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**The Primary Teacher**

*Volume XL Number 4 October 2015*
About the Journal

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

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Volume XL Number 4
October, 2015

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EDITORIAL

Charles Dickens once wrote in the context of the French Revolution that, “It was the best of times, it was the worst of times.” These words seem to reflect the paradox of education in the 21st century, which is both disturbing and challenging. Disturbing, because there are still many schools where the old routines of teaching are rooted; challenging because mindsets need to be riveted to the constant approach and systemic reforms in education. The success of these efforts now depends on the steps that school teachers and authorities would take to motivate children to musings and imaginative activities. This issue of *The Primary Teacher* attempts to reflect such efforts.

The paper ‘Effectiveness of using Technology Supportive Materials for Developing Listening Skills among School Children’ focuses on Class VIII students to discuss the importance of developing listening skills among learners, highlighting the effectiveness of the use of Technology Supportive Materials over Usual Learning Methods.

‘Improving Social Skills in Children for Effective Team Players’ illuminates the correlation of social behaviour among children and development of social skills. The authors identify negative social behaviour and attitude as factors restricting a child’s social interaction, particularly with other children. The authors have experimented in a classroom, with twenty-five Grade II students, through various activities and engagement processes, and presented their outcomes. Shared experiences across regions and nations would help increase the level of awareness among teachers.

The article ‘Challenges in Understanding and Transacting Contemporary EVS Textbooks’ tries to understand the gaps between intention and transaction of Environmental Studies (EVS) textbooks developed in accordance with the National Curriculum Framework (NCF) 2005, recommending that EVS should be taught as an integration of Science, Social Science and Environmental Education at the primary stage. The author furthermore suggests a number of strategies to bridge them appropriately.

‘Use of Resources in the Teaching-learning of Environment Studies’ discusses the importance and convenient use of resource management for a teacher teaching Environmental Studies for both meaningful and engaging aspects for learning. The author focuses on going beyond the textbook for better learning and suggests few measures to locate and use resources generally available in the classrooms.

The article on ‘Firkee Bachchon Ki — A Magazine for Early Grades’ talks about various features of the bilingual children’s magazine brought out by the NCERT. Primarily meant for the children of Classes I and II, the
magazine contains short narratives and poems in English and Hindi, as well as children’s creative writings contextualised in their daily life experiences, with relevant and detailed illustrations supporting the text.

‘Strategies to Strengthen Understanding of Science Concepts’ talks about various strategies used by the Science teachers of Classes VII and VIII, for supporting learning of disparate students. The author suggests a number of strategies which can be used at different stages of planning a lesson and help in scaffolding learning of the students. Such strategies may help students to develop linkages, retrieve information, interact in groups, participate in discussions and present their findings meaningfully in classrooms.

A general belief regarding the high drop-out rate in India is that pressure on children and parents of the backward socio-economic backgrounds are responsible.

A paper titled ‘Elementary Education through KGBVs — A Case Study’ attempts to assess the achievement level of marginalised section of girls of KGBVs and the physical infrastructure available to them.

In the paper titled ‘Educational Process Followed in Street Classrooms’, the author strives to assess how educational processes take place in the classrooms of the Mobile School Programmes followed in streets and highlights the importance of such educational interventions to be provided to the children from the deprived sections of society.

‘Mainstreaming of Out-of-School Children with Community Support’ is based on a study conducted by the All India Primary Teacher’s Federation (AIPTF). The study was conducted with the objective of identifying and mainstreaming the out-of-school children in selected districts in the states of Tamil Nadu and Odisha.

School education in India is witnessing a wind of change, though it would be too much perhaps to call it a revolution. It could mean a widespread awareness of the demerits of memorisation without understanding, or even as simple a thing as turning away from the banalities of routine thinking.

— Academic Editors
Effectiveness of using Technology Supportive Materials for Developing Listening Skills among School Children

Yeasmin Sultana*

ABSTRACT

Listening occupies a central place in everyday communication, as most of our knowledge of the world is derived from listening inputs. In spite of the centrality of listening, it has received an unfair treatment in second and foreign language classrooms. The present paper discusses why it is imperative to develop listening skills among learners. Besides, this paper aimed to study the effectiveness of using technology supportive materials for developing listening skills in English among school students. Two group pre-test post-test design was followed in the study. The experiment was conducted for thirty days. Students of two sections of Class VIII constituted the sample group. Analysis of the data was done using both descriptive and inferential statistics. It is found that the use of Technology Supportive Materials is more effective than traditional method for developing listening skills in English among school students.

“Man’s inability to communicate is a result of his failure to listen effectively, skillfully and with understanding to another person.” — Carl Rogers

Introduction

Listening is one of the basic language skills that plays a key role in almost all activities of our lives. It is a medium through which people develop understanding of the world and of human affairs. That is why listening is a skill which we all need to develop. Unlike hearing, which is a passive physiological activity, listening is an active cognitive process. Hearing occurs automatically, requires no deliberate effort and happens because our ears are open. On the other hand, listening is a deliberate activity and requires energy and effort. It demands willingness, interest and a desire to understand.

* Assistant Professor, Department of Education, Tezpur University, Assam.
The Behaviourist school strongly supports the role of ‘stimulus’ in eliciting ‘response’ in language learning. Theories on English as a second language learning also recognise the importance of the role of learners’ interest, attitude and motivation as instrumental to effective language learning. Therefore, it can be strongly argued that materials to be used in language classroom ought to be interesting and also thought-provoking. In this context, technology supportive materials, i.e., animated tales may be considered as a source of productive materials for promoting language learning (Jena, 2012). The researcher wished to examine the effectiveness of using technology supportive materials for the development of listening skills in English.

What do Previous Studies Say?

Many teachers and researchers believe that listening is a natural process and so they need not teach listening skills to the learners. As a result, there has been a paucity of research into listening (LeLoup and Ponterio, 2003; Clement, 2007; Vandergrift, 2007). However, the review of literature shows that listening can be taught and evaluated (Ober, 2001).

Funk and Funk (1989) suggest language teachers that listening can be taught. According to them, for creating good listeners, firstly, teachers have to provide a purpose for listening, give proper guidelines and use teaching methodology that promotes positive listening habits in the classroom.

Thompson, Leintz, Nevers and Witkowski (2004) suggest Integrative Listening Model (ILM) for teaching listening skills. This listening model involves a systematic developmental approach and includes four stages: preparing for listening, applying the listening process model, assessing listening effectiveness, and establishing goals for future listening. It is found that good listeners plan to listen, deal with filters and methodically apply the listening process.

Chang and Read (2006) examined the effects of four different forms of listening support on listening comprehension of EFL in college students. The participants in the study were 160 business majors at a college in Taipei, Taiwan. They were all taking a required semester-long course in English listening procedure. The results showed that the most effective type of support overall was providing information about the topic followed by repetition of the input.

