picked up from the environment.

Loving appreciation and words of encouragement have become my most important aids. I have pledged not to lose temper whatever be the situation, always encourage and motivate students, write positive remarks in their note books, give them the confidence that they are improving and the result is going to be brilliant.

Soon I won their faith and gave them the assurance if they showed signs of improvement they would be suitably rewarded. The small steps I took were not anything unique or difficult to take but I made them my habit. I practised what I wanted to teach my students.

I arrived at the conclusion that all students actually wanted to learn English language and groom their personalities. They understood that the language would enable them explore job opportunities and raise their self esteem. They did take small steps and I realised that I must not lose hope and continue to show them the way. If I remained consistent in my efforts, my students would be

encouraged to continue the effort. It was using the language in and outside the classroom that would build their vocabulary gradually. If students were properly guided and directed how to make optimum utilisation of opportunities there was no reason students would not do the task.

Children become what they live with. Their experiences at home and school give them the foundation to build their own lives. Hence it is very important for the teacher to possess all those virtues which she wants her students to possess. In order to teach patience, sincerity, and diligence to students the teacher must practise these qualities. Positive reinforcement is a miraculous tool which guarantees improvement. A pat on the back or light humor in the class does wonders. I believe in the maxim: I can do it, I will do it.

I agree that the modern scenario is not very encouraging and motivating. There is fast deterioration of values among students. Ill effects of media, negativity widespread in the society, influence of friends and of course the fact that students do not respect parents and teachers are grave issues which need to be addressed without further delay. I strongly believe that if we become role models of our students and empathise with them we will certainly command a lot of respect.

All is not yet lost. There are still a large number of students who value advice of their teachers and look up to them for direction. A teacher's word is

Bible for them. It is up to the teacher to use different tricks from her bag and never quit. As a teacher I must never surrender to the whims and fancies of the immature young heads who are actually not mature but confused and muddle headed. Students test the teacher, her patience and knowledge. If the teacher remains firm, students also learn to obey the teacher sooner or later

C. S. Lewis said, "Education without values, as useful as it is, seems rather to make man a more clever devil". Crimes by juveniles raise questions on the quality of education specifically the value education imparted in our schools. There is a need to sensitise adolescents and develop commitment in them so that their hateful behaviour diminishes significantly. The climate of school encourages expression, enquiry and dialogue, and therefore it becomes my sacred duty to inculcate sense of duty, tolerance and mutual respect among my students and help them become morally upright.

Children pick up values from different sources like home, friends, school, neighbourhood and religious places. Each source contributes significantly in their lives and leaves an indelible impression on their vulnerable minds. Being a teacher, we can help our students choose what is right and beneficial for them. Our students must be taught that if they stand for nothing they fall for anything. It is not doing the things

right but doing the right things that really matter. They must purify their hearts, aim at inclusive society and continue to express gratitude to god.

Experience has also taught me that most of the children can be easily tamed. A tall well-built child who appears to be very rough and tough from outside is actually very insecure at heart. An aggressive teenager also appreciates the compassionate attitude of the teacher. Since we, the teachers, deal with young lives we cannot ignore them and let society degrade further. School plays a pivotal role in developing the healthy personality of a child and the

responsibility of a teacher cannot be underestimated and undermined. School remains the prolonged arm of the family and a teacher remains the guardian nurturing children.

Let us not expect miracles to happen overnight but at the same time, I have the indomitable conviction that if I do justice to my profession I will reap a number of benefits, viz. contentment in personal life and an opportunity to live in a better society where my students have grown up to become dynamic leaders, policy makers and honest human beings commanding respect from one and all.

A Case Study of Mirambika: a Child-friendly Approach to Pre-school Education

Savita Kaushal*

Abstract

To foster child centric and joyful learning and provide an enabling environment we have to make our 'schools ready'. It is not just about making 'a school' child friendly— it is about a transformation of the system with child-centred planning, focusing on overall development of children. A school that is ready for children will accept all children, with sensitivity to cultural diversity. It would provide opportunity for enhancement of potential of each individual child. It would ensure smooth and seamless transition for the child from home to ECCE centre to formal education. Such a school will form effective relations with parents and community. In the present study the author has tried to understand the pedagogic/philosophic significance of Mirambika— the reason for its existence; its innovations and experiments especially from the point of view of pre-school education.

Introduction

“One of the timeless messages of early childhood is to treat children with respect and value their unique perspectives on the world.”

– Jalongo M.R., Stevenson, Abigail C.Davis, Marjorie L Stanek (2010)

In the recent past there has been large scale expansion in the provision of ECCE centres as the Integrated Child Development Services (ICDS) programme has been universalised and

now there are 14,00,000 Anganwadi Centres sanctioned by the Ministry of Women and Child Development, covering each and every habitation of the country. Similarly, Right to Education Act-2009 has mandated the states to provide for a primary school in neighbourhood, within a walking distance of one kilometre. This has led to a phenomenal expansion of school infrastructure and facilities, significantly widening access to schooling.

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The Working Group Report on Elementary Education, 12th Five Year Plan highlights several initiatives that have been taken by various state governments to provide education of satisfactory and equitable quality in a formal school which satisfies certain essential norms and standards. The Working Group Report on Child Rights, 12th Five Year Plan also mentions about formulation of National ECCE Policy and laying down of quality norms and standards for ECCE provisions. But these are, as yet, policy statements on paper and would take long to actualise on the ground.

A major achievement in the field of education has been the enactment of Right to Education Act-2009. Today RTE guarantees free and compulsory education to all children from 6-14 years in India. Though there has been notable expansion in enrolment figures in the last few years, national drop-out rate is 24.93 per cent for all categories between Class 1 and 5 and 42.25 per cent for Classes 1 to 8 (*School Education Survey, 2008-09*). A probable reason for this is that it is not only the children who have to be ready for school; the schools also have to be ready for children.

We can say that a 'school is ready' when it is child-friendly, i.e. it responds to the diverse needs of the young children and safeguard their interests. A school that is concerned with well-being of the whole child, fosters development in all domains in an integrated and holistic manner, and gives children the best possible

start in life is a school that is ready. Such a school should be affordable and easily accessible as well.

What Makes Mirambika Different?

Many alternative visions of schooling have emerged in our country. 'Mirambika' in the city of New Delhi is one such exploration. Mirambika is an alternative school located in and run by Sri Aurobindo Ashram, New Delhi. The author has made observations of the school and also interviewed the staff and teachers. Apart from that informal interactions were conducted with the parents.

Modern schooling and society has destroyed elements of fraternity amongst human beings. It deprives the child of the joy of learning and kills the spirit of innovation. Thus, Mirambika came as an alternative school striving to bring out child's innate potential and providing him/her the experience of creative joy and inner growth. Few others see it as part of the home schooling movement that is critical of mainstream education system. As an institution, they have adopted the philosophy of education as a liberative principle. One really feels that these children are moving towards developing a holistic personality that is sensitive to the issues of wider social life.

This centre has a small innovative school, at present with classes from lower kindergarten to Class VIII. Small, on purpose, because all involved with its functioning prefer quality, above quantity. The school is instrumental in

spearheading educational development and provides a training ground for educators from all over India. The different learning styles help children to grow up as responsible and self-reliant individuals. Respect for the individual, harmony in diversity, a freedom, which asks for, an inner discipline not based on fear or guilt, are components of the school culture. When new ways are explored and new activities developed, research and evaluation are a must. To cater to this, Mirambika has a research wing. It provides the necessary inputs for further development in the school, the teachers training and the resource centre.

Philosophic Foundations of Mirambika

As the name 'Mirambika' signifies, the school derives its inspiration from the charisma of the Mother—her educational philosophy and the way she sought to accomplish the spiritual agenda of Sri Aurobindo. Perhaps it would be more appropriate to say that Mirambika, as a school, is an experimental vision of Sri Aurobindo and the Mother.

The main objective of education is to enable the child to realise his/her potential and to develop the faculties of learning, not to bombard them with mechanical book-learning and a store-house of facts, information and second-hand ideas. Once these faculties are developed, the child would be able to learn everything with more intensity and creativity. Sri Aurobindo

gave concrete suggestions on the development of mental faculties, like the power of observation, the ability to differentiate and to judge.

“...this unfoldment would be a natural and joyful process of growth and learning which would flow from within to without. Learning would then be free of structures that bind and stifle and would become more and more a dynamic process of self-discovery and self-actualization”.

Free Progress Education

As an alternative, the main focus of Mirambika is on the child; the child's innate potential and his/her ability to unfold it. This faith in the child frees him/her from the fear of punishment and the life-negating pressure of examinations. According to my opinion, Mirambika is a school that reminds one of 'happy childhood'—a school without homework, exams, grades and ranking. It is seen as a 'child-centred' school where everything is possible.

We would, however, like to point out that the meaning of 'free progress education' at Mirambika is far deeper. It is not just the absence of fear and punishment, or of conventional and routinised form of learning. Nor is it merely a negation of the mainstream. It is something more profound. It has a distinctive agenda—a spiritual agenda to transform the character of the human species.

The prospectus of Mirambika— a text which is worth studying in its own right—asserts its educational principles, quotes extensively from

the writings of Sri Aurobindo and the Mother, and argues why it celebrates the concept of 'free progress education'.

"Mirambika's free progress concept was born of a profound spiritual vision and understanding: that education is the process of awakening and evoking the true being, the psychic presence within, and through that process, bringing about a progressive unfolding of the whole person."

Infrastructure

A cursory look at Mirambika is enough to convince one that the school is of an altogether different kind. Its splendid architecture—its geometrical symmetry, openness, its harmony with nature—is overwhelming. Indeed the architecture reveals the philosophy of the school. Here is the school that does not confine children to an 'enclosed space' for forceful learning. It is a school that does not look like a cage. Instead, its openness invites freedom. The visitor can visit the school at any time, move around and experience its beauty and calm. There is nobody—not even a security guard in uniform—who asks questions or expresses doubt about the 'intention' of the visitor.

From the winding, tree-shaded paths that meander through the campus, to the intimate, stony buildings designed to harmonise with the natural landscape, Mirambika School is a visual oasis, a peaceful, yet dynamic environment rich with opportunities for traditional and non-traditional learning. Organic gardens, a student-built greenhouse, ceramics

and painting displays, a rich library, athletic fields, tennis courts and playgrounds. Inside the Main House, organic vegetarian meals are lovingly served to the students.

What one notices here is the absence of structured/reutilised practices. Instead, the free movement of the children is all pervasive. When some children are engaged in art work, others may be learning rhymes. Likewise, when someone is playing, his/her friend may be busy in making a boat in the classroom. Small classes in a natural environment are guided by experienced teachers who encourage discovery and inquiry while supporting exceptional academic, creative and personal growth. The school, it seems, tries to respect the autonomy of the children. The beauty of Mirambika lies in its small/humane size.

Teacher-student Relationship

A school like Mirambika, it is obvious, needs teachers who are qualitatively different. Given the radical educational agenda that Mirambika has chosen for itself, its teachers ought to be gifted.

Teachers in Mirambika are fulltime teachers, i.e. those residing in the Ashram; trainee teachers, i.e. those doing NTT practice teaching and volunteers who are part-time teachers. The volunteers are mainly parents who take up some specific activity or help the teacher and are from various institutions and private organisations. The idea of teacher for Mother was "We do not need teachers with opinion and the degree to teach the children, we

need living being who can impart a sense of value, who can help to evoke in children what is best in them, who can help them discover their own inner light and nurture the instruments to express its truth.” Therefore, the ideology expects the teacher to bring out the child’s creativity, curiosity and interest in learning. This means that the teachers here ought to be quite knowledgeable and research-oriented. They try to challenge the hierarchical power relations and practice the egalitarian ideal. They are expected to respect the autonomy of the child. No doubt, it is not easy to find such teachers.

Mirambika has a Teacher Training Wing on its premises which conducts ongoing training for its pre-service as well as in-service teachers. The training programme focuses on the school ideology and philosophy, principles of learning which form the basis of teaching-learning in school. The Ashram runs a teacher training course with a rigorous practical and a hands-on experience in Mirambika School for three years. They are then appointed as teachers.

The teachers in Mirambika Nursery School are called ‘dijas’. The term ‘Dijas’, is coined from the words ‘didi’ (elder sister) and ‘bhaiya’ (elder brother). As explained by a teacher: it symbolises ‘beckoning the light, the one who kindles the light in children’. Teachers are not salaried staff but are paid a token stipend which varies for full time and trainee teachers. The teachers are chosen on

the basis of their interest of working with children, affection and motivation to do their job. Teachers, it seems, join Mirambika either to work for the ideals of Sri Aurobindo and the Mother or because of the popularly acquired image of an innovative school and which they would like to ‘see for themselves’ or are ‘interested’ to know more about. Volunteers are strongly motivated people who join because of their love for children and interest in teaching. Since the volunteers are not paid, it is only the genuine people who voluntarily come to teach.

One thing that radically redefines education is the teacher-student relationship that prevails at Mirambika. Teachers at Mirambika are treated at almost an equal level. One would naturally expect children to learn from the teacher’s example. Unlike conventional school where paid teacher teaches, holds exams and ranks children, Mirambika appears to be a sacred zone of meaning. The beauty of the teacher-student relationship seems to be not corrupted by the ‘fear of punishment’.

Learning Spaces

In Mirambika, learning takes place everywhere, starting from the play ground to verandah to classroom to dining hall. From nine to twelve in the morning children work on topics. A ten-year-old child chooses independently a topic, decides the area of work—which portion to study, which activities to do, what experiments to perform, and what points of view to be

included. This helps children learn to take, to study independently, reason out things clearly, be more self aware and responsible. There is freedom in the way the children study and relate to their 'diyas' (the name given for the teachers in the school), the way they play and participate in various activities, the way they move around and radiate their experiences of joy. There is no school uniform and no 'fixed' work for the children of the same age. This striving for a distinctive identity explains the meaning of the different groups the classes are divided into according to the age group—Red, Blue, Green, and Orange.

The children get to know of their responsibilities; the importance of their participation. For example, it is not difficult for these children to respect time, to live with it and maintain a schedule, in spite of that there is no 'disciplinary' school bell to tell them when they should do what!

Classes and Learning Materials

Children are grouped according to their age and each group has a name given to it. For the younger children the groups have names of colours which are chosen by the teachers namely—the youngest group is called the Red group and has children from 3 to 4 years of age. The next group is the Blue group having children of 4-5 years of age followed by the Green group (5+ years). The teacher-pupil ratio and student-classroom ratio is 1:18, that means each class has only 18 children and one Diya (teacher).

Though the school has a very small number of students by contemporary standards, it gains prominence by having a reputation of being popularly known as an 'innovative' school.

The physical organisation of the classroom bestows a structure on activities carried out. It is, therefore, significant to know that the classrooms or the workspaces of children in Mirambika are designed keeping in mind the needs of different groups. The classes have large areas of work, low tables and durries for sitting. The classrooms have an annexe which their teacher explained, 'is used by children for sleeping in or for those children requiring special attention or for attending to a crying child away from the curious eyes of the peers'. The round sunken area in the corner of the room is used for activities like singing, story-telling, and playing with children. Making children sit in this area helps the teacher to be close to the children, keep them in one place without actually saying anything to them. 'Diyas' were seen sitting in between the children narrating stories and reciting poems, children often sitting on diyas' laps or climbing on their backs.

We always talk about using indigenous materials for teaching children but, what we see in reality is that children use readymade materials bought from the market which are sometimes not only non eco-friendly but also not suitable to the age and context of learning. But in Mirambika it was observed that children were

mostly using the indigenous materials for learning and even folders used to keep activity record of each child were made of old newspapers.

Health and Hygiene

A close look at the school reveals its child-friendly atmosphere. The school premises are kept very clean including the toilets. It is also surprising to see that the infrastructure is child-friendly and 'usable' for the nursery children. Keeping their age in mind they have made lowered wash-basins, drinking water tap. Every child keeps an extra dress and a pair of socks, in case if they wet their dress while playing in water. Throughout the activities, the child is made aware of the 'self discipline'. Each child puts the things back in their respective places after the use. To the concern for the health of the children, healthy lunch is provided in school.

Selection Process

Admission is undertaken as per the government rules for admitting children in nursery class. In the process of selection, the children are not interviewed. This speaks of Mirambika's concern for child. Little children, the school believes, should not be subjected to the oppressive process of examination, interviews, evaluation or ranking. The process of selection is aimed at choosing only those parents who are willing to appreciate the alternative educational agenda that Mirambika seeks to pursue.

Parent's Involvement

The parents are, no doubt, deeply involved with Mirambika. With a school like Mirambika, it would be difficult for anyone to remain content with merely contractual relationships (i.e., pay the school fee and demand 'results'). No wonder, a parent of a child who studies at Mirambika manages time for the children of the school and assist them in some activities.

Disciplining Strategies

Generally when we enter into the classroom, we see teachers using the sentences like 'keep quiet', 'don't make noise', to control the children. But in Mirambika not even a single time teacher used these words. Neither corporal punishment nor verbal aggression by teachers performs any role in school interactions. The focus in Mirambika is on developing 'inner discipline' in students. Alternatives to punishments are attempts made to develop inner discipline. Some controlling strategies evolved by the 'diyas' for the younger groups include: calling peace – symbolic gesture of hands, to quiet children down; asking children to become 'statue'; symbolic gestures indicating that noisy rat inside the child is thrown out; putting on music to make children dance and spend their extra energy; playing tug-of-war with the trees in the grounds; or talking softly to get the attention of children which in turn makes them lower their noise level.

The value of cleanliness and hygiene is also inculcated in the child. The best part of it was that, teacher did not ask them to do these; they were doing on their own.

Parent-teacher-child Interactions

Teachers and children view themselves as learners in Mirambika which fosters closeness in relationships as well as informal sharing of views. Teachers see this as a means of strengthening the teacher-taught bond and make the environment homely. This makes them receptive to the faults or mistakes pointed out by the children. Teachers view their relationship with parents as 'wonderful' and open and feel that parents' involvement in the child's work at school or at home is substantial. Most of the trainees feel that parents contribute a lot in school activities like projects, plays, model making, etc. The interaction with parents is 'trust-based', 'good', 'open' feel some, while others expressed that support of parents in school societies and interactions is not limited only to PTA meetings as in other conventional schools. Parents' voices as participants of Mirambika are of significance like those of the teachers and the children. It is because parents comprise a significant group of participants in the various school activities by way of their contributions, involvement, pressures and opinions. The perspectives the parents hold result in their forming

specific identities in relation to their environment, which interacts with the social identity of the school. This results in a school culture which may be taken as a part of parent culture as well as teacher culture.

Conclusion

Our society – or, to put it more specifically, the career conscious, ambitious, anxiety-ridden middle class – wants school to deliver the goods, that is, it wants children to acquire knowledge, improve their career prospects and achieve 'success' in life. 'Good' schools, therefore, are required to be careful with their 'products' – the products with a 'market-value'. In this scenario, the existence of Mirambika – a school that seeks to implement the educational agenda of Sri Aurobindo and the Mother – is indeed surprising, mainly because it aims to accomplish what, according to the mainstream way of thinking, would be regarded as an 'impossible' project. No doubt, a school like Mirambika would never be free from difficulties and challenges, as it dares to do what seems to have no meaning in an intensely competitive, fragmented and divided world. Yet, the fact that Mirambika has been around for more than twenty years shows its innate zeal, its ability to meet challenges and difficulties, and grow, despite the many unresolved contradictions and the resultant anxiety regarding its survival.

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4

A Study of Academic Readiness of Preschool Children

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The present paper is based on a comparative study of the academic readiness of two groups of children of Class I – one exposed to the normal preschool programme and another exposed to early reading, writing and arithmetic experiences. The study was carried out to find out whether a preschool experience stressing early reading, writing and arithmetic would help children in early literacy and numeracy skills in Class I.

The crucial importance of preschool and the need for preparing children, before they enter Class I and exposing them to a programme of preschool learning, is now universally recognised. The early childhood years especially 4 to 5 years age group in a preschool enable a child to think, to listen and to judge for themselves. Normally the teachers of Class I feel that a child with preschool experiences adjusts easily to the demands of Class I. The question here is whether the education that children get in the preschools is appropriate to their stage

of development and needs, so as to lay a firm foundation for the future years. The preschool programme can and should bridge the gap that the child faces between her preschool years and her beginning of the primary school.

The preschool beginner faces many new problems in Class I in spite of having enriched early childhood experiences. Entering Class I requires new adjustments for all children, even for those who have attended preschool. The degree of child's confidence, excitement, pride, anxiety, anticipation and perspective at the door of the Class I is determined by the experiences that his preschool environment provides for him prior to Class I entrance. Thus adjustment to Class I play an important role in building up the life of the child.

Adult demands and expectations in Class I are different from the experiences child has had in the preschool. There are rules and regulations at school, that are set for the whole school and, therefore, do not

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make sense to young children. Schools also demand authority and the school beginners who are not ready to face this new authoritarian situation feel insecure, inadequate and left out. The discontinuity prevailing between pre-primary and primary school may be a frustrating experience for a newcomer who enters Class I with lot of enthusiasm.

The *Report of the Education Commission (1964-66)*, Ministry of Education, Government of India indicated the problem of wastage and stagnation in India in first two decades. It reported that about two thirds of this wastage occurred in Class I. The report stated that the large stagnation and wastage in Class I is due to various reasons which include:

- the heterogeneity of the age composition of students ;
- the practice, which obtains in several states, of making fresh admissions throughout the year, instead of in the first month or so of the school year;
- irregularity of attendance;
- lack of educational equipment in the school as well as with the children;
- overcrowded classes;
- unsuitable curricula;
- inability of the teachers to use play-way techniques which can assist in initiating the children pleasantly to school life;
- poor teaching of beginning reading;
- inadequately prepared teachers; and
- a wrong system of examinations.

This kind of problem is faced by the Class I teachers of many government schools. The teachers of Class I feel that the children without preschool experience and children from the preschools where there is no early reading, writing and number activity have difficulties in accommodating themselves to formal learning tasks during the initial period as they are not adequately prepared for formal learning of reading, writing and arithmetic. These children, they say, find it difficult to sit at a place for long and concentrate; do not obey; find difficult to copy from board; do not follow oral instructions, etc. Some of them are not able to hold pencil also. Teachers think that it may be due to no preschool experience or due to the preschool programme which may be based on free atmosphere where learning happens in a casual way. At the same time they say there are children in the class who have preschool exposure with early reading, writing and number works. They know to handle their reading writing material, follow instructions, can copy from board, identify alphabets, numbers, etc. In such a situation it becomes difficult for them to deal with heterogeneity in the classroom with respect to learning levels.

The researcher understands that these problems are certainly due to the gap between the two environments. The preschool programme is based on progressive philosophy of education and helps in preparing the children for later learning at the primary school

level. It is based on understanding of the characteristics and abilities of the children and it attempts to promote their optimal development. In the primary school, expectations are quite different. They expect children to learn scholastic tasks from preschool itself. This creates a gap between preschool and Class I. The difference in the expectations of the two situations undoubtedly results in a problem.

The investigator wanted to study this problem and see if children really face problem during the initial period in Class I with reading, writing and number tasks.

It was admission time, starting of the academic session after summer vacation when the investigator started her field visit programme in the Government Primary School of Sikanderpur Ghosi Village, Haryana, Gurgaon. The researcher noticed that some Class I children were in school uniform with books and bags and others were not. Researcher inquired from the Class I teacher why the children were not in school uniform. The teacher replied because they were newly admitted. Every day there were one or two new admissions but even after fifteen days of admission she was not giving them uniform, books, bags, etc. On being asked again she replied that she was observing the newly admitted children. If they will come to school regularly then only she will issue them uniform, books, bags, etc. She said these children get enrolled but do not come to school

regularly; there are chances that they may discontinue after few days. The investigator asked the teacher as to why she thinks they will drop out. The teacher replied:- there are many reasons, firstly their parents are staying on rent in the village and work in neighbourhood kothis as watchman, maid, construction labourers, etc. Their job is not permanent and as a result they may shift and enrolls their children in different schools. Secondly, these people are from far off places like West Bengal, Bihar, Odisha, etc. For festivals they go to their hometown for long period and as a result lose their job; on returning they change their workplace without giving importance to location of their children's school. Sometimes families of construction labourers and others do not return. They stay back in the hometown for different reasons. Thirdly, she said majority of the parents of the enrolled children are illiterate and they do not give importance to their children's education. Children come for one or two days, sometimes for a week or for a month and then stop coming to school without giving any information and sometimes they keep playing in the 'gali', but parents do not care to send them to school. Neither these people are bothered about the school related activities. Fourthly she said, the family problems, drunken father, working mother, younger siblings at home, etc. force the elder ones to stay back to look after their household chores. On this the investigator inquired if there is no *Anganwadi* centre in the

village. The teacher replied: there are five *Anganwadi* centres in the village and out of five, four are very close to school. The investigator further asked why the young ones can't go to *Anganwadi* and the elder ones can come to primary school. The teacher replied it all depends on parents, how they manage things and guide their children. In private schools parents are scared of teachers and principal and do not allow their children to be absent from school even for a single day. They are scared once the name is struck off from the school they will lose admission, but in government school this is not the case. Fifthly, she said in private schools children with preschool experience are admitted in Class I but in government school children without preschool experience are also allowed as a result children without preschool experience face adjustment problems and drop out. The investigator asked what kind of adjustment problems they face. The teacher said, they face the problem of reading and writing of alphabets, number recognition, etc. She said, if the children are able to identify the letters and are able to hold pencil and write few alphabets before coming to Class I then they can carry on and adjust otherwise it is difficult for Class I teacher to help all the children learn reading, writing alphabets and number work in limited time. Lot of time and energy is required and with single teacher in a class it is not possible. She suggested that for teaching all children reading and writing of alphabets, words, sentences

and paragraphs, etc. minimum two years duration is required. There is lot of heterogeneity in Class I, children with preschool experience focusing on reading, writing and number work know to write and can copy from the board but there are first generation learners also in Class I without any preschool experience who can't hold pencil, can't recognise letters. To bring them all at same level more time and at least two teachers are required.

The investigator further asked the teacher if she has ever visited the *Anganwadi* centre in the neighbourhood. Has she seen the preschool activities going on in the *Anganwadi* centres? Do the activities conducted in *Anganwadi* centres contribute in learning of reading, writing and number work in Class I? Are children from the neighbourhood *Anganwadi* centres enrolled in her class? Does the *Anganwadi* worker visit the school to find out how her children are doing? Does she (Class I teacher), find any difference between the children with and without preschool/*Anganwadi* experience? The teacher replied to all queries patiently. She said though she has never visited the centre to see what preschool activities are going on but she can find the difference between children with and without preschool experiences. She said there is one *Anganwadi* very close to school, just opposite the road side; the *Anganwadi* worker of that *Anganwadi* keeps coming to our school. She told that she is helping children to identify

Hindi and English alphabets and her children can write A to Z, Hindi 'swar' and 'vyanjan'; some of them can also do number writing from 1 to 100. There are children in her class from that *Anganwadi* centre and she said that she can see them doing so. The investigator asked the teacher: 'What about the other *Anganwadies* in the village?'. The teacher said that she did not know about them.

The investigator decided to teach Class I along with the Class I teacher to understand the difference or difficulties of early literacy of children with and without preschool experience. Keeping in mind this problem of Class I children as one of the objectives of field visit, the researcher interacted with the parents of the children also. Parents of children enrolled in Class I were questioned about their ward's preschool experiences. Children with preschool experiences were few and had come from neighbourhood *Anganwadi* centres. The investigator decided to visit the neighbourhood *Anganwadi* centres of the village. The investigator found five *Anganwadies* in the village as reported by the teacher of government primary school. Out of five, four were very close to the government primary school of the village. Visit to four neighbourhood *anganwadi* centres and observation of activities organised by these centres gave investigator an idea of preschool education being provided by these centres. Out of four, one *Anganwadi* was very close to school. The *Anganwadi* worker of this centre was intermediate

and was very enthusiastic about her work in the centre. She shared the activities which she was doing in the centre to promote reading, writing and number work for preschoolers along with rhymes, songs and play activities. She said that no other *Anganwadi* in the surrounding is doing it so seriously. Her children have been enrolled in private schools in Class I and are able to keep up. Even the private schools in the neighbourhood sometimes fail to help children identify letters in Hindi and English and do number works from one to fifty, here some of the children can write up to 100. If you don't believe, she said, you can visit the nearby government school, my children are there in the school, you can check and enquire from Class I teacher. Other three *Anganwadi* centres were found to be doing the routine work, some rhymes, free play and nutrition. Majority of the mothers were working as maids in the kothis, so children were safe in the *Anganwadi* centres.

With this background the investigator planned a study to assess the influence of preschool experiences stressing reading, writing and arithmetic on learning in Class I.

Objectives of the Study

To find out whether reading, writing and arithmetic readiness in preschool helps children in learning reading, writing and arithmetic in Class I.

To find out whether normal preschool programme (development

oriented) helps children in learning reading, writing and arithmetic in Class I.

To find out which of two preschools – one stressing on reading, writing and arithmetic and the second stressing on development helps better in learning literacy and numeracy skills in Class I.

To explore other possible factors besides reading, writing and arithmetic readiness that helps children in early literacy and numeracy in Class I.

Sample

The subjects of the study were chosen from the two neighbourhood *Anganwadi* centres. Children from Centre I had undergone reading, writing and arithmetic experience were named Group I.

Out of other three *Anganwadi* centres in the neighbourhood, one centre was selected randomly and the children from this centre had undergone normal developmental preschool programme and named Group II.

Since the children from Group I and Group II were enrolled in Class I of Government Primary School, Sikanderpur Ghosi Village, so they were observed in classroom setting to assess the influence of these two different kinds of preschool experiences on their Class I learning.

The study has 27 subjects, out of which there were 12 boys and 15 girls. The age ranged from 60 months to 75 months with a mean age of 67.5 months. In Group I there were 4 boys

and 8 girls. In Group II there were 8 boys and 7 girls.

The observation of children learning in Class I was based on teacher's rating and the rating of the investigator.

Observation of Children in Class I

Since the major objective of this study was to assess the influence of academic readiness on progress of early literacy and numeracy skills, children of Class I were observed by the investigator and the Class I teacher both. The teacher was informed about the purpose of the observation but she was not told about the experience received by the children of Group I so that she would not be biased in her observation. The children who had been in Class I but were not part of Group I or II formed a third Group of subjects, called as non-programme Group, i.e. Group III. Thus the children of the entire three groups were observed by the regular teacher for Class I and the investigator for a month as the period is important for making initial adjustments to formal learning. It was interesting to find out Class I teacher's rating of the six best ready-to-learn children and the six least ready-to-learn children. According to her rating, four of the best ready-to-learn children were from Group III and two were from Group I. On inquiring about the reasons, she emphasised their proficiency in reading, writing and numbers. On inquiring parents of the four 'non-programme group' (Group III) children who were found to be

best ready-to-learn by the teacher on academic aspects of their schooling, it was found that parents were literate and children had received coaching at home and preschools attended by these children prior to Class I had a regular instructional programme of reading, writing and arithmetic and hence were able to perform well in the specific scholastic tasks of Class I.

Investigator's ratings were also the same but the reasons were different. Investigator rated them best ready-to-learn because of their cognitive skills, language development and social development. These children were able to adjust themselves to group activities, follow instructions, handle their belongings well, had leadership qualities and also showed reading, writing and number readiness.

In teacher's rating of the six least ready-to-learn children, one was from Group I and one was from the Group II and four of them were from Group III. Since the Group I had been exposed to a preschool programme emphasising numbers, reading and writing of alphabets, they were better on teacher's rating. At the same time we can see, though, they were better in academic aspects teacher had rated one from Group I as least ready-to-learn which shows individual factors also play important role in children's readiness. One Group II child was rated by the teacher as least ready-to-learn though he had undergone preschool programme. It may be because in the normal preschool programme there is a free and permissive

atmosphere and emphasis was not on the acquisition of reading, writing and numeracy skills. Four children from the Group III who were rated as least ready-to-learn by the Class I teacher, had no preschool experience. They were enrolled in Class I directly. Their parents were illiterate and these children were found to be irregular in class. Out of these four least ready-to-learn children, there was one child whose father used to beat him on asking for pencil or a notebook for school. Many a times his father had torn off the child's books that he had received from school. His father used to beat him if he used to say that he is going to school. It was the mother of the child who was sending the child to school in father's absence. Reason is not known 'why' it was so.

Investigator rated two from Group I and one from Group II and three from Group III as least ready-to-learn. Investigator found that these children were lacking in positive self concept, good personal habits, initiative, independence and self-confidence. They were not listening, exchanging ideas or participating in group activities. They always wanted to go and sit at the back without any expression on face. Punctuality and regularity was a matter of great concern for us. These children were not regular and whenever they used to come they used to come without proper books, notebooks, pencil, eraser, etc. Sometimes even without slippers. These children were not able to identify beginning and ending sound

of words; they were not able to identify shapes, primary colours; they were not able to do seriation, sequencing or able to complete the pattern with concrete objects. This shows that individual differences also prevail. Two children from Group I had a preschool exposure stressing reading, writing and number work still they were rated least on ready-to-learn.

Conclusion

On the basis of the findings of the present study, it can be concluded that:

- Reading, writing and arithmetic experience received by the children in preschool of Group I helped them to attain academic readiness for early literacy and numeracy.
- Both the preschool experiences, i.e. one stressing on reading, writing and arithmetic and the normal preschool programme, i.e. development oriented helped in academic readiness to Class I.
- Preschool programme helped

children in early literacy activities in Class I.

- Preparedness at home before admitting the child to Class I, literate parents and preschool experience helped the children in accommodating themselves for scholastic tasks expected in Class I.

Implications

Experiences in reading, writing and arithmetic such as identification of sound and shape of alphabets; value recognition of numbers, holding pencil, drawing simple patterns, writing few alphabets and numbers should be included in the regular preschool programme in order to promote reading, writing and number readiness for the Class I.