Chen (2009) investigated the impact of strategy instruction in a regular college EFL class in Taiwan. Rather than examining a causal-effect relationship, this study focused on exploring learners’ listening strategy development over a 47-week span. The participants were 31 non-English major students enrolled in an EFL listening course, and their language proficiency levels varied. The instruction was integrated as an extension of the listening curriculum, and metacognitive, cognitive and
social-affective listening strategies were taught in the strategy instruction. Within each strategy category, the researcher demonstrated selective strategies that had been proven effective in the literature.

Renandya and Farrell (2010) carried out a study in which they provided ample listening inputs, exposed students to a variety of listening texts, and spent long periods of time on listening activities. The controlled group was given listening inputs like the earlier students were given. The experimental group was exposed to extensive listening without bothering about strategies. The results showed a noticeable difference between the developments of the listening skills of the two groups. The experimental group was found to be better at listening than the controlled group. Finally, the researchers concluded that in order to significantly refine the listening skills of the students, teachers need to expose them to varied meaningful, realistic and enjoyable listening texts without being distracted by listening strategies, which are hard to gain access to.

Wagner (2010) reported that the visual components of spoken texts are useful for the listener in comprehending aural information. An experimental study, the effect of the use of video texts on ESL listening test-taker performance was carried out. A quasi-experimental non-randomised group design was used to investigate how the use of video texts affected L2 test-taker performance. An experimental (video) group and a control (audio-only) group were created. The two groups were given a pre-test and a post-test. The videos used for the experimental group were designed and created specifically for this study by the researcher. A total of eight video texts were used (one dialogue and one lecturette text for the pre-test, and three dialogue and three lecturette texts for the post-test). Multi-variate Analysis of Covariance (MANCOVA) was used to compare the two groups’ performance, and it was found that the video (experimental) group scored 6.5 per cent higher than the audio-only (control) group on the overall post-test. This difference was statistically significant. The results of the study suggest that the non-verbal information in the video texts contributed to the video group’s superior performance.

The Processes of the Study

Objective and Hypothesis of the Study

The objective of the present study is to find out the effectiveness of using technology supportive materials for the development of listening skills among school students.

The hypothesis of the present study is that there exists significant difference between mean scores of listening skills developed through the use of technology supportive materials and mean scores of listening skills developed through traditional method in English with regard to pre-test and post-test scores.
Methodology of the Study

In the present experimental study, the researcher had used ‘two-group pre-test and post-test design’. The relative effectiveness of the use of Technology Supportive Materials (TSM) and Usual Learning Method (ULM) for the development of listening skills in English of Class VIII students was studied in the present study. In this study, ULM and TSM were considered as the independent variables and development of listening skills in English was considered as the dependent variable.

Sample

In the present study, the researcher had followed the random sampling method in order to select the sample. The researcher made two sections, i.e., Section A and Section B of Class VIII of Kendriya Vidyalaya (KV), Malda; i.e., Section A of Class VIII as a control group and Section B of Class VIII as an experimental group for the experiment. Sixty-two students formed the entire sampling group at the beginning of the experiment. However, 59 students were present in all the stages of the experiment. The details of the sample of the present study are given below:

Control and Experimental Group Background

It is important to consider the background of the control and experimental groups in the context of English as a second language, as the teaching materials and methods that are suitable in the inner circle countries may not be fully suitable in the outer and expanding circle countries. In West Bengal, English is taught as a compulsory subject from Grade I in the schools. The control group taken for the study was from similar kind of background. All the students in the group were from KV, Malda, West Bengal. They were in their early teens and had been learning English for seven to eight years. However, they got exposure to English only in the school.

Materials used for the Intervention

Here animated Panchatantra tales were used for developing listening skills. These animations are available on the website http://www.youtube.com/results?search
Data Collection Procedure

In the beginning of the present research, a pre-test was conducted in the classroom to know the present level of proficiency in listening skills in English. After the results of the pre-test, a thirty-day teaching course was designed. It included the use of animated tales to improve the listening skills so that the students were able to comprehend speeches and try to speak English in their everyday life. At the end of the course, a post-test was conducted and the results of the pre-test and the post-test were compared.

Table 2
‘t’ Test Results of Control and Experimental Groups at Pre-test and Post-test Levels

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<td>1.157</td>
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Effectiveness of Technology Supportive Materials for Developing Listening...
The Primary Teacher: October 2015

control group and the pre-test scores of the experimental group is 1.861; and this ‘t’ ratio is less than the table value of ‘t’ at 0.05 level of confidence for 120 DF. For 120 DF, the table value of ‘t’ at 0.05 level of confidence is 1.98. Since, the table value of ‘t’ is more than the obtained ‘t’ ratio between the pre-test scores of the control group and the pre-test scores of the experimental group, so, the null hypothesis is accepted. Hence, it is concluded that at the initial stage of treatment there exists no significant difference between mean listening skills (m=55.23) of the control group and mean listening skills (m=55.38) of the experimental group.

But there exists significant difference between the post-test results of the control group and the post-test results of the experimental group. Because, it is found that the obtained ‘t’ ratio between the results of the control group and the results of the experimental group is 4.840; and this ‘t’ ratio is more than the table value of ‘t’ at 0.05 level of confidence for 120 DF. For 120 DF, the table value of ‘t’ at 0.05 level of confidence is 1.98. Since the calculated ‘t’ ratio between the mean results of the control group and experimental group is more than the table value of ‘t’ at 0.05 level of confidence, so, the null hypothesis is rejected. Hence, it is inferred that at the post-test stage of treatment, there exists significant difference between the mean scores of listening skills (m=58.13) of the control group and mean scores of listening skills (m=61.63) of the experimental group.

From the Part I of Table 2, it is found that at the pre-test level there exists no significant difference between the control group and experimental group with regard to their mean listening skills scores, but at the post-test level there exists significant difference between the control group and experimental group with regard to their mean listening skills scores.

![Figure 1. Mean level performance of control group and experimental group showing the development of listening comprehension skills in English.](Image)

**Conclusion**

Active and effective listening is a key to academic, professional and social success. That is why it is imperative to develop listening skills. Fortunately, listening skills can be trained/developed. However, there are no foolproof ways of developing listening skills. The old saying that practice makes a man perfect applies....
to listening skills as well. Teachers may try various strategies and techniques to help their students get rid of listening problems and inculcate good listening habits in them. A teacher can administer various exercises like the ones discussed earlier, to make his/her learners better listeners.

The present study at the same time highlights the effectiveness of use of Technology Supportive Materials (TSM) over Usual Learning Method (ULM) for the development of listening skills in English at elementary stage. The data analysis referring to the experimental effect has been made using ‘t’ test as well. Data analysis done at the mean level and ‘t’ test level shows that there was a significant difference between the control group and the experimental group in terms of development of listening comprehension in English. Taking into consideration all these inferences, it is summarised that use of TSM is more effective than ULM for developing listening comprehension in English at elementary stage.

REFERENCES


Improving Social Skills in Children for Effective Team Players — An Action Research

Rashmi Soni*
Ritu Saxena**

ABSTRACT

Children with social skills show consideration for the feelings and interests of their peers. They take responsibility for their actions, are able to control themselves, and assert themselves when needed. The present action research illuminates the importance of social behaviour among children and the development of social skills among them to create effective team players. The sample was twenty-five Grade II students (aged between seven and eight years) of an English medium school at Madhapur, Hyderabad. These students were having negative social behaviour and attitude which restricted their social interactions with other children of the classroom, leading to the feeling of groupism. The objective was to enable these children build good social skills to become effective team players. By the end of the academic session, the students demonstrated excellent social skills as team players and their ownership towards their class had improved remarkably.