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An Evaluative Study of Early Childhood Care and Education Programme in Punjab

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Promila Saini**

Abstract

In the process of planning and formulating policies related to Early Childhood Care and Education (ECCE), one major drawback that one faces is the lack of a well developed body of research in this field. It is only in the last two decades that researchers from various disciplines have become interested in studying the young child's growth, development and learning process. It has been discussed at various forums that ECCE has not been provided a due place which it deserved; instead it has been relegated to an innovative activity under Sarva Shiksha Abhiyan. Hence, there is a need to evaluate ECCE programme under the provision of SSA. In the present research, descriptive survey method and purposive sampling technique were used by the investigator to collect data from 60 ECCE workers, 60 community members and 30 parents from Gurdaspur district of Punjab. Self constructed interview and observation schedule was used by the investigator to evaluate the ECCE programme. The investigator explored the views of parents, ECCE workers, community members, District Education Officer and Block Development Officer about the implementation of ECCE programme. The results reflect that there is a need to upgrade infrastructural facilities and teaching learning material in ECCE centres. The DEO and BDO received the funds regularly for ECCE under SSA and ECCE programme in their regime is successful whereas ECCE workers stated that funds are not properly utilised and there are problems of health, food and educational facilities and they deal with the problems on their own. The parents and community members are satisfied with the implementation of ECCE programme in their area and stated that funds are properly utilised and adequate arrangements at ECCE centres in terms of infrastructure and other facilities has changed the lives of children in their area.

Key Words: SSA, ECCE Programme, ECCE centres, ECCE workers, Parents, Community, DEO and BDO.

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Introduction

Realising the crucial importance of rapid physical and mental growth during early childhood, a number of programmes to promote ECCE were started particularly after the National Policy for Children (1974). The existing ECCE programmes include: Integrated Child Development Scheme (ICDS) — a scheme where Central Government provides assistance to voluntary organisations for conducting Early Childhood Education (ECE) centres, Balwadis and Day-Care Centres. ICDS also provides assistance to pre-primary schools run by the state governments, Municipal Corporations and other governmental and non-government agencies, maternal and child health services through primary health centres.

The *Sarva Shiksha Abhiyan* for universalisation of elementary education also realised the importance of early childhood care and education for improving the enrolment and participation of children in schools. Government decided to support ECCE programmes through SSA activities and funding.

SSA now provides support to habitations not covered by the ICDS and wherever the state government desirous of starting a pre-school education centre in the formal primary school. Support from the *Sarva Shiksha Abhiyan* could be accessed through funds available under the head for innovative activity. In case of a new ICDS centre coming up in

such a habitation, the pre-school facility will necessarily have to work in conjunction with the ICDS.

A provision of up to ₹ 15,00,000 per year has been made for any innovative intervention including early childhood care and education. The elementary education plan has to have a plan for early childhood care and education. It also has to list the facility already created under the ICDS. The supplementary support for ECCE will always be in conjunction with the ICDS. Provision of honorarium for pre-school teachers, training of Anganwadi workers, activity materials, play items, etc., could be provided as support for ECCE centres.

Recognising the continuum of learning and development from 3-6 years, *Sarva Shiksha Abhiyan* would make all efforts to develop an integrated approach to meet the educational needs of the pre-school children. Some illustrative interventions could be strengthening pre-school component in ICDS by need-based training of Anganwadi sevikas, development of learning materials, setting up of Balwadis as pre-school centre, generating awareness on importance of early child development through advocacy programmes, organising training programmes for community leaders, providing for intensive planning for ECCE, development of materials for ECCE related activities, promoting convergence between the school system and the ECCE programmes.

The provision of ECCE as part of innovative interventions under SSA has been a subject of discussion for lack of importance attached to it and for its inappropriate qualitative and quantitative expansion but the statement would need a research base to justify the claim. The *Sarva Shiksha Abhiyan* realises the importance of pre-school learning and early childhood care and education and its role in improving participation of children in schools. In order to facilitate a greater convergence with the Integrated Child Development Services, efforts to strengthen them in the area of pre-school education have been made under SSA. Specific support is made available to existing ICDS centres from funds available under the head of innovative activity.

It has been discussed at various forums that ECCE has not been provided a due place which it deserves; instead it has been relegated to an innovative activity under SSA. Hence, the investigator felt the need to evaluate ECCE programme under the provision of SSA.

Objectives of the Study

1. To evaluate the ECCE programme with reference to infrastructural facilities, curriculum and teaching learning material and classroom organisation
2. To explore the views of district level and block level officials towards the implementation of ECCE programme.

3. To explore the views of community members and parents towards the implementation of ECCE programme.
4. To find out the views of heads of ECCE centres and ECCE workers towards the implementation of ECCE programme.

Research Questions

- Q.1 Is the existing infrastructural facilities, curriculum, teaching-learning material and organisation of classrooms, appropriate for the implementation of ECCE programme?
- Q.2 What are the views of district level and block level officials about the implementation of ECCE programme?
- Q.3 How community and parents view the implementation of ECCE programme?
- Q.4 What are the views of Heads of ECCE centres and ECCE workers about the implementation of ECCE programme?

Delimitations of the Study

1. The study was confined to Gurdaspur district of Punjab.
2. The present study was delimited to ECCE centres located in Pathankot and Dinanagar blocks only.
3. Block Development Officer, parents and community members of only Pathankot and Dinanagar blocks were included in the study. The study was further confined

to District Education Officer of Gurdaspur district of Punjab.

4. The study was confined to ECCE heads and ECCE workers of ECCE centres of Pathankot and Dinanagar blocks of Gurdaspur district of Punjab.

Sampling

There are 16 blocks in Gurdaspur district of Punjab. In the current study, the sampling frame includes all the ECCE centres located in Dinanagar and Pathankot blocks of Gurdaspur district of Punjab. Out of sixteen blocks, two blocks were selected. Out of two blocks, fifteen early childhood centres were selected from each block. A total of thirty early childhood centres were selected as sample for the study. Two ECCE workers were selected from each ECCE centre to make a sample of sixty ECCE workers. One parent was selected from each ECCE centre. Hence a total of thirty parents constitute the sample. Two community members were selected from the community where ECCE centre is located to make a sample of sixty community members for the present study. Block Development Officer from each of the two blocks and District Education Officer of the district was also incorporated in the study. As the respondents needed were required to express some views on implementation of ECCE programme, purposive sampling technique was used to draw the required sample from each strata.

Tools Used

1. Interview schedule for District and Block Officials, ECCE workers and Heads of ECCE centres, community members and parents was developed to study their views about the implementation of ECCE programme.
2. Observation schedule for ECCE centres was developed to gather information on infrastructural facilities, classroom management, curriculum and teaching learning materials and classroom processes.

Data Analysis

Descriptive statistics has been used to describe the main features of the collected data in quantitative terms.

Major Findings

1. The investigator found that in Pathankot block, 100 per cent of ECCE centres were located in urban areas and in Dinanagar block 60 per cent of ECCE centres were located in rural areas and 40 per cent in urban areas. In Pathankot, 80 per cent ECCE centres have pacca building structure and in Dinanagar, 70 per cent ECCE centres have pacca building structure. Fifty-six per cent of ECCE centres have adequate indoor space in Pathankot block and 60 per cent of ECCE centres have adequate indoor space in Dinanagar block. In Pathankot block, 27 per cent of ECCE centres have their own building whereas in Dinanagar

block, 25 per cent of ECCE centres have their own building.

2. The investigator found that in Pathankot block, 20 per cent of ECCE centres have small group seating arrangement and 80 per cent of ECCE centres have large group seating arrangement. In Dinanagar, 30 per cent of ECCE centres have small group seating arrangement and 70 per cent of ECCE centres have large group seating arrangement.
3. In Pathankot block, 24 per cent of ECCE centres have wall paintings as classroom interactive material, 33 per cent of ECCE centres have maps as classroom interactive material and 43 per cent of ECCE centres have charts as classroom interactive material. In Dinanagar block, 21 per cent of ECCE centres have wall paintings as classroom interactive material, 35 per cent of ECCE centres have maps as classroom interactive material and 44 per cent of ECCE centres have charts as classroom interactive material.
4. The investigator found that ECCE centres are run by government organisations. DEO of both the blocks stated that ECCE centres are run by the state government. Both the blocks have financial provision for ECCE programme under SSA. The blocks do not have any kind of collaboration with the NGOs. DEOs said that state provides guidelines for utilisation

of funds. DEOs of both the blocks agreed that ECCE programme is beneficial for the children. DEOs of both the blocks feel that National Council of Educational Research and Training (NCERT) can facilitate the ECCE programme in their district.

5. The investigator found that ECCE programmes are satisfactorily running in both the blocks. BDOs of both Dinanagar and Pathankot blocks utilised funds to initiate the ECCE programme. Both the blocks provide some training to block level functionaries with regards to organisation or implementation of ECCE programmes. BDOs of both Dinanagar and Pathankot blocks consider the provision of funds per year per district adequate for ECCE Programme under *Sarva Shiksha Abhiyan* (SSA). BDOs of both the blocks agreed that ECCE programme is beneficial for the children and feel that NCERT can facilitate the ECCE programme in their blocks.
6. ECCE centre is functional in both Pathankot and Dinanagar blocks. The investigator found that 86 per cent community members of Pathankot block and 80 per cent community members of Dinanagar block were aware about SSA. 70 per cent community members of Pathankot block and 81 per cent community members of Dinanagar block stated that funds are being provided to each block under SSA

for the development of ECCE. 70 per cent community members of Pathankot block and 62 per cent community members of Dinanagar block were satisfied with the functioning of ECCE centre.

7. The investigator found that in Dinanagar block, 27 per cent parents expect the pre-school centre to develop basic skills, 42 per cent parents expect the pre-school centre to provide free education facilities and 31 per cent parents expect the pre-school centre to provide free nursing facilities. In Pathankot block, 32 per cent parents expect the pre-school centre to develop basic skills, 39 per cent parents expect the pre-school centre to provide free education facilities and 29 per cent parents expect the pre-school centre to provide free nursing facilities.
8. In Pathankot block, 70 per cent of parents provide support to the child for better emotional development at the foundation stage and in Dinanagar block, 79 per cent of parents provide support to the child for better emotional development at the foundation stage. In Pathankot block, 90 per cent ECCE workers stated that the centre is useful for the community and in Dinanagar block all the parents agreed that ECCE centre is useful for the community. In Pathankot block and in Dinanagar block all the parents stated that they contribute towards the effectiveness of the centre in many ways such as resource generation in terms of funds and manpower.
9. Child Development Project Officer (CDPO) of both Pathankot and Dinanagar blocks admitted the availability of physical facilities, play material and equipments in ECCE centres. CDPO of both the blocks agreed upon the availability of work area/learning corners in the classroom, availability of setting/arrangement, material design and organisation of play activities. CDPO of both the blocks agreed that all the workers in their blocks are trained and for that training need of teachers are identified with reference to knowledge about child and pregnant women, providing proper knowledge of individual differences, providing adequate knowledge of nutrition.
10. In Pathankot block, 37 per cent of ECCE workers attended the training in 1991 and 63 per cent of ECCE workers attended the training in 2010. In Dinanagar block, 26 per cent of ECCE workers attended the training in 1991 and 74 per cent of ECCE workers attended the training in 2010. However before joining in Pathankot block, 66 per cent of ECCE workers attended the pre-service training and in Dinanagar block, 54 per cent of ECCE workers attended the pre-service training.
11. Both the Pathankot and Dinanagar blocks cater to under 6 years age

group. In both the blocks, all children spoke Punjabi at home and school. ECCE workers of both the blocks think that ECCE centres are necessary for children. In Dinanagar block, ECCE workers followed 8.00am to 12.00pm time schedule at ECCE centres and in Pathankot block ECCE workers followed 9.00am to 1.00pm time schedule at ECCE centres.

12. In Pathankot block, 58 per cent indoor activities and 42 per cent outdoor activities were organised at the centre by ECCE workers. In Dinanagar block, 63 per cent indoor activities and 37 per cent outdoor activities were organised at the centre by ECCE workers.
13. In Pathankot block, 27 per cent activities related to physical and motor development, 32 per cent of activities related to social and emotional development and 41 per cent of activities related to cognitive development are conducted by ECCE workers. In Dinanagar block, 38 per cent activities related to physical and motor development, 24 per cent activities related to social and emotional development and 38 per cent activities related to cognitive development are conducted by ECCE workers.
14. In Pathankot block, 40 per cent of ECCE workers used self made play material, 30 per cent of ECCE workers said that the quality of play materials was good and 30 per cent of ECCE workers said that the design/structure of play items were conventional. In Dinanagar block, 43 per cent of ECCE workers used self made play material, 37 per cent of ECCE workers said that the quality of play materials was good and 20 per cent of ECCE workers said that the design/structure of play items were conventional.
15. In Dinanagar block, 57 per cent of ECCE workers used work sheet to assess the development of children, 18 per cent of ECCE workers used children performance index to assess the children, 25 per cent of ECCE workers used participant observation to assess the children's development. In Pathankot block, 54 per cent of ECCE workers used work sheet to assess the children's development, 26 per cent of ECCE workers used children performance index to assess the children and 20 per cent of ECCE workers used observation to assess the children development.
16. In Pathankot block, for improvement of children behaviour, various activities are conducted by the ECCE workers and these activities relate to daily life requirements like proper adjustment and understanding with new environment. In Dinanagar block, 50 per cent of ECCE workers find that boys dominate group activities and in Pathankot block, 28 per cent of ECCE workers find that the boys dominate group activity.

Recommendations

1. All children should have access to the benefits of good quality early childhood care and education, especially from low income communities.
2. Build capacity of key stakeholders such as parents, ECCE workers, community members to deliver quality ECCE services.
3. Stakeholders committed to improving school readiness and educational outcome should invest in bettering the quality of early childhood education.
4. District Education Officers in all the districts need to see collaborative early childhood efforts as a vehicle for education reform as well as a foundation for universal ECCE.
5. Community-based 'Early Childhood Organisations' should be encouraged with specific proposals for partnership. Provide awareness of ECCE through sensitisation programmes for communities and stakeholders.
6. Develop guidelines for establishment, operation and management of ECCE centres.
7. Develop monitoring and evaluation tools to ensure quality ECCE programmes.
8. Strengthen intensive and extensive research in ECCE to enhance the quality of the programmes.

Suggestions for Further Research

1. A study of similar nature may be conducted with different variables and on larger sample size.
2. A study of qualitative nature may be conducted to understand the early childhood educators' inputs and their impact on children's preschool classroom experience.
3. Case studies of interventions and innovations in ECCE programmes across districts and states could be conducted.
4. A study of qualitative nature may be conducted to determine the type of strategies that are being implemented in ECCE programme to promote children's early learning.
5. A study may be conducted to assess the extent to which the early childhood educators engage children in language literacy, pre-numeracy and play way activities in their centres.
6. The longitudinal study to assess the effectiveness of ECCE programmes may be studied on the larger sample.

6

Gender Differences in Science and Mathematics Achievement at the Primary Level – A Case Study

Aiyaz Ahmad Khan*

Abstract

Academic achievement depends upon several factors. The present study focuses on gender differences in academic achievement. The aim of the study is to compare the achievement of boys and girls in science and mathematics at the primary level. The sample comprises 110 students (57 boys and 53 girls) from the affiliated schools of Aligarh Muslim University, Aligarh. The data was collected using two self-developed achievement tests. The collected data was analysed with the help of statistical techniques like Mean, SD and 't' value. The findings show that there is significant difference in achievement of boys and girls in science and mathematics at the primary level. The performance of boys is better than their girls in both science and mathematics.

Introduction

The future of the country rests on the shoulder of its children. These children would one day pave the path of progress and lift the country to the heights of development. Education is going to play a key role to turn these children into strong pillars. Education aims at making us civilised human beings, proper educational process is a passport to a good, comfortable and secure life (Arbot and Arunjo, 1996).

There are several factors which directly or indirectly affect the academic

achievement of the students. Unless we understand these factors, we cannot produce intelligent, interested and enthusiastic students. Academic achievement of the students of the urban schools was found significantly higher than those of rural schools (Dwivedi, 2005). The students from healthy school environment have significantly better academic achievement than the students from poor school environment. The classroom, environment and developmental factors play a major role in students' performance. The

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students' inner urges, the competency of the teachers, no physical distraction and contacts with like-minded colleagues makes a student more competent to succeed in life (Avinashilingam and Sharma, 2005). In spite of the best efforts made in schools to raise the abilities, capabilities and other personality traits of students, it is not possible for us to attain the optimum level of educational goal, i.e. all round development of one's personality. The family makes critical contributions to student achievement from pre-school through high school. When parents are involved in their children's education at home, they do better in school (Henderson and Berla, 2002).

Science and mathematics are amongst the two important subjects which are very useful for day-to-day life. These subjects develop not only logical thinking but also help in routine life of every individual. So science and mathematics have become a substantial and an integral part of our organised society. The aim of teaching science in the primary schools should be to develop proper understanding of facts, concepts, principles and processes in the physical and biological environment (Kothari, 1964-66). Whereas the basic purpose of science education at secondary level is to understand the nature of science, its processes, methods and scope, so that the students can use scientific method to solve their problems and develop scientific attitude (NCERT, 1988). Mathematics is a very useful

subject for most vocational and higher specialised courses of learning. In this world of today nobody can live without mathematics for a single day. Mathematics is intimately involved in every moment of a person's life. Right from human existence on this earth it has been a faithful companion to him. Ignorance of mathematics will be a great handicap in the progress of students in many other subjects, its study will benefit him/her to a great extent. Mathematics need to be a compulsory subject for the longer duration of education.

Need of the Study

National Achievement Survey of *Class V* (2012) reported no significant difference in academic achievement of boys and girls at national level and for Uttar Pradesh state. The similar kinds of findings were observed by Gupta, Sharma and Gupta (2012) on gender differences on the measure of academic achievement in adolescent students. However, Mahmood and Khatoon (2011) conducted a study on gender differences in schools of Uttar Pradesh and reported that there is significant difference between achievement of boys and girls. Thus, gender differences in academic achievement across states and subjects is not same. It is realised that academic achievement of boys and girls varies across area, medium of education, stages of education and universities or board. Here, an attempt was made to find out whether there is any difference in the achievement of boys and girls in science and

mathematics at primary level of Aligarh Muslim University affiliated schools which has an autonomous characteristic, separate board for examination and evaluation, and also has own procedure for admission and evaluation in different classes and courses.

Objective

The major objective of the study was to compare the achievement of boys and girls students in science and mathematics at primary level.

Hypotheses

Following hypotheses were formulated to achieve the objectives:

- There exists no significant difference between the achievement of boys and girls students in science at primary level.
- There exists no significant difference between the achievement of boys and girls in mathematics at primary level.

Sample

In order to carry out the above mentioned study, the investigator first of all prepared a list of all the schools affiliated to Aligarh Muslim University. There are seven (three each for boys and girls, and a special co-education school for blind) schools

affiliated to Aligarh Muslim University, Aligarh. Out of these seven, one boys' and one girls' school was selected through random sampling techniques. Blind school was not a part of target population as it is a special school. All the students of Class V were included in the study from these selected schools. The sample consisted of 110 students (57 boys and 53 girls).

Tools

The investigator developed achievement test one each in science and mathematics. Each test contains 25 items based on syllabus of Class V. The items were multiple-choice type having one correct answer carrying one score. The draft test was given to the teachers who are teaching at primary level to judge the validity of the items. The valuable suggestions were incorporated. So, in this way the content validity of the tests was established. The reliability of tools was established by test-retest method. The coefficient of reliability of science and mathematics achievement test was 0.73 and 0.83, respectively.

Analysis of Data

The collected data were systematically analysed with the help of statistical technique like Mean, SD and 't' value. The analysis is presented and discussed below:

Table 1: Mean performance of boys and girls in Science

| Group | N | Mean | SD | t' Value | Level of significance |
|-------|----|-------|------|----------|---------------------------|
| Boys | 57 | 11.98 | 2.86 | 2.27 | Significant at 0.05 Level |
| Girls | 53 | 10.34 | 2.07 | | |

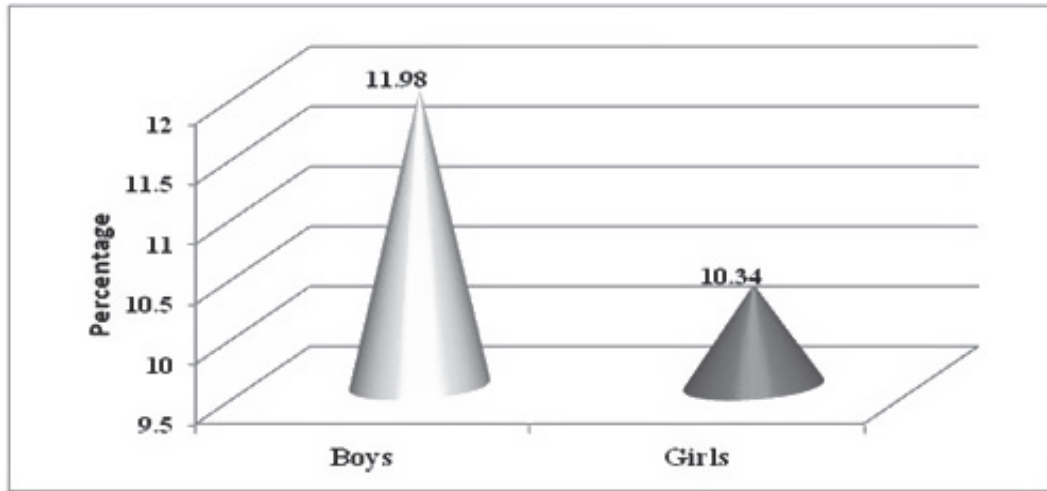


Figure 1: Graphic Representation of Mean Scores of Boys and Girls in Science

Science Achievement

Table 1 reveals the mean performance of boys and girls in science. The value of 't' is 2.27 which is significant at 0.05 level of confidence. The scores boys on science achievement test are greater than the mean scores of girls (Figure 1). It can be inferred that boys achievement is comparatively better than girls on science achievement

test at primary level. Thus the stated null hypothesis that there exists no significant difference between the achievement of boys and girls students in science at primary level is rejected. The finding is supported by the findings of Wang and Staver (1997), they studied the gender differences among Chinese students on science achievement.

Table 2: Mean achievement of boys and girls in Mathematics

| Group | N | Mean | SD | 't' Value | Level of significance |
|-------|----|-------|------|-----------|---------------------------|
| Boys | 57 | 12.68 | 3.72 | 3.06 | Significant at 0.01 Level |
| Girls | 53 | 9.32 | 3.06 | | |

Mathematics Achievement

Table 2 shows the mean achievement of boys and girls in mathematics. The value of 't' is 3.06 which is significant at 0.01 level of confidence.

It is apparent from mean scores of mathematics achievement test that achievement of boys is better than girls (Figure 2). It can be inferred that boys are comparatively better than

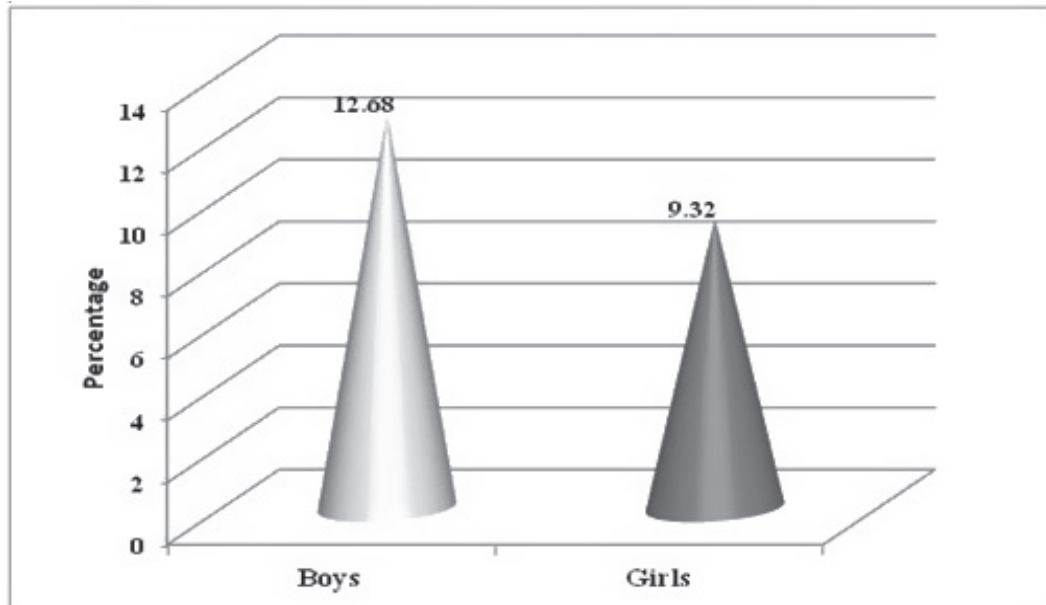


Figure 2: Graphic Representation of Mean Scores of Boys and Girls in Mathematics

girls on mathematics achievement test at primary level. Thus the stated null hypothesis that there exists no significant difference between the achievement of boys and girls in mathematics at primary level is rejected. Present study support the findings by Mahmood and Khatoon (2011) that achievement of boys is better than girls in mathematics. The findings of the study also support findings of Cambell and Beandry (1998), George (2003). However, the findings of National Achievement Survey Class V (2012), Skaalvik and Rankin (1994) reported that there is no difference of gender in mathematics achievement of boys and girls.

Major Findings

The findings of the study are:

- there exists significant difference in achievement of boys and girls in science at the primary level.
- there exists significant difference in achievement of boys and girls in mathematics at the primary level.

Conclusion and Suggestion

The study concludes that there is significant difference in science and mathematics achievement at the primary level. The outcomes clearly reveal that boys' performance is better than girls in both subjects, i.e. science and mathematics. The disparity in the academic achievement may be due to significant disparity of in socio-cultural practices status. Coleman et. al. (1966) and Jencks (1972) concluded that schools bear little influence on students' achievements

and home background has much more powerful influence. Coleman et. al. (1966) also reported that the social composition of the student was highly related to student's achievement. Thus the disparity in the results of schools can be attributed to the known fact that students of high socio-economic status can indulge in home coaching, enriched home environment such as tutorials and video programme, good library, computer facilities, good friends circle and better state of mental health while students of low socio-economic status can only hope for such privileges.

On the basis of students' performance there is need to relook at

the AMU schools learning processes. To improve the achievement of the students, diagnostic and remedial teaching should become an integral part of teaching-learning process. For this, the whole teaching community should be properly oriented and sufficient exemplar material should be made available. The teacher should try to use innovative methods and practices especially for girl students to enhance their achievement. Further, there is need for an in-depth study to know the reasons for differences in performance of boys and girls and also to provide necessary interventions, so that the gaps may be minimised.

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Integrating Assessment with Teaching-learning of Science: an Experiment

Shashi Prabha*

Abstract

Integrating assessment with teaching-learning of science provides information about students' existing ideas and to identify their learning gaps. It helps teachers to redesign teaching-learning experiences being responsive to their learning needs. Many teachers carry out a variety of assessment activities in the classroom during teaching-learning of science; however these are rarely used for formal assessment as recording each student's performance remains a problem. Some experiments on the design of assessment activities were tried out by integrating assessment with teaching-learning in a science classroom. Two such experiments are reported in this paper. Very simple and practical ways of recording students' performance are also presented. It was found that when assessment followed the flow of continuous dialogue and interaction with students, they moved beyond rote memorisation. These assessment activities helped students to focus more on what is to be learnt rather than worrying for their performance in paper-pencil test.

1. Introduction

The purpose of assessment is necessarily to improve teaching-learning process and materials (NCERT, 2013). For this, assessment needs to be student-centred and it should be integrated to enhance teaching-learning. When used in process of teaching-learning, it provides information about students' existing ideas and their conceptual

development. It helps teachers to identify their learning gaps and redesign teaching-learning experiences being responsive to their learning needs. Day-to-day teaching learning activities when used for ongoing assessment can motivate them to learn and trim down their stress. NCF-2005 views, "the belief that assessment must lead to finding learning difficulties and those difficulties can be remediated, is often

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very impractical and not founded on a sound pedagogic practice. Problems regarding conceptual development cannot and do not wait for formal tests in order to be detected. A teacher in the course of teaching-learning itself come to know of such problems by asking questions that make children think or by giving them small assignments. She can then attend to them in the process of teaching-learning by ensuring that her planning is flexible and responsive to learners and their learning.” It is important for teachers to realise the significance of dynamic engagement of students with the world through observing, inquiring, experimenting, discussing, listening, thinking and reflecting — both individually and with others in the process of their knowledge construction. Activities can be designed to assess students when they are engaged in the process of knowledge construction. Proficiency in observation, inquiry, prediction, experimentation, recording, explanation with reasoning and evidence, looking for cause-effect relationship, conclusion, interpretation, communication, application of understanding of scientific concepts in novel situations are important process skills of science. These proficiencies need to be assessed in the process of teaching-learning of science itself.

There is a lot of psychological data to suggest that different learners learn differently, and, hence, to test all learners through a written test of the same type in subjects after

subject is unfair to those whose verbal proficiency is superior to their writing skills, those who work more slowly but with deeper insight, or those who work better in groups than individually (NCERT 2009). Besides, only quantitative assessment does not help the teacher much in reflecting on teaching-learning strategies. Hollins and Whitby (1998) hold the view ‘there are a variety of strategies and opportunities for teachers to choose from in measuring the progress of different aspects of the science learning of individual pupils, some of which are more appropriate than others, depending on the area of science that is being covered and the age range of the pupils’. Plenty of such opportunities can be explored in a constructivist classroom. Prabha (2010) observes that teacher in a constructivist classroom designs and manages her activities in such a way that students are eager and ready to exchange their ideas. They are not afraid of being ridiculed. Teacher encourages her students to ask and share the thought processes going on in their mind. She assures her students that no question is silly one. Getting familiarised with students thought patterns helps her to help students in constructing their knowledge.

Several studies show firm evidence that innovations designed to strengthen the frequent feedback that students receive about their learning yield substantial learning gains (Black and William, 2006). Immediate feedback encourages

learners to engage themselves in teaching-learning process.

Many teachers carry out a variety of assessment activities in the classroom during teaching-learning of science; however these are rarely used for formal assessment to adjust the learning needs of students as recording each student's performance remains a problem. There is a need to evolve and maintain credibility in assessment in order to use students' performance in a meaningful way. Some experiments on the design of assessment activities were tried out by integrating assessment with teaching-learning in a science classroom. Two of such experiments are reported in this paper. Both of these experiments were tried out on the same sample and during teaching-learning of the same concepts. Very simple and practical ways of recording students' performance are also presented.

2. Research Design

The present qualitative study was carried out at upper primary stage during my field visit of three months duration in a residential school located in an urban village. As flexibility in design is one of the important features of qualitative research, experiments with the design of assessment activities were not rigidly planned, though I had some initial idea about it. It was planned that teaching-learning and assessment strategies would be modified depending upon the response of students. It was redesigned and steered in the light of emerging thinking

patterns of students. The experiment was carried out in entirely natural setting. Effort was taken to maintain classroom environment friendly by providing students descriptive feedback and being non-judgemental to their responses so that they could express themselves without any fear. As a broad framework, Fraenkel and Wallen (1996) description of five general characteristics of qualitative research studies were kept in mind for the present study.

Their description includes:

1. researchers collect their data in naturalistic settings (e.g., classrooms), by observing and participating in regular activities.
2. data are collected via words or pictures (not via numerical or quantifiable indicators).
3. processes (i.e., how individuals communicate with each other about a lesson) are as important as products (i.e., whether or not students obtain the correct answers to a problem).
4. most qualitative researchers do not start out with specific hypotheses; rather, they use inductive methods to generate conclusions regarding their observations.
5. qualitative researchers care about participants' perceptions; investigators are likely to question participants in depth about their beliefs, attitudes, and thought processes.

2.1 Research Questions

1. Can some assessment activities be designed by integrating with teaching-learning process to facilitate revelation of thinking process of students?
2. How can these assessment activities be recorded to get credible evidences of students' learning?

2.2 Sample

The sampling technique used in this experiment was purposeful sampling (Best and Kahn, 2010). Specifically, the experiments were carried out in Class VIII comprising thirty-three students during teaching-learning of the concept Chemical Effect of Electric Current. The school was situated in an urban village. It was CBSE affiliated and fully residential. The assumptions were that the representative sample could be useful in answering the research questions.

2.3 Method

2.3 (A) Evidence Based Oral Assessment

I had just joined the school and was not familiar with the name of each student of the class. I made a seating plan chart of the class on a paper and noted down name of each student taking help of the class monitor (i.e., row and column-wise who is seating where). This helped me to remember name of all students within a few days. Few multiple choice questions and short answer type questions to be asked during teaching-learning process of the concept were kept prepared. In

the beginning of this experiment, a tick or cross mark was put against the name of the student. However, there was a problem. I found that by carefully observing movement of my pen, some students were changing their responses. Putting tick marks required moving the pen only in upward direction while putting cross mark needed moving the pen twice for the two lines. So, I changed my strategy and started assessing their responses by recording in coded words as abc, bac and cab (one mark, half mark and zero mark depending how their responses were consistent with scientific explanations). Still there was a problem in experimenting with this design of assessment activity. There was a tendency among students to follow the response of the students who was academically stronger in the class. In order to handle this problem, such students were given opportunity to response later in the question answer process and a variety of open ended questions were asked. Their responses familiarised me with their thought patterns that helped me to identify the learning gaps of the students and then bridge those gaps with scientifically accepted explanation. However, it was ensured that all students were assessed a number of times during teaching-learning of the chapter that was spread over a week.

Findings

This activity kept the class alert and interested in learning. Observing assessment a routine activity, students

were not stressed and were motivated to participate in teaching-learning process. While asking questions, care was taken to listen to them attentively with encouragement and appreciation. By the time the chapter was complete, students were assessed several times without feeling any tension and I had a record of their marks without carrying piles of files.

So, even experimenting on the design of this simple looking assessment activity, I had to find ways and means to overcome the problem in recording their responses taking care of its reliability.

2.3 (B) Assessment of process skills of science by making students' thinking visible

Students were facilitated to perform following activity.

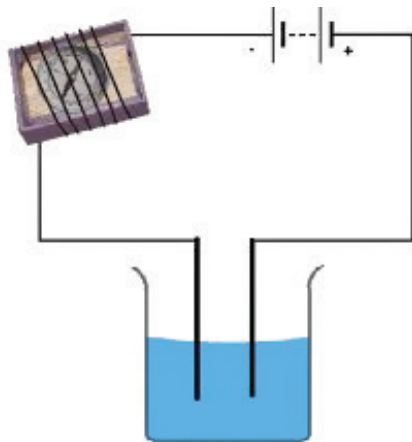


Figure 1

A teaspoonful of common salt and few drops of lemon juice were added to water taken in a beaker. Electric

circuit was completed using a battery of nine volt, a zinc plate, a copper plate, a coil of wire wrapped several times (5-10 times around a tray taken from inside of a discarded matchbox) as shown in Figure 1.