Introduction

Social skills are those communication, problem-solving, decision-making, self-management and peer relations abilities that allow one to initiate, build and maintain positive social relationships with others. Deficits or excesses in social behaviour interfere with friendship, adult–child relationships, learning, teaching, and the classroom’s adaptation and climate. Children who have social skills can communicate clearly, calmly and respectfully. They show consideration for the feelings and interests of their peers. They take responsibility for their actions, are able to control themselves, and are able to assert themselves when needed. It is vital for children to use social skills because they are the route to creating and developing relationships. Social skills are needed

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for enriching social experiences, and they lessen the chance for negative interactions. Being the building blocks for friendships, social skills give children the chance to learn from their peers and learn how to be considerate with those they meet in the future. By having a positive impact on life experiences, social skills also give children a sense of confidence over their environment.

**Social Skills Development and School Adjustment**

A large body of evidence supports the role that children’s social skills play in social and academic success. In general, children’s interpersonal skills have been linked to social outcomes whereas learning-related skills have predicted academic success. Interpersonal skills are especially important for social adjustment in childhood and adolescence. For example, one study found that poor interpersonal skills (e.g., externalising problems) in childhood, predicted academic problems in adolescence, which in turn led to internalising problems in adulthood (Masten et al., 2005).

There is also strong evidence that learning-related skills predict early academic achievement. For example, one study found that pre-kindergarteners who had difficulty using learning-related skills to complete goal-directed activities scored lower on a standardised cognitive achievement measure. These children also exhibited more risk factors such as family problems, lower parental education and behavioural or emotional problems (Bronson, Tivnan and Seppanen, 1995). Taken together, research suggests that promoting interpersonal skills and learning-related skills in young children and adolescents is one way to ensure strong social and academic skills.

A new 20-year study shows a link between children’s social skills in kindergarten and their well-being in early adulthood, according to the findings published in the *American Journal of Public Health*. Children who were more likely to ‘share’ or ‘be helpful’ in kindergarten were also more likely to obtain higher education and hold full-time jobs nearly two decades later, the study found. Students who lacked these ‘social competence’ skills were more likely to face more negative outcomes by the age of 25, including substance abuse problems, challenges finding employment or arguments with the law. “This study shows that helping children develop social and emotional skills is one of the most important things we can do to prepare them for a healthy future,” said Kristin Schubert, Program Director at the Robert Wood Johnson Foundation, which funded the research. “From an early age, these skills can determine whether a child goes to college or prison, and whether they end up employed or addicted.”

**Effective Classroom Strategies**

The teacher–child relationship plays a significant role in facilitating social skill development. Numerous studies have found that warm teacher–child...
relationships are associated with high levels of cooperation, social competence and learning-related skills in early childhood and elementary school. Teacher-reported negativity, however, has been associated with social difficulties in children. In addition to teacher factors, the classroom environment can facilitate the development of social skills. Classrooms that best promote these skills are child-centred and provide a stimulating, organised environment with ample opportunity for interaction (Cameron, Connor and Morrison, 2005). Children demonstrate higher interpersonal and learning-related skills in classrooms where teachers provide organisation and guidance, such as modelling appropriate social behaviours and problem-solving skills. Teachers can facilitate social problem-solving by demonstrating how to talk through the steps of a problem and by creating opportunities for children to practice social skills.

Children with social skills deficits most often have difficulties with one or more of the areas like cooperation, communication, emotional understanding and regulation, aggression and problem-solving (Bierman and Erath, 2006). To effectively help children who have social skills deficits, teachers can provide instruction and modelling of appropriate behaviours and responses. In young children, teachers can also create opportunities for children to practice and generalise social skills through classroom interactions. As children practice social skills, teachers should provide positive feedback to promote appropriate behaviours and redirect inappropriate behaviours.

Social skills are important for academic success and social well-being from early childhood through adolescence. Children without adequate social skills are at risk of peer rejection, behaviour problems and poor academic achievement. A combination of child, parent and environmental factors influence the development of social skills and it is therefore essential for teachers and researchers to consider a child’s context and use multi-faceted strategies to effectively promote positive social skills development.

Problems Faced in Documentation

It is clear that social skills are lacking for some students in school today. This lack of social skills manifests itself as an increase in aggressive behaviours. The lack of social skills can be attributed to multiple causes. From least important to most important, the causes are class size, classroom dynamics, safety and security, transportation, exposure to peers, transition times, curriculum changes and exposure to families.

The present action research was conducted in one of the renowned English medium schools of Hyderabad, on children of Grade 2. As a class-teacher of Grade II the researcher had been observing, during the structured and unstructured classroom activities, that some students were manifesting
inadequate social behaviour and negative attitude. In a co-ed environment, irrespective of their gender, some students had a high opinion about themselves that they were better than the rest. Their body language, behaviour and interaction during group activities and in the class as a whole, were all manifesting arrogant behaviour. Some of these students were good in academics and extra-curricular activities, some were very confident and active and others were very gregarious. These children were able to attract the attention of all the teachers who came to the class. Getting extra attention of the teachers made them feel that they enjoyed celebrity status.

There were certain other internal and external factors affecting their behaviour which were manifested in this negative attitude. These students preferred the company of children and made partners who they thought were just like them. They manifested a kind of superiority and even looked down upon other students of the class on several occasions. In activities where the groups were made by the teacher and choice or option in the formation of the group was not given to them, these students did not make any attempt to bring all the members into the discussion or the activity. It was observed that they had difficulty in sharing and taking turns with their peers. It seemed to the researcher that the presence of shy and weak children did not matter to them at all. This led to groupism and lack of cohesiveness in the class; also a very downbeat impact on the other children and the class environment as a whole. In short, children lacked social and emotional skills.

All these observations impelled the researcher to identify the causes that led to such behaviour (arrogance, aggression, boastfulness and lack of social interaction with students who were little introvert in the class and not confident about themselves), especially when these children had been together and knew each other over the years through previous grades.

**Causes for Negative Behaviour and Attitude**

With previous experience and observations, the researcher tried to study the causes or reasons that affected these children and made them manifest such negative behaviour and attitude.

1. The intelligent and socially active children, who were good in academics, co-curricular activities and were confident and outspoken, dominated other students. They felt that they were the ‘celebrities’ of the class and could easily dominate others.

2. Gregarious children made more friends and were able to form their own group to play and interact with other children in the class. They were confident and irrespective of their academic performance, they were accepted by other children in contrast to the silent and shy ones.

3. Teachers are role models for the students. When the teachers rebuke academically weak
students, other children get a reason to be rude and bully such students. Therefore, a prejudiced and biased approach of the teachers towards some students subsequently led to superiority attitude among other children.

4. Most of the times teachers select only the active and outgoing children to represent the class in various events and functions held in the school. They might do this unintentionally, but those who never get an opportunity to showcase their talent and burden some responsibility, feel detached and inferior to the rest.

Objectives
The strategy for building social skills in children was planned and followed with the following objectives in mind:

1. To enable the children shed their boastful behaviour and attitude towards their own classmates and facilitate them to mingle with each other to form good social rapport among themselves.

2. To help the children understand the importance of team spirit and develop the sense of responsibility and ownership among them, making them effective team players.

3. To provide opportunities to the children to showcase their talent and leadership ability, while being a part of a group.

Sample
The sample of this study was twenty-five Grade II children (of English medium school at Madhapur, Hyderabad), aged between 7–8 years.

Action Plan to Build Social Skills in Children
The aim of this research was to build social skills in children so that they could become better team players and develop social sensitivity. For this, some effective techniques and methodology were followed:

Declared Rules for the Classroom
As a class-teacher, the researcher strongly believed that it is very important to lay down certain ground rules for the classroom discipline. With the aim to make a good team and inculcate good mannerisms in the students, a chart was prepared for the classroom bulletin board. The chart clearly mentioned the following rules.

1. All the students of the class are friends.
2. We should not make fun of others.
3. Raise your hand to share your thoughts (instead of shouting to grab teacher’s attention).
4. Wait for your turn.
5. Respect all teachers and elders (including the helpers or the ayahs).

Positive reinforcement was given by appreciating the children who followed the rules.

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Seating Arrangement

To break the ice, the first step was to change the seating arrangement in the classroom. Students were excited to rearrange their chairs and tables. Every month the seating arrangement was changed and children eagerly awaited a new change. They even started giving ideas to arrange the chairs and tables. The entire idea behind this arrangement was to change the partners. They became preoccupied with the classroom arrangement and were eager to become the most creative class in seating arrangement in the school.

A few seating arrangements that were liked by the students:

This ice-breaking initiative was very encouraging as many students were quite satisfied with their new partners. But there were a few who were not happy and were more interested in sitting with their own friends. Children got an opportunity to know each other one-to-one by rotating partners. Moreover, this exercise was utilised to develop a good relationship among students. Children who used to show negative behaviour and attitude were asked to help their partners on the completion of their own work. They were further discouraged to make fun of other children, the second rule of the class. Sensitivity towards their own classmates and a sense of ownership was encouraged.

Assigning Responsibilities

Every child is unique and has some talent—apparent or yet to be explored. The researcher firmly believes that given an opportunity each child nurtures an ambition to lead the class and get respect and attention of her/his classmates. Against the trend of selecting a few active and intelligent students and assigning them responsibilities, the researcher appointed each and every child of her class as a ‘monitor’. Everyone had their set of responsibilities and each of them was in-charge of the class at some point or another. Over a period of time, this helped them learn to share a responsibility and complete a task successfully by taking turns or doing it together. No matter how small the task is, the child gets a sense of self-worth and develops responsibility. Irrespective of their academic performance, assigning a responsibility enhanced the self-image and confidence of the students who
were little shy and introvert. The shy ones got a chance to demonstrate their talent, which they would have never taken up if left to themselves.

**Circle Time**

Circle time was an important session of the class routine. It was the time to increase our personal rapport, socialise and have fun. Circle time helped the entire class to learn to share views, accept other’s opinions and most importantly taking turns.

**Collaborative Learning through Work Cards**

To inculcate and reinforce social skills in children along with the need to enhance the understanding of concepts in various subjects, some work cards were prepared. Children were divided into groups by the teacher; each group had to solve the work card as per the instructions mentioned on it, within the given time. Since a collaborative effort was required to get the answers, the groups had to work as a team and it was the task of the group leader to involve all the members.

This planned classroom activity helped the students to understand the importance of a team work. They started developing a sense of ‘ownership’ towards their group and group members. Winning as a team was focused rather than individual work and this led to more cohesiveness in the class.

**Cooperative Learning**

Cooperative learning was another important technique used by the researchers to enhance the social skills and social learning experience among the children. The class was divided into
small groups to complete the assigned group work. For example, group games, post-activity write-up and role-plays.

Such structured cooperative learning activity enabled the children to share their learning with their group mates; which not only strengthened their learning of complex topics but also helped the children to understand the concept and overcome their shyness.

These activities played an instrumental role in developing and enhancing the social skills, more so as each student was responsible for her/his own performance as well as of the team.

**Conclusion**

As the academic year approached its conclusion, it was observed and found that the children were successful in learning social skills and became good team players. Their sense of ownership and responsibility towards their class as a whole, upholding their individuality, was laudable. All the children became friends with each other; and though some might not have been very close, at least they did not have any negative attitude towards their classmates for sure.

**Recommendations and Suggestions**

At the end of the study it can be concluded that if children are taught social skills, then they will learn to discard their negative behaviour and attitudes and become better team players. It is therefore important for the teachers, facilitators and even parents to inculcate social skills in children from an early stage. Growing up with team spirit and discarding negative behaviour will boost their overall development and strengthen their personality.

In recent times due to technological advancements the world has become too small. Along with intelligence quotient (IQ) and emotional quotient (EQ), social quotient (SQ) has also become very prominent. It is scary to know that children missing on the social skills lead a secluded life and this has a very negative impact on their mental and physical health, also leading to some psychological and or personality disorders. With plenty of options to socialise virtually through the internet and smart phones, etc., it is important that the children inculcate social skills in real life early.
Hence, it is imperative for us to instill social skills in our children and help them grow into good and responsible human beings.

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Challenges in Understanding and Transacting Contemporary EVS Textbooks

Kavita Sharma*

ABSTRACT

Understanding that young children perceive their surroundings holistically and to reduce the curriculum load for them, the National Curriculum Framework (NCF) 2005 based on the National Policy on Education 1986, recommends Environmental Studies to be taught as an integration of Science, Social Science and Environmental Education at the primary stage. It exists as a separate curricular area from Classes III to V. However, at Classes I and II the related concerns are addressed through language and mathematics. The textbooks developed on this depart from the traditional approach and demand considerable changes from teacher-centric to learner-centered teaching-learning giving primacy to children’s voices and their past experiences and mould/devise the strategies based on their responses. The approach has been accepted and implemented by most of the states and UTs across the country. Many of them have adopted/adapted the NCERT textbooks in Environmental Studies based on NCF–2005. In order to understand the gaps and challenges in transaction of these books, field visit to a government school in New Delhi was undertaken for a period of three months. To understand the gaps between intention and transaction of EVS, observations of teachers teaching EVS were made and the author (who was part of the curriculum development of EVS) herself taught some lessons. The article, based on this field visit experience, compares the transaction of EVS by a qualified and trained teacher to that of the author to understand the gaps in development/transaction of EVS curriculum in order to come up with the strategies to bridge them appropriately.