A small compass needle was kept inside the tray. The circuit was closed by making all connections. I found that students observed bubbles near the electrode which was very exciting to them.

Students were then asked, 'What did you observe in the activity?' A few of them replied that they observed bubbles near the electrodes. I asked the same question to different students. I got similar responses. In my attempt of eliciting ideas of all students and making their thinking visible to me, I modified my question and made it open ended – 'Observe the activity carefully; change the distance between electrodes; change the length of the electrodes immersed in water; think for two minute and just say whatever comes to your mind. What are the observations you are curious about? What can you tell me about the activity you observed? Each of you have to ask some question or say something related to this activity'. Offering such a wide choice encouraged students to open up. It was *an Aha moment* for me. Students started giving interesting and varied responses! Now the problem was how to record their responses so that I could relate thinking of each student with his/her conceptual understanding. Three students

volunteered to jot down the responses of students. While first volunteer was jotting down the response of one student, second and third volunteers were recording responses of second and third student, respectively. Again response of the fourth student was recorded by first volunteer. This way, there was sufficient time to record responses of all. Name of the student was also noted down against each response. Their responses comprised two to four lines. This exercise took me about twenty minutes.

I had finally a mirror in my hands reflecting thinking patterns about the activity of each student. Recording responses helped me to review what each student has already learnt and what s/he still needs to work on and improve.

While listening to their ideas, I was thinking how to redesign teaching-learning process to cater the learning needs of all.

Some of the questions asked by students were: 'Why did you add salt to water?' 'What will happen if more salt is added to water?' 'Why are bubbles coming out from water?' 'What will happen if zinc and copper plates are bigger?' 'What if only wires are emerged in the water and there is no zinc or copper plate in the experiment?' 'Why have you wrapped the wire several times over the magnetic compass box?' 'If we add vinegar instead of lemon juice to water, still deflection will be observed?'

Some of the questions that I asked were: 'If distance between the

electrodes are increased will there be more deflection or less deflection in the compass needle?' 'If number of turns of the wire over the magnetic compass increased, will there be more deflection or less deflection in the compass needle?' Students made different predictions. Two groups having contradicting ideas over these issues came forward. I facilitated them to perform the activity again by changing these parameters and observe and conclude on their own.

Their responses included description of the activity and expression that they learnt 'electrical current can produce chemical effect'; 'bubbles are coming out due to chemical effect of electric current'; 'air is dissolved in water'; 'this is a chemical change'; 'some chemical reaction is taking place in water'; 'water is good conductor of electricity when a little salt is added to it'.

As questions asked were beyond what was given in the textbook, students had to think and express themselves in their own words to give answers.

This interaction helped students to use technical words related with the concept in proper perspective, like electrode, good and bad conductor of electricity, chemical effect of electric current, coil. One student could not name compass needle and called it electromagnet. I enquired, 'Do you think electromagnet and magnetic compass are same thing?' 'Have you made an electromagnet in your previous

class?’ In the next period I facilitated him to make an electromagnet and observe its magnetic properties. He could then differentiate between an electromagnet and compass needle.

Thus, one to one interaction in a class of thirty-three students helped me to identify their existing ideas.

Findings

As the situation in the class unfolded, the lesson was redesigned to adjust the emerging information about thinking patterns and learning needs of the students. Teaching-learning was shifted from pre-determined set of learning outcomes to one that provided students opportunity to apply their reasoning and understanding. Students were involved in their own learning by giving immediate feedback. It made them comfortable in sharing their ideas. Students were given opportunity to form hypothesis, perform the activity again to check their hypothesis. Repeating the activity facilitated them to monitor and assess their own learning. They were allowed to inquire, predict and analyse their predictions in the light of their observations. They were facilitated to construct their own explanation of their observation. It provided me with insight into students learning progress and helped me to make informed choices about further course of teaching-learning. All students got equal opportunity to participate in teaching-learning process. They organised their thoughts to express themselves. I got hint what they

have learnt and what they still need to learn. It revealed me students’ status of conceptual development. Assessment followed the flow of continuous dialogue and interaction with students. Students moved beyond rote memorisation. From this activity, it was found that asking only one question to the whole class could not elicit ideas of all students. When the question was made open ended and I listened to them without being judgemental, keeping atmosphere in the classroom relaxed, students had confidence that they will not be ridiculed and therefore expressed themselves freely.

3. Discussion

Current practice of frequent paper-pencil test in the name of formative assessment should be minimised by exploring some innovative ways of assessment. Many times it detracts from day-to-day process of learning. Teachers assess continuously during teaching-learning process. However, due to lack of evidence, these assessments are not recognised. Many creative, novel and practical ways of assessment of various parameters of learning science can be designed by the teacher despite the pressure of completing the syllabus, if they start feeling that they are empowered to do so. A wide range of assessment activities can be interwoven in the process of teaching-learning itself and modality of its recording can be tried out. Moreover, having positive attitude and belief towards teachers’

innovative practices in the classroom and giving the necessary support by the administration is very important.

Keeping formal record of all assessment is unnecessary, however recording assessment that can provide direction to further teaching-learning process can be helpful. Recording of the data done during assessment activities can reduce number of paper-pencil tests in the school as well as stress of students. It can also reduce demand on teacher's time and efforts to prepare meticulous records. The precious time saved in this way can be utilised for enriching teaching-learning process.

Participation in innovative assessment activities can keep students engaged in learning. Such assessment activities can help them to focus more on what is to be learnt, rather than worrying for their performance in the paper-pencil test. Students can enjoy learning with new flavour in classroom processes.

Teachers need to realise that students have a range of background knowledge and varying motivation to learn. Therefore, assessment needs

to be flexible and the manner and modalities must vary from situation to situation and sometimes from one group of students to another (NCERT, 2012). A number of capacity building programmes need to be organised to help teachers use multiple modalities of process-based assessment in science.

Qualitative research does not bring out 'everlasting truth' because the context is continuously changing. This study can be replicated on larger samples and by integrating with teaching-learning of other concepts. Exactly similar responses cannot be expected in other situations or even with the same classroom at some other time by the same investigator. However, many such experiments can be explored. It is suggested that instead of a rigid lesson plan, a framework of few key ideas should be designed to provide student-centred environment for collaborative discourse and reflections and integrated assessment. Carrying out a range of assessment activities in the class can cater to the diverse learning needs of all students.

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Learning Mathematics in Early Grades

T.P. Sarma*

Abstract

Children have ideas of many things. Sometimes they can express and sometimes they cannot express because of fear and phobia in their mind. If we give them freedom and listen to their words and encourage them then they can learn many new things with their limited understanding. In this article the author has tried to communicate the experiences which were gained by conducting early mathematics activities with the children of Class I of Kendriya Vidhyalaya Primary School, NCERT Campus, New Delhi.

Introduction

Mathematics is an abstract subject. If we start teaching mathematics with concrete objects and ask them to connect with daily life situations in the beginning of the early primary classes, this may help the understanding of different concepts easily. *National Curriculum Framework (NCF) 2005* with regard to school mathematics says that (i) Children should learn to enjoy mathematics rather than fear it. (ii) Mathematics is more than formulas and mechanical procedures. (iii) Children see mathematics as something to talk about, to communicate through, to discuss among themselves to work together and soon. (iv) Children pose

and solve meaningful problems. (v) Children use abstractions to perceive relationships, to see structures, to reason out things, to argue the truth and falsity of statements. (vi) Children understand the basic structure of mathematics: arithmetic, algebra, geometry and trigonometry, the basic content area of school mathematics, all offer a methodology for abstraction, structuration, and generalisation. (vii) Teachers should engage every child in class with conviction that everyone can learn mathematics. Also it says in *Guiding Principles* that (i) connecting knowledge to life outside school, (ii) enriching the curriculum to provide for overall development of children

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rather than remain textbook centric, (iii) making examination more flexible and integrated into classroom life and, (iv) nurturing an over-riding identity informed by caring concerns within the democratic polity of the country. Nathan Isaacs and Piaget J. believe true or living learning originates from the child and indeed directly from some of her/his stronger interest and drives. Researches also suggest that (i) Children learn mathematical concepts more slowly than we realise. They learn by their own activities. (ii) Although children think and reasons in different ways, they all pass through certain stages depending on their chronological and mental ages and their experiences. (iii) We can accelerate their learning by providing suitable experiences, particularly if we introduce the appropriate language simultaneously. (iv) Practice is necessary to fix a concept once it has been understood, therefore practice should follow, and not precede, discovery. (*Schools Council Bulletin*, 1972).

In order to understand how children learn mathematics in early years, we observed children doing activities, discussing mathematical ideas and how they relate these to everyday life situations.

Activity 1

Objective: To understand the mathematical understanding of children as used in daily life situations.

Material required: Counters of various things like straw, sticks, beads, wooden pieces (small pieces of wooden of different geometrical shape), plastic counters.

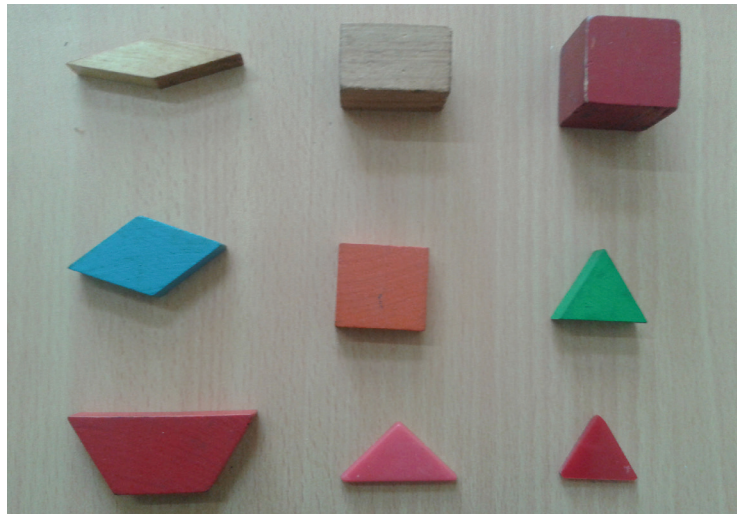


Figure 1: Objects from Mathematics Kit

Students: five (Viz. Aryan, Akansha, Aishwrya, Manisha, Sibham)

I asked all the students to make a circle and sit on the floor. All the counters were given to the children. I asked them to make whatever they like with the help of given counters. All the children started to handle objects (straw, sticks, etc.). Sibham wanted to have all the counters with him. But I told him to take as much as required and not all. Aryan made different things with the help of sticks.

I asked him what those things were. Then he told me that he has made '1', 'A', 'stair', 'jail' with the help of sticks. I asked why these were 1, A, stairs, etc. Then he told me that they look like 1, A, stair, etc. He also kept some of the beads in a straight line and along this line he put some sticks. I asked him what that was. Then he told me that beads were coaches of the train and side sticks were railway line.

Aishwarya also made something but she used only wooden pieces of material. When I asked what were those things then she told that those were bed, house, flowers, buildings. Then I asked her why those were bed, house, flower, building, etc. She was silent for a moment but started describing the shapes of bed, house, flower, building, etc.



Figure 2: A child is constructing building

Sibham's case was different. He wanted to grab all the material and

was talking with Aryan frequently. He was asking Aryan what he had made. I asked him to think individually and he finally made a shape. I asked him what that was. Then he told me that was a bullock cart. I asked how it looks like bullock cart. Then he explained the shape and its different parts. Sibham also made a shape like bangle with the help of counters.

Manisha was not doing anything. She was just holding some counters and material with her. I asked her to make something as per her liking. Slowly she started making and she made three different shapes. She told that those were flower, garland, and building. I asked her why those were like flower, garland, building. Then she described flower, garland, and building, etc.

Conclusion: this activity suggests that children see and perceive daily life objects in terms of shapes, sizes, proportions, etc.



Figure 3: A child is working with wooden blocks

Activity 2

Objective: counting with the help of objects.

Materials required: counters of different shapes and colours.

Students: five (Viz., Aryan, Akansha, Aishwarya, Manisha, Sibham)

I asked children to play with counters and gave each of them 10-20 counters. They first started looking at them. After a while I asked them to make whatever they liked and count the counters. Initially, there was hesitation but after some time they started making something. Aryan made a line. Then I asked him why he made a line, he told me that if he arranged the counters in line it becomes easy to count. Then I asked him to count and he counted the counters like one, two, three, etc. and he counted total eight counters in that line. He also made light and I asked him why that was light. Then he explained that light has different colours and when I asked him the total number of counters required to make light. He counted the counters like one, two, three, four, etc. and counted to seven.

Akansha was not able to do anything with the help of counters. She was just sitting with the children. But later on I taught her how to count with the help of counters. First I taught her to count ten counters like one counter, two counter, three counter, four counter,....., ten counter. I repeated this activity twice and thrice with her. After that I asked her to count with

the help of counters and slowly she started counting and counted up to ten counters. Then again I taught her to count up to twenty counters and encouraged and motivated her to start counting without fear in mind. Then she counted slowly twenty counters.

Manisha counted the counters keeping them in serial order. But she was speaking very less during the activity. But counting was no problem with her. She could easily count up to twenty.

The child Sibham was very good. He knew to count up to twenty easily. Sibham made objects like stars, sweets, garland, and train with the help of counters. He was very frank in the discussion. When I asked why these objects look like stars, sweets, garland, and train, he told that these objects look like stars, sweets, garland, and train, etc.

Conclusion: children count objects by keeping them in different order and sequence. This helps children in developing understanding of numbers and relating numbers to objects.

Activity 3

Objective: to make one-one correspondence with objects

Materials required: counters of various things like straw, sticks, wooden pieces (of different sizes), plastic counters.

Students: three (Viz. Aryan, Aishwarya, Harshit)

I asked the children Aryan, Aishwarya and Harshit to first count

the counters. Aryan and Harshit counted the counters easily up to thirty. But Aishwarya could count up to twenty. Then I asked these children to make one to one correspondence of the different objects. Aryan and Harshit did it. But Aishwarya just started counting the sets of counter taking one at a time. I further asked children to match one straw with one wooden piece, two straws with two wooden piece, three straws with three wooden pieces, etc. Aryan and Harshit performed the task easily and still Aishwarya could not do but she was mixing all the counters together and was counting. When I asked Aishwarya why she was not able to do one-one matching, she was not able to answer but she was trying to say something and was still counting the objects like one, two, three, four, five, six, seven, etc.

Conclusion: this activity suggests that children have understanding

of rote counting but they take time to correlate numbers with objects. Sometimes they take time to follow the instructions or we are not able to communicate in the language while the children understand.

Activity 4

Objective: to write a number and count the same number of objects.

Materials required: counters of various things like straw, sticks, wooden pieces (of different sizes), plastic counters.

Students: three (Viz. Aryan, Aishwarya, Harshit).

I asked Aryan to write any number. Then he wrote 12, 14 and 7 and I told him to count that much of counters. He started counting and counted more than the numbers written. Then I asked him to count slowly, he counted the required number of counters. Harshit was asked to write numbers and he wrote 15, 11 and counted

the same number of counters. Likewise, Aishwarya was also asked to write some numbers like 10, 9, 7 and count the same number of objects (counters) and she also did it perfectly. Aryan and Aishwarya counted the seven objects each which were made us of different materials altogether. Then I asked them since there



Figure 4: Children are counting with the help of objects

were different counters (objects) they counted what difference did they notice? They were silent for some time. After that they replied that though the counters were different but they were same with respect to numbers.

Conclusion: children have understanding of numbers and they can count the required number of objects if we give them time to think and do.

Activity 5

Objective: to make any object (shape) as per children's choice and to count the number of objects in that shape.

Materials required: counters of plastic, wooden (different geometrical shape), sticks.

Students: six (Viz. Aryan, Akansha, Aishwarya, Manisha, Sibham, Muskan)

As in other activities, the students were asked to make a circle and sit on the floor. I too sat along with the children. I gave them counters and asked them to make objects according to their choice. Also I gave one more task, i.e. to count the counters required to make that particular shape (object).

Aryan made a shape. I asked him what the shape was. He told me that it was a train. I asked him why that was a train. Then he explained that as the train has different coaches. Like these small pieces of counters represent coach and the line made up by the stick represent railway line. I also asked him to count the pieces required to make coaches of train and railway line. Then he counted the total

coaches 34 which were represented by 34 plastic counters and total sticks required to make railway line, i.e. 17. Aryan's counting was perfect.

Akansha was not able to make any other thing except A. I asked her how many pieces of counters were there in A. She counted and told me two. But there were total 4 pieces including sticks and counters.

Aishwarya made number of shapes like lotus. I asked her to count wooden pieces needed to make the lotus. She counted the total pieces around 24. But when I counted the pieces were 25. After that she again counted the pieces and reached up to 25. Aishwarya made some more shapes. I asked her what those were and how many pieces of objects were there. Then she told me that they were earthen lamp and there were three pieces of objects in each lamp.

Sibham made a shape. I asked him to count the number of wooden pieces needed to make that shape. He could not count properly. He counted up to 6. Thereafter, he started saying seven, nine and eleven. He also made a shape and I asked him what was that. Then I told him to count the number of objects required to make that object. He tried to count the pieces.

Manisha made some shape with the help of wooden pieces. I asked her what those shapes were. She told that those pieces were flower, garland. I asked her how many pieces were there in those shapes. She counted perfectly but there were very few pieces which were not more than 10.