Introduction

The National Curriculum Framework 2005 views Environmental Studies (EVS) in Classes III to V as a subject which integrates the concepts and issues of science, social science and

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environmental education. Before 2000, it was taught in two distinct parts, science and social studies in Classes III–V. An integrated approach for EVS curriculum was adopted by NCF 2000, wherein, it recommended that in Classes III–V, children would be introduced to the environment in its totality with no clear-cut distinction between natural and social environment. This was reflected in the syllabus in Classes I and II, it was not kept as a curricular area and environmental concerns were addressed through language, mathematics and Art of Healthy and Productive Living. However, in 2005, a new paradigm was proposed by the position paper on Habitat and Learning that envisions generation of knowledge among children with a capacity to think critically emphasising learning. To do so, NCF–2005, recommends EVS as a core curricular area and a separate subject from Classes III to V and accordingly, syllabi and textbooks have also been developed.

**EVS Curriculum at the Primary Level: The Shift**

Despite that, EVS is to be taught with an integrated perspective by NCF–2000, the syllabus and textbooks were devoted distinctly to science and social studies. Recognising that children construct knowledge in a holistic manner, the approach in EVS, as per NCF–2005, involves the use of thematic approach, wherein, the themes such as Food, Water, etc., reflect science, social science and issues of environment holistically that strengthen the integrated approach as envisaged by NCF–2005. In Classes I and II, as well, the environmental concerns are to be integrated with teaching-learning of language and mathematics. Besides, the NCF–2005 recommends departing from rote bookish learning which causes a gap between home, school and community. It recognises that given space, time and freedom, children generate new knowledge by engaging with the information passed on to them by the adults.

**Field Visit: Some Details**

In order to understand the transaction of EVS in the manner envisaged by NCF–2005, a field visit to a government school was undertaken for three months. The classroom observations and informal interactions with the teachers and students in EVS classrooms were made. The author (was part of the EVS curriculum development) also taught some lessons. Field notes were regularly recorded and the qualitative data was analysed to understand the gaps in intention and transaction of the EVS curriculum.

The NCERT textbooks of EVS ‘Looking Around’ were being used. A mother teacher (who taught all subjects) taught EVS to 32 children of Class V. She had been their teacher since Class I. Children were using the English version of the textbooks but the medium of conversation was mostly Hindi with occasional use of English words. The teacher was qualified and
had undergone in-service training on NCF–2005. She was familiar with the guiding principles of NCF–2005.

There is a gap between intended and transacted EVS curriculum, as seen in the transaction of a chapter (Chapter 11, Sunita in Space, Class V EVS textbook, NCERT, 2008).

The following are some details of the classroom observations (Approach X) of this chapter in EVS classroom.

**Approach X:** The teacher mentioned definitions of a star, planet and satellite on the blackboard and asked children to note down and memorise them. Thereafter, she conducted some activities given below.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Key Concepts/Issues</th>
<th>Suggested Resources</th>
<th>Suggested Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ride in a Spacecraft</strong></td>
<td>The sky in the day and night. Basic exposure to the aerial view of the earth and what India looks like from there.</td>
<td>Story of Rakesh Sharma/Kalpana Chawla</td>
<td>Observation from a terrace to draw its aerial view. Imagine yourself in a spacecraft giving an interview to the PM about what you see from there!</td>
</tr>
<tr>
<td>What all do you see in the sky — at daytime and at night? How many of the things you see in the sky are manmade? Have you heard of people travelling in a spacecraft?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**EVS Curriculum: Understanding the Intention and Transaction**

‘Sunita in Space’ is based on the theme ‘Travel’ in the NCERT syllabus document (page 133) at the elementary level.

The chapter deals with exploring children’s ideas about earth, space, our position on earth, through observations of the sky and globe, observations of the pictures of astronauts in space and reading about their experiences, how things fall on earth and float in space through interaction with peers/teacher, etc.

**Activity 1**

The teacher made one child (A) stand in front of the class and asked another child to revolve around him. She asked children to assume the child at the centre as Sun (a star) and the child revolving around the first child as planet. After that she asked two to three children to revolve around (A) and told children that the planets can be more than one. Thereafter, the teacher wrote names of the nine planets revolving around the Sun on the blackboard and asked children to copy the same and memorise them in a sequence.
**Activity 2**

To introduce satellites, she repeated Activity 1 with another group and this time asked children to assume the child at the centre as a planet and the child revolving around him as satellite. She gave example of the Earth as a planet and the Moon as its satellite.

One of the children asked — *Kya Chand, Dharti ke aass pass ghoomta hai?* (Does the moon revolve around earth?)

Teacher — Yes. You might have seen that the position of moon at night changes. *Aisa isliye kyunki yeh Earth ke aass pass ghoomta hai* (It is so because it revolves around our Earth).

**Activity 3**

Next day, the teacher took children to the school ground and asked them to observe their shadows. She made postures of hand and children observed the shadows. The children imitated her. Later, she asked them to draw the pictures given in the chapter.

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**Some Observations on Approach X**

The chapter ‘Sunita in Space’ was used to teach about the celestial bodies like stars, planets and satellites which were completely delinked from the syllabus and eventually the activities conducted were also unrelated. The activities appeared to be irrelevant and completely lacked the purpose and intent as one child encircling another, in no way conveys any idea about satellites/planets/stars. There was no active and meaningful involvement of all children. The teacher was also not clear of the objectives of conducting the activity on shadows. This was related neither to the syllabus/chapter nor any attempt was made by the teacher to link them with the concepts taught. The EVS transaction completely ignored the NCF-2005, where children were passive receivers and the teacher appeared to have lacked comprehension of the aims, objectives of not only the chapter ‘Sunita in Space’ but that of EVS as well. On probing she mentioned that the chapter does not have much content and she taught students with her own understanding.

The next day, I (the author) planned to teach the same chapter with children (Approach Y). Their EVS teacher was also watching.

**Day 1**

I brought a globe to the classroom and initiated discussion with children.

- Children, what do you see in the sky during day and at night?
- Children—Ma’am, *din mein hamein Sooraj dikhta hai aur raat mein Chand aur Sitare* (We see the Sun during daytime and the moon and the stars during night).
- Very good. Have you heard about space?
- No, ma’am.
- Okay. Have you heard about Sunita Williams?
- Children started thinking, some of them nodded.
Alright. Have you heard about Kalpana Chawla?

Children replied in chorus—Yes, Ma’am.

Who was she?

Ma’am, woh Chand per gayee aur wahin rehne lag gayee (She went to the Moon and lived there only).

Achaa. Kya tum jante ho ki Chand per aur hamare beech mein kya hai? (Okay. Do you know what exists between the Moon and the Earth?)

No reply.

It’s Space. Space kya hai aur Earth se kitna door hai hum is per baat karenge (We will talk about what space is and how far it is from Earth).

The next moment, I pointed towards the globe and said—Yeh hamari Earth ka model hai. Ise globe kahte hein (This is a model of the Earth and we call it as globe).

Ma’am, yeh ghoomti rehti hai kya? (Does it keep revolving?)

Yes.

Then, I asked—Hum is per kahaan rehte hain (Where are we on this Earth)?

Children were silent.

If this globe is our Earth, are we on it or inside it?

Children—Ma’am, we are inside this.

Why?

Children—Ma’am, if we are outside then we all will fall down.