Muskan came to the group first time. But she was very open and after seeing the activity done by children she understood the process and made some shapes. I asked her what those shapes were. She told me that those were flower, garland. She also counted the objects properly.

Conclusion: this activity suggests that almost all the children can make something as per their choice if we ask them to do so but some of them can count the number of pieces and some cannot. But all of them try to count the number of objects required to make the shape. These activities helped children to build some counting process in their mind by making shapes.

Activity 6

Objective: count the numbers and correlate with the objects.

Materials required: counters of various things like straw, sticks, wooden pieces, plastic counters.

Students: six (Viz. Nikesh, Keshav, Nikhil, Amisha, Akansha, Nikhil)

I asked the children one by one to count the numbers. The process was first started by Nikesh. Nikesh counted up to 10 clearly and after that there was problem, i.e. he could not count more than 10. Keshav counted only up to 10. Nikhil counted up to 39 and after that he could not count. Amisha counted only up to 10. Akansha counted up to 10. Nikhil counted up to 20 very easily.

Next I asked the children one by one to do counting for the object by saying the number aloud while counting. Nikhil did not correlate the object while counting. Nikesh could correlate the object up to 14 but after that he could not correlate the object while counting. Keshav had problem in correlating the objects while counting. Nikhil counted objects but could not correlate with the number and sometimes he was picking up 2-3 objects at a time. Akansha counted well up to 20. Then I gave her some counters to count but she was not able to correlate the objects with given numbers. Moreover she was impatient. She was just sitting and not properly handling the objects. Rather she was throwing the counters to Amisha. I told her to count the objects slowly. Then she tried to count properly and took some time to correlate with the numbers.

Conclusion: some children are good in rote counting but they have problem in rational counting. If children do this type of activities, their ideas regarding the rational counting may be enhanced and it may help in understanding of numbers and in counting different objects in daily life.

It was found that children learn through mistakes but we should not tell them immediately that they are not doing correctly. Rather we should show them different approaches through which they can rectify their mistakes. For example, in addition sums they may make mistake and with the help of concrete or semi concrete

objects those addition facts can be explained. We found that if children can't understand some concepts like carrying and borrowing, then we can take the help of concrete material and help children understand. We found

that an activity helps child to become friendly with the teacher and it helps the interaction among the children. The fear and phobia is also removed and their interest towards subject also increases to some extent.

Acknowledgement

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Folk Songs as a Tool for Teaching EVS in the Context of Assam

Tulika Dey*

Abstract

Music can be used to provide an introduction to, and stimulate interest in, subjects across the curriculum. There is a growing need to integrate arts in the education system and this has been repeatedly debated, discussed and recommended as we face the danger of losing our unique cultural identity and it also helps focus a learner's attention. In this endeavour, in the State of Assam, an exercise was done among a group of students to generate awareness on issues of environmental degradation and ways to tackle these problems through folk songs. They could relate to the cause and effects of the environmental degradation much easily and were sensitised.

Introduction

The need to integrate art education in the formal schooling of our students requires urgent attention if we are to retain our unique cultural identity in all its diversity and richness (NCF-2005). For decades now, the need to integrate arts in the education system has been repeatedly debated, discussed and recommended and yet, today we stand at a point in time when we face the danger of losing our unique cultural identity. One of the reasons for this is the growing distance between the arts and the people at large.

It has been observed and established that music is an enjoyable way to provide the base of prior knowledge that is so critical to learning. Music can be used to provide an introduction to, and stimulate interest in, subjects across the curriculum. The use of music in the classroom is consistent with theories of multisensory learning. There is a growing interest in music integration, as published studies show the positive effect of music on the mind. Studying music is said to be able to raise students' test scores, improve their grades, and make them better people (Peterson, E., 1998).

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Research suggests that the more senses we use, the deeper and broader the degree of learning. Teachers are encouraged to use auditory, visual, kinesthetic and tactile modes to supplement the learning experience. While music is obviously an auditory activity, the kinesthetic, visual, and tactile modalities can be activated via clapping, dancing, and instrument playing. Music can help focus a learner's attention. It is easier, and a lot more fun to rehearse song than text! Music and song stimulate creativity and foster a positive attitude towards school (Harris, 2002).

Folk music can be a tool to teach young minds content areas as they participate freely in their multi-coloured expression. The teaching then is indirect, it is completely non-threatening, and in fact it is fun; and students seem to learn best in that context anyway. Folk music can use in almost any area of the curriculum without ever mentioning its name.

Folk music spans the entire range of human experience, emotion and expression. People are united by its simple ability to 'strike a chord' of common feelings. It allows us to share our good times and our hard times, our pleasures, joys and sorrows, our deepest concerns and our most light-hearted frolics. Folk music was the first music, and has always been a necessary ingredient in our lives. It serves to excite us, to anger us, to make us laugh and to make us love.

In the State of Assam, an exercise was done among a group of students

to generate awareness on issues of environmental degradation and ways to tackle these problems through folk songs. Various popular folk song tunes were taken and lyrics written to create awareness on these issues. These made the students carefully listen to the original folk song to follow the rhythm and tune and sing the folk songs. This exercise in a way helped the students to be acquainted with their own culture and rehearse them and in the process keep their cultural identity intact. The second benefit derived was that, they could relate to the cause and effects of the environmental degradation much easily and were sensitised. This also generated in the children an interest to listen to the folk songs and bring out their creative minds to write lyrics for other issues related to environmental degradation.

Methodology

To try this out, find a song or a tune which relates even just a little to your subject, and just start singing. A few ideas are floated in this regard, where one might integrate folk songs with the curriculum, which one can implement in their own context. Do this regularly and then wait and watch the benefits: give your students a few minutes of folk music every day, let them get accustomed to it, go exploring with them, find out how rich and full and varied and moving their own cultural identity can be, watch how they relate to some things and not others, how they learn to love it and reflect on

it and express themselves through it; and then you'll see them doing better in math, reading, science, relationships, whatever.

Write the lyrics to a favourite folk song on a big chart and after singing it, have the students point out certain words. Let the students sing the tune several times while the students follow the lyrics on repeated readings. Simply using a lighthearted folk song as your reading text will encourage the child to engage in the classroom. Then very

cautiously put the key concepts of EVS in the lyrics and try singing in the same tune. Following is an example of Assamese devotional folk songs based on teachings of *Quran Sharif*, 'Zik'r songs'. *Zik'r*s are melodious combination of Sufi and Vaishnavite culture. (How *Zik'r* is sung? It is like a *qawaali*. There is a lead singer and chorus. The chorus party echoes the lead singer and refers to him as 'saheb' in the song). The concept to be transacted is 'Use of Water'.

| <i>Original folk song</i> | <i>The contextualised song</i> | <i>Meaning</i> |
|--------------------------------|---------------------------------|---------------------------------------|
| <i>Saheb jai agate</i> | <i>Paniye pranir pran</i> | Water is the life of living beings |
| <i>Hoi saheb hoi! (2)</i> | <i>Hoi saheb hoi! (2)</i> | Yes Saheb Yes! |
| <i>Bhakat jai pasote</i> | <i>Panit hol pradushan</i> | Water is polluted |
| <i>Hoi saheb hoi! (2)</i> | <i>Hoi saheb hoi! (2)</i> | Yes Saheb Yes! |
| <i>Hai Hai ooi Sonai</i> | <i>Hai Hai ooi</i> | Alas Alas o dear! |
| <i>nui parote Gharei</i> | <i>Pani bine aai jibon</i> | Life without water |
| <i>Alla rahamar</i> | <i>Nimishate nirbapan Tumi</i> | Will perish in a moment |
| <i>girihot</i> | <i>aamar jibon ooi Tumi</i> | You are our life |
| <i>Tumi allahar saheboi</i> | <i>aamar jibonor dhan. Pani</i> | You are the wealth of our life |
| <i>Jodi kora dariya paar</i> | <i>thake aakashat</i> | Water is in the sky |
| <i>Hoi saheb hoi!</i> | <i>Hoi saheb hoi!</i> | Yes Saheb Yes! |
| | | |
| <i>Sukur baarar beliya</i> | <i>Pani thake batahat</i> | Water is in air |
| <i>Hoi saheb hoi! Hai</i> | <i>Hoi saheb hoi! Hai</i> | Yes Saheb Yes! |
| <i>Hai ooi</i> | <i>Hai ooi</i> | Alas Alas o dear! |
| <i>Dupar chai dariya</i> | <i>Pani thake bhugarbhat</i> | Water is at the interior of the earth |
| <i>Saheb dhukal buli ulal</i> | <i>Gos-birishar patat Hai</i> | Water is there in trees and leaves |
| <i>Hai Hai ooi</i> | <i>Hai ooi</i> | Alas Alas o dear! |
| <i>Allaher rahamar girihot</i> | <i>Tumi aamar dehat ooi</i> | You are in our bodies |
| <i>Tumi allahar saheboi</i> | <i>Tumi baaru nuhuwanu kot?</i> | Where you are not there? |
| <i>Jodi kora dariya paar</i> | <i>Paniye pranir pran</i> | Water is the life of living beings |
| <i>Hoi saheb hoi!</i> | <i>Hoi saheb hoi!</i> | Yes Saheb Yes! |

| | | |
|--------------------------------|--------------------------------|-------------------------------------|
| <i>Ulambare kapur</i> | <i>Panit hol pradushan</i> | Water is polluted |
| <i>Hoi saheb hoi!</i> | <i>Hoi saheb hoi!</i> | Yes Saheb Yes! |
| <i>Hai Hai ooi</i> | <i>Hai Hai ooi</i> | Alas Alas o dear! |
| <i>Gate meli dile</i> | <i>Panit hol pradushan</i> | Water is polluted |
| <i>Hoi saheb hoi!</i> | <i>Hoi saheb hoi!</i> | Yes Saheb Yes! |
| <i>Hai Hai ooi</i> | <i>Hai Hai ooi</i> | Alas Alas o dear! |
| | | |
| <i>Saheb mur</i> | <i>Pani bine aai jibon</i> | Life without water |
| <i>biheste gole</i> | <i>Nimishate nirbapan Tumi</i> | Will perish in a moment |
| <i>Allahar rahamar girihot</i> | <i>aamar jibon ooi Tumi</i> | You are our life |
| <i>Tumi allahar saheboi</i> | <i>aamar jibonor dhan. Hoi</i> | You are the wealth of our life |
| <i>Hoi saheb hoi!</i> | <i>saheb hoi!</i> | Yes Saheb Yes! |
| <i>Hai Hai ooi</i> | <i>Hai Hai ooi</i> | Alas Alas o dear! |
| <i>Jodi kora dariya paar</i> | <i>Paniye pranir pran</i> | Water is the life of living beings. |

(The contextualised song has been coined by Mr. Netra Gogoi, DIET, Sonari, Assam during a workshop for development of such materials)

Following is another example of an Assamese Goalpariya Lokageet from the erstwhile Goalpara District of Assam. The concept to be transacted is 'Soil Pollution and Plastic Pollution'.

| <i>Original folk song</i> | <i>The contextualised song</i> | <i>Meaning</i> |
|------------------------------|-----------------------------------|-------------------------------|
| <i>Diine Diine</i> | <i>Diine Diine</i> | With every passing day |
| <i>Khasia paribe</i> | <i>Baribha lagise</i> | there is increase of |
| <i>Rangila dalaner maati</i> | <i>Maati pradushanar matra he</i> | level of land pollution |
| <i>Gosaiji kon ronge</i> | <i>Sunachun moinahat</i> | Listen o children |
| <i>Bandishen ghar misa</i> | <i>Bajarrar kirtim saar,</i> | artificial manure from market |
| <i>Misa danda bade</i> | <i>Kit nashak aaru</i> | Pesticides and |
| <i>Gosaiji kon ronge</i> | <i>Acid barashunar paara</i> | From acid rain |
| <i>Haarer ghar khani</i> | <i>Plasticar begburu</i> | the plastic bags |
| <i>Chamer chauni</i> | <i>Aati anisthakaari</i> | Are very hazardous |
| <i>Bande bande taar jora</i> | <i>Maatite milieu najay.</i> | They do not mix with the soil |
| <i>Aar tahar tole</i> | <i>Saa nijut basar dhari</i> | For 100 million years |
| <i>mayura mayuri</i> | <i>Biyojan nahay</i> | it does not decompose |
| <i>Shunye uraye taala</i> | <i>Tenekoie paari roy he</i> | It lies as it is |
| <i>Gosaiji kon ronge</i> | <i>Sunachun moinahat</i> | Listen o children |
| <i>Baalya na kaal gelo</i> | <i>Aai bidh padartha</i> | This thing |

| | | |
|--------------------------------|-------------------------------|--------------------------------|
| <i>Hasite khelite</i> | <i>Bababar karute</i> | while using |
| <i>Joubon kaal gelo ronge</i> | <i>Sabadhan hoba nischoy,</i> | be careful |
| <i>Aar bridho na kaal gelo</i> | <i>Dustbinat bharai</i> | Put them in a dustbin |
| <i>Bhabite bhabite</i> | <i>Ekeloge jamai</i> | together |
| <i>Guru bhojibo kun kale</i> | <i>Duroit puti pelaba</i> | in faraway place, put in a pit |
| <i>Gosaji kon ronge</i> | <i>Sunachun moinahat</i> | Listen o children |

(The contextualised song has been coined by Mrs. Charu Devi, Teacher, Mangaldoi Town Girls' H.S. School, Mangaldoi, Assam during a workshop for development of such materials. Visit www.evsandassam.org for the video of the contextualised song.)

Similarly, other folk songs can also be used for different concepts in EVS, viz. solid waste management, bio diversity, natural resources, etc.

Conclusion

It only takes doing these and other activities once, and then they will always be a part of teaching; and the real beauty of it is that many skills are being developed simultaneously. The important trick is to find good songs, good materials which are stimulating for the students. The good stuff is there. It will take a little effort to find but once you find the jewels, they are there forever! Students in turn can add to this Pandora's Box.

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Teaching and Learning with Collections from the Surroundings

Romila Soni*

Abstract

Activities and games with collections encourage children to think, explore and create and also build a basis for important skills for later learning. Our children are surrounded with a world where they can explore and discover objects which will help them in scientific inquiry. This would be possible only when we allow our children to explore, investigate, understand and learn about their immediate world. Collections help children in scientific inquiry and information. These can be very helpful where children can use and develop other important skills such as matching, sorting, exploring as well as they learn to work with one another.

How well I remember my field visit to a school and teaching third grade students. I used to teach environmental studies (EVS) to my students through lots of activities and games. I found that they were hardly taught through activities and games and whenever they were given activities using any material, they were very much engaged and involved. Otherwise they would not find the class interesting, they used to fight with each other. Many children were found throwing temper tantrums. Four or five of them were always out of their seats. Four to five children were always there asking permission to go to washroom. But the moment

I used to enter in a classroom, they used to wish me in a cheerful voice and immediately question, “Madam, what are you going to do today?” (“*Ma’m, aaj kya karaaoge?*”)

I never faced the classroom chaos. As I knew the trick to handle them. They wanted to talk to me for few minutes, a small activity before I could actually begin my lesson. And then they used to sit quietly, listen to me and then ask me several questions. My pre-lesson activities were mostly related to the lesson and my students were smart and clever enough to understand that. I used to bring no-cost materials and collections from the nature to make their lessons lively and

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interesting. Few of my students asked me one day, “Mam, do you do these games before starting the lessons to make our learning joyful?” ; “*Aap hume maje bhi kaarete ho aur padha bhi dete ho*”. I was so contented that day. These simple activities with collections had caused this major transformation. Although these materials are low or no-cost and from nature but children were so happy and curious to look at, touch and do the activities in the classroom. It was the use of no-cost collections from nature!

Collections in the Classroom

On one particular day, I took my students outdoors in the school ground and encouraged them to look around and observe different types of leaves. I was amazed to see that the students used to come out during their recess and observe leaves. I also gave them magnifying glass and divided them in groups so that each student can get the experience. We had a small bag in which we collected one sample leaf of each type. After that we sat on a ground and did our ‘circle time activity’, i.e. discussion on different types of leaves. Each child participated and then we played a famous game on plants: “*Ek budiya ne tha boya dana*”. Children were so excited and they kept on asking, “*Mam kal bhi bahar layoge?*”; “*Kal kis par baat cheet karenge?*”

During the discussion with children, we discussed about the difference between different types

of leaves—their smell, texture, size, shape, colour, edible or not. Children learned new vocabulary such as rough-smooth. They also learnt about some uses of leaves and plants. After discussion in circle time, I gave each child a chance to ask questions related to leaves and plants. Then they themselves started talking about their favourite green vegetables and the reasons for being the favourite vegetable. After coming back to the classroom, they did ‘leaf printing’ in their notebooks and wrote few lines underneath.

I randomly divided the group into smaller group of three to five children. In their groups, I asked them to discuss and interact with each other and to reach a joint decision about what they would like to collect as a group in the coming weeks (in and around home and school). There was so much curiosity in children that reaching to group consensus was pretty hard.