Ok, but what do you see when you look upwards in the open?

Ma’am, we see the sky.

Will it be possible to see the sky if you are inside this earth?

No Ma’am.

To my surprise, one child mentioned that she had seen gases and smoke coming out from a volcano on television and said that the Earth is very hot from inside. She said it was difficult to stay inside the Earth due to intense heat. But other children asked:

But Ma’am, fir hum neeche kyon nahin girte? (Why don’t we fall down)?

Children, have you ever tried to throw something upwards like a ball, etc. Then it goes up and comes down after that. What do you think about it?

Ma’am, Earth mein chumbak hai. Yeh hamein apni aur khinchtee hai (The Earth has a magnet which attracts us).

Hmm.

Param—Par Ma’am, mera diwali wala rocket to oopar hee jaata hai (My Diwali rocket only goes up).

Seema—Lekin jalane ke baad neeche hee to aata hai (But after burning it falls down).

But Ma’am, asli rocket to neeche nahin aata? (But Ma’am, a real rocket does not fall down).
I appreciated their responses and queries and told them that if an object goes out with a greater force than the Earth can pull it down then it will leave its surface and enter the space.

- Okay. Now, we are in New Delhi, try to find out our position on this globe (I called 3–4 children to see that). They struggled for some time but found New Delhi. We marked the position. Then, I asked different groups them to name and locate some other places. Children said— Kanpur, Mumbai, Nepal, USA. Later, one child said:

- Arre USA ke log hamse ulti disha mein hain (Those in USA are standing upside down in opposite direction to us).

Another child:

- Aur jab Earth gol gol ghoomti hai to log girte bhi nahin (and they do not fall when the Earth revolves). To woh isliye na ki earth hamen apni aur kheench ke rakhti hai (It is because the Earth attracts us to itself).

I was quietly listening and appreciating their discussion and observed that children wanted to play with the globe. I divided them in two groups and one group named a place and counted twenty whereas the children from the other group were supposed to locate the place on the globe in that much time. On losing, they exchanged turns.

That day I asked children to go to the terrace of any building during day time (if possible), observe the view below and express that pictorially and to repeat the same process at night to draw the view of the sky.

**Day 2**

Next day, most of the children did so and I allowed each one to show his/her work to the whole class. I collected the sheets, wrote my comments appreciating each one and hung them all on a string in the classroom. Later, I drew their attention to the picture of the Earth (page 105 of the textbook) taken from space and asked them to identify India in it.

They said that Ma’am, this does not have lines like we have on a globe. What do the lines indicate?

These lines only help us to differentiate one country from another.

- Very good, children! Yes, Humans have done this division of Earth into countries and states, etc. Why do you think it has been done? Try to express your ideas in a few lines/through drawing.

Next day, I asked children to read Sunita’s experiences of living in Space (mentioned on page 101 of the textbook of Class V) before we discussed. One child asked:

- Ma’am, how far is the Space?
- It is more than 300 km from Earth. Do you know how far is 300 km?
- Ma’am, bahut door hoga. Kai din lagte honge pahunchne mein. (It must be quite far and might take many days to reach there.)

None of the children had an idea.
I asked—Have you been to Chandigarh or Jaipur?
About four to five children had gone. I said—whatever distance you travel in going there and if you travel some more distance than this, in the upward direction, then we may reach Space. However, still many children found it very difficult.

**Day 3 and Day 4**

In order to help them understand this, I decided to involve children in activities of measurement. With their scales they all measured the length and breadth of their EVS textbook and then calculated the perimeter. I divided them into groups of five children each and asked each group to bring measuring tapes the next day. I took them out to their playground the next day and helped each group measure the perimeter of their playground. There were some variations between a range of 1.2 to 1.4 km. We discussed that if you complete around 300 rounds of your school then that much distance travelled upwards will take you in Space where Earth will not be able to attract things with the same force. All children were very excited by now.

We continued our discussion on the third day. I asked them to observe the pictures of Sunita in Space (on page 102) of the textbook. All of them were quite astonished to see how all objects, food and people were floating in the picture. I asked them if they could think on it.

One child—Ma’am, because Earth is not there to pull them down.

We did an activity when they closed their eyes and I asked them to imagine that they were in a spaceship revolving the Earth and asked:
- How do they feel?
- Are they able to stay at one place?
- What is the direction of the hair?
- Where are their bags and books going?
- What is the teacher doing?
- How is she writing on the board?
- How will you eat your food?

They all laughed and enjoyed. When they opened their eyes I asked:
- Can we now think of how a ball thrown up on Earth comes down?
- Why water flows down the hill and not upwards?

Children raised many questions such as—what happens on the Moon and the Mars, etc. I encouraged them to think about it and find out from their elders. I also suggested some sites on internet and books from the library to them.

**Some Observations on Approach Y**

I asked the teacher about her opinion on this. She expressed that there was no rigid planning for the transaction of the chapter and the plan was evolving as the teaching-learning progressed based on children’s responses and understanding. She said that all children participated very actively in the teaching-learning...
process wherein they worked hands on, both inside and outside the classroom. She also mentioned that not only mathematics, but art and language were also beautifully integrated. On asking about science/social science issue she opined that science, social science and environmental issues were not dealt in isolation and the integration did not even appear superficial but was naturally reflected during teaching-learning. Attempt was also made to sensitize children about the conflicts among nations/states for land and boundary. She noted that the transaction did not seem to be an activity imposed on children but probing children’s ideas and gradually building upon that helped them to learn and progress joyfully.

**EVS Curriculum: Addressing the Gaps and Challenges**

We discussed the issues informally on different occasions and I sought her suggestions on how the gaps could be addressed. Following were sieved out of the discussion, which, according to her, needed to be considered in order to implement EVS as per the approach envisaged under NCF–2005.

- It is difficult to comprehend and plan teaching-learning in the desired manner from the existing text in the EVS books. Only a demonstration in real-life classroom can help teachers understand the approach.
- Some chapters are very lengthy in Class IV and V EVS textbooks. These need to be written in a simple language as students find them difficult to comprehend.
- Teachers hardly have any access to the syllabus. It is difficult to establish link between the syllabus and the chapters included in the textbook as neither the title nor the content depict this clearly.
- The rationale for the sequence of chapters in EVS textbooks is also not clear. For example, the first chapter is on ‘Senses’ and the second one is the story of a ‘Snake Charmer’ whereas the third one is based on food entitled ‘From Tasting to Digesting’. There is an abrupt shift from one topic to another.
- Appropriate resource material (some exemplar good practices) to understand this process was required. Some video clippings of the classroom transaction can be very helpful.
- Concerns for the safety, security and management of children prevent us from taking them out of the school/classroom. Cooperation from the authorities may help in this direction.
- The in-service trainings are mostly theoretical and lecture-based and away from the ground reality. The orientation/capacity building programmes need to be done in real classroom situations.
• Flexibility needs to be there in the system to let the teachers plan teaching-learning in a desired manner. Provision may be there in the daily timetable/school calendar to extend activity(ies) as per the need of the learners.

• Coordination between teachers and teamwork can also help.

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Use of Resources in the Teaching-learning of Environment Studies
Kavita Ghosh*

ABSTRACT
Teaching just through chalk-and-talk method does not allow the child to explore the world the way it exists and in its entirety. This is particularly true about subjects like Environmental Studies where the essence of the subject lies in hands-on exploration of the surroundings. However, due to multiple reasons, the teaching-learning of this subject many a time gets restricted merely to reading and writing. This paper discusses how resource management is very crucial for a teacher teaching Environmental Studies and how appropriately chosen resources can make learning both meaningful and engaging. One needs to understand that resources can be of several kinds and one need not just restrict to the use of common resources listed in the books. The teacher should know how to locate, procure and use resources in the best interest of her/his learners. The paper is written on suggestive lines and it partly draws from my experience of working with young learners in primary and elementary classes.

Introduction
Teaching-learning process thrives upon the use of a diverse range of resources and a teacher is instrumental in not only deciding which resources to use in her/his class but also to procure them. Often teachers are heard complaining that there is a scarcity of resources and it adversely affects their teaching. However, there is a need to probe deeper into the meaning that we assign to ‘resources’ as such and interrogate whether our own perceptions of ‘resources’ are skewed. The importance of using appropriate resources at any level of education is well understood but here my focus is on primary and elementary level of education.

In primary grades, curricular subjects of Language, Mathematics and Environmental Studies (later

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Science and Social Science from Grade VI onwards) form the part of curricular subjects. Through Environmental Studies an integrated perspective is aimed to be developed in the learners and it is based on Science, Social Science and Environmental Education (Syllabus for classes at the elementary level, NCERT, 2006, p. 90). This integrated perspective cannot be developed until children learn the concepts with the help of different kinds of resources and are actively involved in their own learning. It's not just ‘learning’ Environmental Studies but ‘doing’ it. Thus, the use of appropriate resources is essential if one is to learn from one’s own activities. Resources can be of several kinds. To involve the learners in a subject like Environmental Studies, the teacher has to make use of lots of age appropriate, contextual and relevant resources. It really requires imagination, efforts and willingness on the part of the teachers to reach out and use different kinds of resources in teaching-learning. Additionally, a teacher must also make efforts to use meaningful substitutes for the resources which are required but not available.

The need of using concrete material and hands-on experiences at primary and elementary levels of schooling is inherent in the fact that children learn best when all their senses are involved in learning. “When children interact with things in their environment in a scientific manner, it is through using process skills; handling, manipulating, observing, questioning, interpreting, etc. The more they develop these skills, the more they can learn through their own activity and come to a real understanding of how the physical and biological parts of the world around them work” (Harlen and Elstgeest, 2000, p. 45). Thus, involving learners in an interaction with different resources can help them develop process skills which are an essential part of teaching-learning of Environmental Studies.

Sharp et al. (2012) explain different kinds of practical work that can take place while teaching-learning. It can be:

- A guided illustrative activity.
- An investigative activity including planning and carrying out scientific inquiry.
- The observation of a particular phenomenon.
- An activity to develop a particular skill.

Similarly, such different kinds of practical activities can be included in the pedagogy of environmental studies and a teacher can think of using different resources to carry these activities. The suggestive syllabus given by NCERT for the elementary classes (2006) also enlists useful resources that can be used while teaching concepts in different subjects. In environmental studies, resources such as child’s daily life experience, observation of the surroundings, folk stories and folk toys are recommended along with the use of newspaper
clippings, pictures, photographs, films and relevant story books. Surveying and collection of information as well as archaeological and historical accounts are also labelled as resources.

With the coming of smart boards and online knowledge boom, everything is available almost ready-made and in an instant. However, understanding the contextual meaning of learning and attempting to know the global as well as the local, it is more important to make the learning organic and lively rather than making it just outcome-driven and same for all kinds of learners. This means the teacher has to reach out to others in her institution, surroundings and dig out whatever she thinks can add to the learning experience of her learners.

**Suggestive Measures on How to Locate and Use Resources**

Learning to use different resources in pedagogy is an organic process and each teacher may have her own journey and experiences towards emerging as a resource-rich teacher. However, following are some of the suggestions that can be helpful in understanding how to avail and use resources in the pedagogy of Environmental Science.

- An important exercise of area mapping could be very beneficial in ensuring optimum use of easily available resources near the school. Teachers in particular must be aware of the locales and surroundings of their school. For this, teachers in group can gather information about places of interest near the school, local flora and fauna and socio-cultural conditions in the area. This will help the teachers to make the curriculum and its transaction more contextual and at the same time, learners will learn to relate in a better manner with their immediate surroundings.

The author recalls one of her experiences while teaching in a school when one teacher’s chance discovery of a lake in the close vicinity of the school became a great learning resource for all other teachers and learners. Learners collected the oral history about the lake by talking to the locals, learnt about flora and fauna near the water body and found out the possible factors of contamination of the lake.

- Human resources are of a great importance for any classroom. It means involving the people other than the teacher in the learning process of the child. The staff that works in the school; the gardener, nurse, supervisor, sweeper and guards can all offer experiences to the children to further their learning. Parents and grandparents of children can also be great resources in case the teacher knows fairly well about their professions and skills. Children learn real life lessons by interacting with them. So, this experience can be included in the teaching-learning whenever there is an opportunity to do so. When we talk about attitudinal change, such experiences go a long way in initiating a love for learning in the child and at the
same time make his/her learning real and contextual.

While working on the theme of mapping in Class V, the father of a child who was working as a Google employee for Google Maps, was invited to interact with the students about his work and about maps in general. Real life conversations emanate from experiences of this kind as students pose very interesting questions. On another occasion, while working on the theme of ‘waste management’, learners interacted with the sweeper and garbage collector of the school, they were thrilled to know the journey of the waste from their classroom to the landfill.

- There are numerous websites that give suggestions about use of different kinds of resources and give grass roots level ideas worth trying with the learners. With the upsurge of online world, one can make very good use of the learning tools that these webpages offer. Websites that offer video and audio clippings, activity ideas and enlist different places of interest for children should surely be looked into. At the end, it is a teacher who has to sift through these resources and see what works best for her learners.

On numerous occasions, videos downloaded from Youtube have added to the overall learning of the concept. Hands-on experiences and direct observation of the phenomenon cannot of course be replaced by showcasing of videos but at times videos prove to be very useful. While teaching the concept of ‘Natural Calamities’ in Class V, real life videos shot at the time of Tsunami that hit India on 26 December 2004 gave the learners a very different feel of the entire situation and they could relate with the havoc created by it. Used as prompts, these videos made the learners raise important safety issues. They could understand the gravity of the calamity after watching the video clippings.

- Networking with your immediate colleagues and from other nearby schools proves very useful. A teacher who has tried something wonderful with her learners has lot to share with other teachers about the idea. This way good ideas and practices spread and reach out to many.

The timely interactive meetings and reflective sessions helped me a lot as a teacher. There was a great deal to learn from each other. Our success stories and our pitfalls; all taught us something valuable. We worked not only in close collaboration with each other in our school but also interacted with the other teachers teaching in different branches of the school through a web portal.