These eight-year-olds needed guidelines on how to make a decision. Few children were dominating in the group and I needed to intervene wherever required but I never stood on their heads. They used to call me whenever they would feel like otherwise most of them said, “Mam, we will do it ourselves”, (“*Hum aapne aap sochenge*”). For example, I expected that it was not fair to buy something for collectibles and we are not supposed to collect expensive items. I also suggested them that if any group could come to common decision on what

to collect, then they are supposed to simply make a list of whatever items the children in the group suggested and do voting. Then I also wrote a few possible collectibles on the chalkboard to help children generating their own ideas:

- Stamps
- Magazines
- Kinds of paper
- Flowers
- Types of fabric pieces
- Stuffed toy animals
- Pictures of insects
- Corks



Because they did few activities with collections so by this point the children seemed to have a good concept of a collection. Then they came out with so many ideas on collections of items like:

- | | |
|-----------------|--------------|
| • Straws | • Photos |
| • Rolls | • Seeds |
| • Funnels | • Lids |
| • Feathers | • Balls |
| • Thread rolls | • Magnets |
| • Bottle caps | • Pictures |
| • Stickers | • Buttons |
| • Rocks/pebbles | • Pine cones |
| • Insects | • Shells |
| • Hairpins | • Coins |

Children left that day knowing what they were going to collect. Everyday children used to talk and share about their own collections with each other and over the next two weeks, the

children's collections steadily grew. I provided each group two big shoe boxes to store their collections and asked them to label the box. Children were very eager to know about what other groups were collecting and used

to ask about each other's items. You can also provide clear containers to store the different collections. Always label the containers. You may use egg cartons, ice cube tray for sorting different objects.

At the end of the two weeks, each group was excited to know what we are going to do next? I asked each group to select their leader who will give five minute oral presentation about its overall collection, and requested all the group members to contribute and share with the leader before s/he speaks. The classroom atmosphere was so exciting as each group was anxiously waiting for its turn. Everyone was listening to other groups preparation seriously. So we can say here that meaningful activities always help in self-discipline. So here children learned not only by collecting items themselves, but through the collections of others as well. They

knew now that a collection is more than just a matter of finding and collecting many similar objects. They now knew that by collecting something one can become a mini-expert on those objects.

I could overhear children voices calling out!

- Look, what I have found!
- See, what I have brought!
- See, what I can do with this!
- Let's play with this!
- See, in what different ways I can use this!

I encouraged and stimulated their thinking by asking open-ended questions:

- What will happen if there are no worms and insects?
- What makes you think so?
- What you are going to do with this.....?
- How does this.....?

The good thing about open-ended questions on the collections was that they initiate conversations about ideas even with quiet children.

More ways to Use Collections

- Take 'Nature or Discovery Walks' in and around the school. Ask children to observe and explore carefully as they walk.
- **Make a visiting collector**
Select one child as a visiting collector and let her/him visit another section of the same class and talk about his/her collections.

You can also team up two children as 'visiting collectors'. Visit can be planned for each month for different classes.

- **Brainstorm on similarities and differences**

Divide children into two groups. Pick up two objects from any collection and show these objects to both the groups. Give names to groups 'same' and 'different'. Encourage one group to jointly brainstorm on similarities (as many as) between the two objects. Ask other group to brainstorm on differences between the two objects of that particular collection. Let one child or you write these on the chalkboard. See which group has the longest list.

- **Classifying**

Encourage children to classify the collections such as 'buttons', 'seeds' on the basis of their size, colour, number of holes, purpose, materials and so on. Provide opportunities to your children to explore areas where they can collect varied objects safely. Encourage children to keep the items of collections on a graph. You can provide a floor graph to them. Secondly, you can also ask them to do the sorting by source or function, divide the objects and make sets, and then reclassify.

- **Visual discrimination**

Let children sit in a semi-circle or in case if the number of children is more do this in two groups.

Take any specific type of object such as 'toy animal'. Arrange six to seven toy animals in a row with one toy animal different in a row. Then encourage children of other group to observe and tell which is different and why. Keep on increasing the difficulty level.

- **Show and tell**

Let the whole class bring in a specific type of object, such as 'seeds'. Set up the seeds in separate bowl and label the bowls and keep these in front of the class. Then call each child turn-wise and let her/him describe one type of seed and ask other children to guess which one she/he described. For example, a student might begin with by saying, "I am thinking of a seed that we soak and use it to make a yummy dish". It is eaten with *bhatura*. Which seed I am thinking of?

- **Story making**

Provide six to seven objects from the collections to each group of children along with some prop. Then let each group create a story using the objects.

- **Counting with collections**

Encourage children to make different shapes/objects using, pebbles, etc. Ask them to count the number of seeds or pebbles used in each shape/object.

- **Activities for Emerging Literacy**

Provide many opportunities to children to write and draw about

their collections, e.g., after their walk ask them to pick any object from what they have collected and draw that in their note book or on paper and then write few sentence underneath that drawing.

- **My Collection book:** Let children create 'my collection book' that includes their favourite objects.

- Brainstorm specific items within a given category. For example, after the teacher says the word 'seed'; 'leaf', the children can brainstorm all the seeds/leaves they can remember.

- **Mystery bag:** Bring some collections in the 'Mystery Bag' and say, "I have some objects in my mystery bag and now I am going to unpack my bag. You can also give clues for the objects. Then let children talk about the objects in the bag.

- **Collect picture cards of things:** Representative of various seasons, e.g. clothing, flowers, vegetables, fruits in various seasons, jobs, and so on. Ask children to sort and group them by season.

- During the topic collect plant pictures and paste them on cards. Let the children sort the plant into categories, e.g. plants that we eat and plants that we do not eat; plants that grow above the ground/plants that grow under the ground.

- Collect different types of leaves and make comparisons. Sort them,

paste them and label those of the same variety. Write few lines for each.

- Collect pictures of foods that come from plants.
- Collect variety of seeds. Discuss in groups the ways seeds are carried from place to place. Paste and label each seed. Make collage with seeds (do not use edible seeds for collage work).
- Provide fruit/egg carton and let children sort seeds in a carton.
- Provide identical labelled seed packets and let children match the seeds to the appropriate seed packet.



- **Feather collection:**
Let children do—
 - Feather painting
 - Feather collages
 - Make bird puppet using feathers
 - Think on your own!
- Make surprise boxes by covering these boxes. Let children guess

what might be inside. Unwrap the box and take out one object at a time and then let children describe the object or objects and how they can be used.

- You can also create boxes of collections/materials used by specific professions, e.g. one box might be a ‘teacher’s box-with pen, pencil, scale, globe, book, chalk, etc.’ Other boxes could be for mail-carrier, doctor, traffic policeman, etc.
- **Different collections:** Sort coloured items—buttons, marbles, pieces of fabric. Provide an egg carton and let children do colour sorting.

- **Floating-sinking:**

Let children collect number of different objects. Let them predict which objects will sink and which will float.

- **Heavy-light:** Let children examine objects and decide by observation which ones are heavier. And then

let them pick up objects or weigh them and find out if the predictions are correct.

- Matching of objects of sets to teach one-to-one correspondence may also be done.
- With objects from two collections, children can line up two sets of objects and then match a member

of one set with a member of the other, even before they can count.

- Children could group all the red objects in red labelled box, all the yellow in a yellow labelled box and so on.
- In addition to counting objects, a range of collections may be used for putting objects in order, i.e. biggest to smallest; heaviest to lightest; thickest to thinnest and so on.
- Similarly, for beginning addition and subtraction problems, collected objects can be utilised. You can provide opportunities to actually 'take away' objects from a large group and see how many are left.
- **Pattern making:** copying the pattern and completing the pattern with their own collections can help

children understand the concept of order.

Benefits of using collections during early years—my beliefs through experiences

- It enhances the early year's curriculum.
- Children develop vocabulary skills and questioning skills.
- Show and tell activities encourage children to enhance their oral presentation skills.
- As they take pride in their collections, they feel more confident.
- Children start respecting each other's work, e.g. they see that their peer work do not get spoiled/torn/damaged. They are very careful when handling other children's collection or work.
- Children develop a lifelong good hobby!!

Elementary Education in Uttar Pradesh

I. Fact Sheet*

i) General Information at a Glance

| | | |
|---------------------|---|-----------------------------|
| Number of Districts | : | 75 |
| Number of Blocks | : | 821 |
| Number of Clusters | : | 8241 |
| Total population | : | 19.58 crore |
| Literacy Rate | : | 69.72 % |
| Child Population | | (a) 6-10 years: 2.39 crore |
| | | (b) 11-14 years: 1.47 crore |

Educational Indicators

| Enrolment I-V | | | Enrolment VI – VIII | | | Enrolment I – VIII | | |
|----------------|----------------|----------------|---------------------|---------------|----------------|--------------------|----------------|----------------|
| Boys | Girls | Total | Boys | Girls | Total | Boys | Girls | Total |
| 133.37 Lakh | 126.05 Lakh | 259.42 Lakh | 53.82 Lakh | 54.03 Lakh | 107.85 Lakh | 187.20 Lakh | 180.07 Lakh | 367.27 Lakh |

| | GER | | | NER | | | Dropout rate | | |
|---------------|--------|--------|--------|-------|--------|-------|--------------|-------|-------|
| | Boys | Girls | Total | Boys | Girls | Total | Boys | Girls | Total |
| Primary | 104.97 | 112.42 | 108.46 | 94.78 | 101.47 | 97.92 | 7.48 | 7.05 | 7.27 |
| Upper Primary | 69.50 | 69.42 | 69.46 | 50.54 | 55.42 | 52.87 | - | - | - |

*Source: DISE 2013-14

National Achievement Survey Class V. NCERT, 2012

National Achievement Survey Class III. NCERT, 2014

State Annual Work Plan and Budget (2014-15)

| Attendance Rate | | Transition rate (Class V to VI) | | | Retention Rate (I – V) | | |
|-----------------|---------------|------------------------------------|-------|-------|---------------------------|-------|-------|
| Primary | Upper Primary | Boys | Girls | Total | Boys | Girls | Total |
| 63% | 60% | 79.50 | 81.33 | 80.40 | 87.32 | 89.07 | 88.17 |

Out of School Children: Children identified as OoSC as per HHS 2013

| 6-10 years | | | 11-14 years | | | 6-14 years | | |
|------------|-------|-------|-------------|-------|-------|------------|-------|-------|
| Boys | Girls | Total | Boys | Girls | Total | Boys | Girls | Total |
| 27104 | 23715 | 50819 | 14227 | 13053 | 27280 | 41331 | 36768 | 78099 |

II Quality Issues and Challenges

1. Teacher Issues:

- (i) *Qualification of Teachers:* More than 7 per cent teachers do not have the required minimum qualification of higher secondary.

Qualification of teachers

| Qualification | Middle | Secondary | Higher or Senior Secondary | Graduation | Post Graduation |
|---------------|--------|-----------|-------------------------------|------------|--------------------|
| % of Teachers | 0.5 | 6.6 | 15.1 | 30.7 | 47.2 |

(The minimum qualification required for primary teacher is XII Certificate as per RTE norms.)

- (ii) *Untrained Teachers*

| Number of Untrained teachers as on March 2013 | Teachers trained during 2013-14 | Present number of untrained teachers (March 2014) |
|---|---------------------------------|---|
| 1,68,043 | 1,46,904 | 19,715 |

- (iii) *Teachers in Position:* There are 3,03,939 vacancies of teachers. Therefore not availability of teachers is an issue. Also PTR ratio is adverse.

Teachers in Position in March 2013

| | Sanctioned Post | In Position | Vacancies |
|-------------------|-----------------|-------------|-----------|
| PS Teachers | 3,55,460 | 1,22,601 | 2,32,859 |
| PS Head Teachers | 66,498 | 59,289 | 7,209 |
| UPS Teachers | 1,17,378 | 78,390 | 38,988 |
| UPS Head Teachers | 44,219 | 22,881 | 21,338 |
| Total | 5,83,555 | 2,83,161 | 3,00,394 |

Teachers in Position in March 2014

| | <i>Sanctioned Post</i> | <i>In Position</i> | <i>Vacancies</i> |
|-------------------|------------------------|--------------------|------------------|
| PS Teachers | 3,55,368 | 1,12,884 | 2,42,484 |
| PS Head Teachers | 66,498 | 60,200 | 6,298 |
| UPS Teachers | 1,17,240 | 81,470 | 35,770 |
| UPS Head Teachers | 44,219 | 24,832 | 19,387 |
| Total | 5,83,325 | 2,79,386 | 3,03,939 |

(iv) *Availability of Teachers*

- There are 7 per cent primary and 19 per cent upper primary single teacher schools in the State and more than 48,000 surplus teachers. The State needs to rationalise existing teachers.
- There are about 54 per cent primary and 31 per cent upper primary schools with adverse PTR. With large number of schools with adverse PTR including single teacher schools (more than 50 per cent) any quality intervention is not likely to have an impact on student learning.
- There are only 12 per cent upper primary schools where the subject teacher are available as per RTE.
- As per the attendance study, teacher attendance has dropped in both primary schools and upper primary schools. State needs to monitor teacher attendance and ensure that teachers meet RTE norms of number of hours per week.

(v) *Para Teachers*

Employment Status of Teachers

| <i>Sl. No.</i> | <i>Status</i> | <i>Regular full time</i> | <i>Against leave vacancy</i> | <i>Temporary</i> | <i>Para teacher</i> | <i>Other</i> |
|----------------|---------------|--------------------------|------------------------------|------------------|---------------------|--------------|
| 1 | % of Teachers | 82.8 | 00 | 7.4 | 9.3 | 0.5 |

The State has 82.8 per cent regular teachers, 9.3 per cent para teachers. RTE requirement is qualified trained teachers and not para teachers.

(vi) *Teacher Eligibility Test*

TET

| <i>S. No.</i> | <i>Exams</i> | <i>Month and Year</i> | <i>No. of candidates appeared in exam</i> | <i>No. of candidates passed exam</i> | <i>No. of candidates recruited</i> | <i>Remarks</i> |
|---------------|--------------|-----------------------|---|--------------------------------------|------------------------------------|--|
| 1 | TET 1 | 27-28 June 2013 | 117785 | 27882 | 9820 | Recruitment of teachers are in process |
| 2 | TET 2 | February 2014 | About 3 Lakhs | Result is awaited | | |

Out of 1,17,785 teachers, only 27,882 passed TET. This raises question of the quality of pre service teacher education and school education.

(vii) *Salary of Teachers (Primary)*

| | <i>Salary/ Scale</i> |
|--|-------------------------------|
| Regular teachers | ₹ 9300-34000 Grade Pay ₹ 4200 |
| Para Teachers | ₹ 3500 per month on contract |
| Part time instructors (Health and Physical, Arts and Work Education) | ₹ 7000 per month on contract |

Para teachers are full time teachers and some schools have more para teachers. Salary of para teachers is only ₹ 3500 per month, half of part time instructors. This needs attention.

(viii) *Teacher Support*

Information about Block Resource Centres

| <i>Total No of Blocks</i> | <i>BRCs sanctioned</i> | <i>BRCs functional</i> | <i>BRPs sanctioned</i> | <i>BRPs recruited</i> | <i>% Effective of BRCs</i> |
|---------------------------|------------------------|------------------------|------------------------|-----------------------|----------------------------|
| 880 | 880 | 880 | 5280 | 4018 | 60 |

Information about Cluster Resource Centres

| <i>Total No of Blocks</i> | <i>CRCs sanctioned</i> | <i>CRCs functional</i> | <i>CRPs sanctioned</i> | <i>CRPs recruited</i> | <i>% Effective of CRCs</i> |
|---------------------------|------------------------|------------------------|------------------------|-----------------------|----------------------------|
| 880 | 8249 | 8249 | 8249 | 8249 | 60 |

2. Learning Achievement

Performance of Class III (Language)

- Class III children in UP were able to answer 63 per cent of language items correctly (National Average is 64 per cent).
- Average score of State for Class III is 252 (National average 257 on 0 to 500 scale)
- Average score of rural children is 251 and average score of urban children is 261 respectively (256 and 260 national average, respectively)

The score of children on word recognition is 84 and score on reading comprehension is 58 (national average for word recognition is 86 and for reading comprehension is 59 on 0 to 100 scale)

(Source: National Achievement Survey)

State's Own Assessment

In Grade III – Language

- 18.2 per cent children cannot even read letters.
- 34.1 per cent can read letters but not more.

- 16.0 per cent can read words but not Class I text or higher.
- 13.1 per cent can read Class I text but not Class II level text.
- 18.7 per cent can read Class II level text.

Performance – Class V (Language)

- The average score of UP on reading comprehension is 282 on 0 to 500 scale (National average is 247).

Performance – Class III (Mathematics)

(Source: National Achievement Survey)

- Class III children in UP were able to answer 68 per cent items of Mathematics correctly (National average is 66 per cent).
- Average score of State for Class III is 257 (National average 252 on 0 to 500 scale).
- Average score of rural children is 258 and average score of urban children is 254, respectively (252 and 253 national average respectively).
- The score of children's abilities to perform Addition is 69 (National average is 69), Subtraction is 72 (National average is 65), Multiplication is 69 (National average is 63), Division is 62 (National average is 57) and Place Value is 62 (National average is 59).

State's Own Assessment

In Grade III – Mathematics

- 13.4 per cent children cannot even recognise numbers 1 to 9.

- 41 per cent can recognise numbers up to 9 but not more.
- 26.8 per cent can recognize numbers to 99 but cannot do subtraction.
- 12.4 per cent can do subtraction but not division.
- 6.4 per cent can do division.

Performance – Class V (Mathematics)

- The average score of UP on Mathematics is 298 on 0 to 500 scale (National average is 251).

3. Enrolment Retention and Other Issues

- The enrolment of government and aided schools has been declining at primary level for the past five years (22 per cent decline from 2008-09 to 2013-14).
- The total decline between the grades is nearly 7.5 lakh (excluding repeaters), whereas the OoSC reported by the State are only 78,000.
- There are many districts with retention rate less than 65 and form part of the SFDs. However, there is hardly any vibrancy in the district plans for being low retention district.
- Average annual dropout rate in 22 districts is more than 10 per cent.
- Transition rate in 12 districts is less than 75 against the state average of 80.
- In 15 districts the GER is below 60 per cent at upper primary level.

The State has low NER of 53 per cent at upper primary level.

- There are 23 districts where the retention rate is lower than 65 per cent at primary level which is much below than the state average (88).
- Since the State has proposed a systematically planned early grade reading programme, State must ensure that the programme is closely monitored and teachers need to be supported during implementation.

4. Education of SC, ST, Minority and Children Living in Naxalite Affected Districts (NAD)

- Special focus is required on districts with concentration of SC, ST, Minority and NAD (Naxalite Affected Districts).
- Issues
 - Adverse PTR
 - Lack of co-operation from VECs
 - Indifferent attitude of parents towards education of children

5. Girls Education

Kasturba Gandhi Balika Vidyalaya (KGBV)

- KGBVs sanctioned in Muslim Special Focus Districts (SFD) have enrolled only 14.31 per cent Muslim girls, which is not commensurate with the overall percentage of population of Muslim minority in SFDs.

- The main functionaries to run KGBVs are not in place. As posts of 244 wardens, 960 full time teachers, 147 accountants, 604 watchmen, 603 peons, 11 head cooks and 64 assistant cooks are laying vacant. There is urgent need to analyse the grave situation which might have arisen due to non availability of teaching staffs and wardens hampering teaching learning processes in the KGBVs. Moreover, unavailability of cooks in the KGBVs may lead to problems in food in a residential school like KGBVs.

- There are large numbers of male staff, i.e. 1109 part time teachers, 467 accountants, 11 head cook, 64 assistant cook, 603 peons, 604 watchmen which is an area of concern. The fact that male staff members stay in the hostel premises seen as a potential security issue. A policy in this regard needs to be put in place urgently.

- KGBV evaluation team has pointed towards infrastructure of the KGBVs which was insufficient and of poor quality bed sheets, inadequate toilets, drinking water, electricity and lack of mattresses in certain rooms. The maintenance of buildings and facilities in KGBVs need to be monitored frequently.

- Pace of construction of KGBV buildings is slow. There are 63 under construction buildings, of those 10 buildings are of 2005-

06, 18 are of 2006-07, 15 are of 2008-09 and 20 buildings are of 2010-11, which required urgent attention. State should accelerate construction of existing KGBVs and also give some sort of commitments to complete these buildings at the earliest.

III. Quality Enhancement Initiatives by the State

- Developing a system for tracking teacher's performance (NCERT guidelines taken into consideration).
- Preparing to measure the achievement of student learning at State level.
- Initiated programmes to enhance learning
 - Early Literacy Programme.
 - Provided workbooks for Language and Mathematics for Classes 1-5.
 - Developed scheme of CCE, tried out in schools. CCE will be implemented in all the schools by July.
- *Training of untrained teachers:* Existing 1.24 lakh untrained graduate teachers will be provided training through open distance learning mode. NCTE has approved the proposal of UP Government to conduct elementary teacher education programme (Diploma in Elementary Education) of two years through open and distance learning mode. The programme shall be conducted by the SCERT. SCERT will also develop D.El.Ed curriculum for open and distance learning mode.
- Special Focus on Districts with concentration of SC, ST, Minority and Naxalite Affected Districts.
 - Steps have been taken to enhance enrolment and retention
 - The issues are adverse PTR (Pupil Teacher Ratio), lack of cooperation from VECs, Indifferent attitude of parents towards education of children.
- *Community Participations:* By 2013-14, 1,59,200 schools have functional SMCs (having Bank Account), the number has now increased to 1,60,164 (1,59,418 Government schools and 746 KGBVs). 1,57,861 SMCs have prepared School Development Plan.

DID YOU KNOW

Recommendations of Education for All Global Monitoring Report 2013-14

Unlocking Teachers' Potential to Solve the Learning Crisis

Children's educational opportunities should never be determined by where they grow up, their parents' income, their ethnicity, their gender or whether they have a disability. Yet, in a quarter of the world's countries, less than half of children are learning basic literacy and numeracy skills, and about 80 per cent of those not learning these basic skills live in sub-Saharan Africa. In total, 250 million children are not learning the basics. Urgent action is needed to ensure that these children do not become a lost generation.

How governments and donor agencies respond to this crisis will determine whether good quality education for all can be achieved. Learning disparities emerge early in life, even before children start school, so it is vital to see that all children benefit from early childhood education and go on to receive primary schooling of good quality in the early grades. If children learn to read with comprehension and understand basic mathematics by the time they complete primary school, they acquire

the foundations for making further progress in education and gaining the skills they will need to get good jobs.

To acquire these foundation skills, children need trained and motivated teachers. This Report identifies 10 most important teacher reforms that policy-makers should adopt to achieve equitable learning for all.

1. Fill Teacher Gaps

Many countries, especially the poorest, suffer from chronic teacher shortages. It is vital that policy-makers introduce strategies to recruit new teachers and to train, deploy and retain them. It is particularly crucial that in the 29 countries not expected to have enough teachers to achieve universal primary education until after 2030, governments, supported by donor agencies, redouble efforts to make up teacher shortages. The need for additional teachers becomes even more acute when teacher shortages in lower secondary school are included. To achieve universal lower secondary education by 2030 – a likely target date in the next set of global goals – with 32 students per teacher, an additional 5.1

million teachers will be needed, half of them in sub-Saharan Africa. South and West Asia requires an additional one million lower secondary school teachers. Thus, countries in these regions need to activate policies that begin to address the vast shortfall.

2. Attract the Best Candidates to Teaching

Children need the best teachers to optimise their learning opportunities. These teachers should be drawn from a wide range of backgrounds, reflecting learners' diversity. It is vital that they have at least a good secondary education.

Affirmative action should be considered to attract more women into teaching. To increase the pool of better-educated female teachers, policy-makers should also aim to improve girls' access to secondary education, especially in disadvantaged areas.

In addition, recruitment efforts should focus on hiring and training teachers from under-represented groups, such as ethnic minorities, to serve in their communities. Such teachers, familiar with the cultural context and local language, can increase the number of disadvantaged children who are learning.

3. Train Teachers to Meet the Needs of All Children

Every teacher should receive training to equip them to meet the learning needs of all children, especially those from disadvantaged backgrounds.

Many teacher candidates are recruited with weak subject knowledge because they have also suffered from a poor quality education. Rather than leave this problem to be addressed through ongoing training, policy-makers should remedy it through good quality pre-service teacher education programmes.

Pre-service training should equip teachers with the skills to teach children to read and to understand basic mathematics in the early grades. Trained teachers will not have the set of skills needed to improve learning for all children if they do not have sufficient time learning to teach in real classrooms. Policy-makers should therefore ensure that adequate classroom teaching experience is an essential part of training to become a qualified teacher.

In ethnically diverse societies, where local language instruction plays a crucial role in securing foundation skills, teachers should learn to teach in more than one language. Teacher education programmes should also prepare teachers to teach multiple grades and ages in one classroom, and to understand how teachers' attitudes to gender differences can affect learning outcomes.

More broadly, every teacher should have access to regular ongoing training to develop and strengthen teaching skills. Such training should enhance teachers' practical skills, especially in methods of teaching and assessment to support disadvantaged learners, and

keep them up to date with innovation in the curriculum.

The capacity of many teacher education programmes is far from sufficient to meet the needs of the numbers of teachers to be trained. Innovative approaches such as distance teacher education, combined with face-to-face training and mentoring, should be encouraged to extend both pre-service and ongoing teacher education to reach more teachers and accelerate progress towards good quality education for all.

4. Prepare Teacher Educators and Mentors to Support Teachers

Globally, the training of teacher educators has largely been ignored, with the result that most teacher educators have little knowledge and experience of real classroom teaching challenges. Policy-makers should give training of teacher educators high priority, ensuring that educators have adequate exposure to the classroom learning requirements facing those teaching in difficult circumstances. Once teachers qualify to teach, the professional support they receive in the early stages of their career is vital to their effectiveness. Policy-makers should ensure that trained mentors are available to help newly qualified teachers translate teaching knowledge into activities that improve learning for all children.

5. Get Teachers to Where They are Needed Most

Recruiting the best teachers and giving

them the best training will amount to little if they do not teach in the areas where they are most needed. Often poor, remote areas do not attract the best teachers because of inadequate infrastructure and harsh working conditions.

Adequate compensation, bonus pay, good housing and support in the form of professional development opportunities should be used to encourage trained teachers to accept positions in disadvantaged areas. In remote or rural areas with acute teacher shortages, governments should recruit teachers locally and provide them with ongoing training to ensure that all children, irrespective of their location, have teachers with the capacity to improve their learning.

6. Use Competitive Career and Pay Structures to Retain the Best Teachers

Many low income countries find it difficult to raise teacher salaries substantially because of budget constraints. Governments should nonetheless do all they can to make teachers' pay more competitive. Paying teachers low salaries sends a negative signal to society about the value of teachers' contribution to education quality. In some poor countries, teachers barely earn enough to lift their families above the poverty line. To recruit the best teachers and retain them, teacher pay must be similar to that of professionals in comparable fields to avoid the risk of teachers losing motivation or leaving the profession.

Performance-related pay programmes should be considered with caution. They often tend to reward teachers who are already in good schools teaching high achieving students. Ultimately, these programmes can be a disincentive to teach students who face difficulties in learning, including those living in poor communities. Attractive career and pay structures should be used as incentives for all teachers. Career and pay structures should recognize and reward teachers in remote areas and those who teach disadvantaged children.

7. Improve Teacher Governance to Maximise Impact

Teacher governance policies that recognize and reward good teacher behaviour should be given top priority, but it is also necessary to tackle unprofessional behaviour such as absenteeism, private tutoring and gender-based violence.

Governments should work more closely with teacher unions to formulate policies. This should include seeking their advice on strategies to support weak learners, as well as the adoption of effective codes of conduct. Such codes should refer explicitly to violence against pupils, ensuring that penalties are consistent with legal frameworks for child rights and protection. A range of penalties, such as suspension and interdiction, should be used to tackle serious cases of teacher misconduct.

Teacher absences often signal low morale and poor job satisfaction. To

raise morale and reduce absenteeism, it is vital to improve teachers' working conditions, make sure they are not overburdened with non-teaching duties and offer them access to good health care.

When teachers engage in private tutoring of their own students, the poorest students suffer most because their families cannot afford tutoring and their teacher is often spending less time covering the curriculum in the classroom. In some instances, the root cause is low teacher pay, so improving teachers' salaries is one way to help address this problem. Banning private tutoring outright is likely to be difficult to enforce, but at a minimum teachers should not be permitted to tutor students privately whom they are also supposed to be teaching in the classroom. Providing clear guidelines should ensure that teachers do not sacrifice classroom time to teach the school curriculum privately.

Governments should also invest in strengthening school leadership. Strong school leadership is required to provide teachers with professional support, and also to make sure that teachers give equal guidance to all students.

8. Equip Teachers with Innovative Curricula to Improve Learning

Teachers need the support of inclusive and flexible curriculum strategies designed to meet the learning needs of children from disadvantaged groups, including those who have had their schooling interrupted. Teachers

and teaching assistants should be supported with curriculum content and delivery methods that not only improve learning, but also reduce learning disparities, allowing low achievers to catch up.

Policy-makers should ensure that the early grade curriculum focuses on securing strong foundation skills for all, is delivered in a language children understand and is backed with appropriate resources. It is important that curriculum expectations match learners' abilities, as overambitious curricula limit what teachers can achieve in helping children progress.

In countries with a large population of out-of-school children and youth, governments and donors should give priority to investment in second-chance and accelerated learning programmes and recruit and equip teachers with the skills to run them.

In many countries, technology is being used to supplement and improve children's learning. To maximise the use of technology tools, teachers in both formal and non-formal settings need to be taught to use these resources innovatively and effectively while making sure the technology is accessible to all.

It is not sufficient for children only to learn foundation skills in school. A curriculum that encourages interdisciplinary and participatory learning is vital to foster transferable skills that promote global citizenship.

9. Develop Classroom Assessments to Help Teachers Identify and Support Students at Risk of not Learning

Teachers need strong skills in classroom-based assessment practices to identify and help learners who are struggling. Pre-service and ongoing teacher education should train teachers how to use assessment tools to detect learning difficulties early, and how to devise appropriate strategies to tackle these difficulties.

Students can make considerable gains if they are offered more opportunities to monitor their own learning. Teachers should be provided with skills to help students use learning materials to evaluate and monitor their progress.

Targeted additional support via trained teaching assistants or community volunteers is another key way of improving learning for students at risk of falling behind.

10. Provide Better Data on Trained Teachers

To achieve good quality education for all, it is crucial to know how many trained teachers each country has and how many additional teachers are needed, but in many poor countries reliable information is often lacking.

Countries should invest in collecting and analysing annual data on the number of trained teachers available in different parts of the

country, and by gender, language, ethnicity and disability, at all levels of education. These data should be complemented by information on the capacity of teacher education programmes, with an assessment of the competencies teachers are expected to acquire through the programmes.

Just as internationally agreed standards are available for primary and secondary schooling, similar standards need to be developed for teacher education programmes. Such information will enable national governments and the international community to monitor the quality of teachers and to plan more effectively to meet demand for trained teachers.

More and better quality data on teacher salaries in low and middle income countries are also needed to enable national governments and the international community to monitor how well teachers are paid, and to

raise global awareness of the need to pay them sufficiently. Teacher salary data from OECD countries, for example, enable analysis of differences between beginning salaries and what teachers earn 15 years later. This provides useful information on the relationship between pay structure and career progression, as well as comparability with other professions.

Conclusion

To end the learning crisis, all countries, rich or poor, have to make sure every child has access to a well-trained and motivated teacher. The 10 strategies outlined here are based on the evidence of successful policies, programmes and strategies from a wide range of countries and educational environments. By implementing such teaching reforms, countries can ensure that all children and young people, especially the disadvantaged, receive the education they need to realize their potential and lead fulfilling lives.

My Page

I found that many parents at my school were not ensuring regular attendance of their wards and did not show much interest in what their children learn. To solve these two problems, I started giving my first graders a 'Card of the day' at the end of each day. On one side of the card, the child's name and date is written while on the other side the letter/ vowel/ word that they learned on that day is written. The children share this card with their parents at home. Parents are asked to collect these cards and later bring all the cards for that particular month to the monthly Parents' Meeting to showcase both – what their child has learnt that month and how regularly they have attended the school.

The intervention has helped children and parents to develop the habit of attending school regularly and parents have increased confidence that their children are learning, and therefore their commitment to education has increased.

—GEETA DEVI MEENA
Teacher
Primary School
Rajasthan

I noticed that once I finish a lesson in my class and give students class-work to do, some students complete their work quickly and then distract and disturb other students in the classroom.

To overcome this, I created what I call a 'student corner' in the class. In the corners of the classroom, I keep books which the students can read once they have completed their work. This, apart from solving my problem also develops a habit of reading among the students.

This intervention has helped my students improve their reading skills and there is no distraction among students who complete their work quickly.

—PREETI ANAND
Teacher
MCD Primary School
Malviya Nagar
New Delhi

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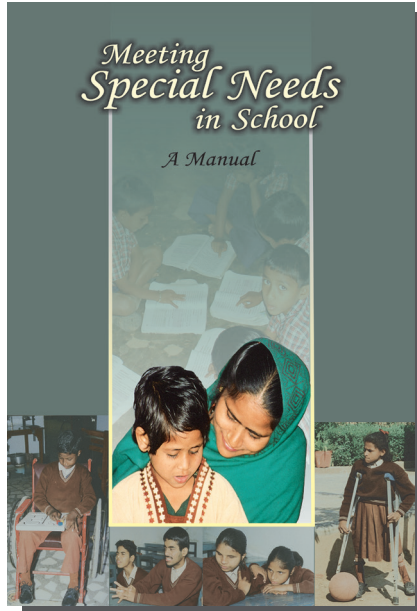
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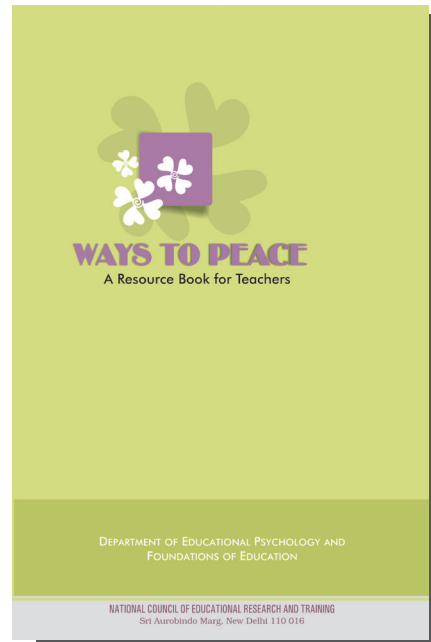
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