- Make ample use of the outdoors and spend time with your learners exploring the surroundings. “Don’t forget the one of the best, and certainly the biggest, resource is outdoors” (Sharp et al., 2012, p. 90).
While teaching the theme of ‘insects’ in Class IV, the outdoors guided us tremendously. We moved beyond the usual examples of insects and gave the learners an opportunity to see the life of insects out there in the nature. On the basis of their observation of different insects and their body parts, they deduced the physical characteristics of the insects like they have three pairs of legs, one pair of antennae and their body is divided into three parts. On another occasion, the survey conducted in the nearby localities of the school made the children realise the hardships of people due to shortage of water. We believed, experiences of this kind would go a long way in sensitising our learners about environmental issues.

- Teachers can together create a small resource in the school wherein they can collect material and literature which is useful for the learners. Such resources can come in handy at the time of need and can engage the learners well in the classroom. Resources can not only be concrete articles but stories, poems, news articles, case studies, photographs, videos clippings and riddles can all be counted as resources.

Collecting and maintaining resources was something that helped us a lot. We made children our partners in that exercise. Whenever we got to know something that we thought would be interesting to know and explore, we shared it with others. Cocoon of silkworms, abandoned nests of weaver bird, tribal jewellery all adorned our classes at some point of time. These all prove to be great stimulus for learning.

- The last but nonetheless important point is to realise that children can be excellent resources for each other. So, it is important to encourage them to share their experiences and voice their opinions. Dalgety (1983) put it up very well when she says, “Although non-human resources are easier to obtain at short notice, the crucial role of human interaction must be acknowledged. Things can’t by themselves teach values” (p. 135).

Dialoguing was always considered important and children almost always raised crucial questions. While interacting with some MCD officials in their office about the cleanliness of the city, the children did not hesitate to ask why some of the walls of their own office looked so dirty with beetle-nut stains and why they do not keep their office clean if they claim to keep the entire city clean.

Hence, it is important to realise that carefully chosen resources can make learning fun and engaging. All that we as teachers need to do is to start relating with our own surroundings and environment in a larger sense. Schools are not closed
structures, there is a need to reach out to the community and nearby locales in order to make learning holistic and meaningful for the child.

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Children respond eagerly and readily to reading material and illustrations within their range of comprehension. Short poems and tales, picture stories and drawings have the magical quality of making children fly imaginatively to an altogether different time and place (Amar, 1943). In India, children’s literature is about 150 years old; children’s magazines lesser than that. Children’s magazines is a relatively new genre that is slowly but surely catching up with the rest of the literary world. For very young children of Classes I and II, there is hardly any magazine of good quality and affordable range (Enciso et al., 2010). Firkee Bachchon Ki brought out by the National Council of Education Research and Training (NCERT) is one such magazine. Primarily meant for the children of Classes I and II, the contents of the magazine are diverse. It contains children’s creative writings contextualised in their daily life experiences, with relevant and detailed illustrations supporting the text. The themes of everyday life such as trees, family, food, pets and games constitute the main subject matter of the magazine. As such, the magazine provides children with appropriate and fascinating reading material in a simple format and more importantly, from a child’s perspective. These enable children to understand and appreciate the myriad things around them: nature, their surroundings, the detailing of objects and so on. Initially therefore the magazine was launched to address the deeply felt need to provide children of government schools with supplementary reading material. Earlier, Firkee Bachchon Ki was brought out on a trial basis and was unpriced. Four issues later, and with growing demand, the magazine is now priced and soon to be registered.

In August 2014, the Government of India released the document Padhe Bharat Badhe Bharat. The document reiterates the government’s commitment to increase early literacy rates as a key strategy to help children
realise academic goods and quality of life. Classes I and II, which are educationally extremely important since they introduce literacy to children, do not receive preparation act attention and funds. The consequences of this mindset is particularly dismal for school in rural and interior areas. In the light of these, the document Padhe Bharat Badhe Bharat takes in enormous significance. Planned as a nationwide sub-programme to the Sarva Shiksha Abhiyan (SSA), one of the objectives of Padhe Bharat Badhe Bharat is to improve language development by creating an enduring interest in reading and writing with comprehension. Providing a print-rich environment, with non-textual material and children’s magazines are some of the ways in which this can be implemented.

*Firkee Bachchon Ki* is one such initiative taken up by the Early Literacy Programme at NCERT.

Illustrations is one of the major features of any children’s magazine, particularly so when the target audience is quite young. The illustrations in *Firkee Bachchon Ki* are quite attractive, in four colour and are contributed by well-known illustrators. They help children to develop imagination as well as creativity. “Creativity is a combination of motivation, openness/flexibility, curiosity and autonomy as well as divergent thinking” (Mitchell, 2006, p. 6). As Hilda Jackman notes, play inspires imagination, imagination inspires creativity, and creativity inspires explorations and so on (Jackman, 2009, p. 23). *Firkee Bachchon Ki* is thus an initiative towards comprehensive and unhurried time and space for children to imagine, explore and create. Moreover, the numerous illustrations used in the magazine to depict different aspects of daily life and nature attract the attention of the children towards various concerns. The illustrations of the magazine are so much associated with children’s thoughts that the children easily recognise the print as talk on paper and these also strengthen child’s visual imagination and interpretation of pictures. Colourful illustrations of the magazine attract children, almost making the characters of the content pop off the page and into everyday life.
The setting in most government schools continues to be dismal. In such a scenario, the magazine in general offers a different genre of reading material apart from that of the set course curriculum, which breaks the boredom of day-to-day studies.

The school curriculum normally generates monotonous schedule for children. Also, the schools nowadays have insufficient time or opportunity to engage in informal play. A brochure on ‘Firkee’ has been developed for wider dissemination. The brochure states that the magazine proffers children with plenty of reading materials in the form of rhymes, short stories and narratives, as well as language and numeracy based activities. All these reading materials are linked to issues familiar to the children and are age-appropriate. This in turn generates their interest in the magazine. Firkee in this way keeps hold of children’s curiosity and fascination and lead them towards reading. Children’s creativity accordingly gets a boost with crafts and activities of the magazine.
Moreover, the magazine is bilingual in nature. As highlighted in the Concept Note on Children Magazine (NCERT) this enables the children to broaden their understanding in Hindi and English languages by exposing them to both. It also led to an unconscious awareness of different scripts among young children. The bilingual nature of the magazine also increases the children’s mental ability to acquire knowledge and understanding through thought, senses and imagination. However, while the magazine is, in theory, bilingual, it does not give readers the ‘feel’ of a bilingual work. The cover page is to all practical purposes Hindi: the title, the short poem/narrative, even the subtitle.

The magazine also highlights children’s expressions and creativity by giving place to their drawings and writings. This encourages children to learn by doing through experimentation, imagination and explorations. This section of the magazine encourages the children to
become writers and illustrators in a very broad sense by prompting self-expression, stimulating creativity, and build feelings of competence and self-worth. Thus such space provided to children enables them to experience the feeling of ownership and also recognises the child as a reader.

In a nutshell, Firkee has a mix of reading levels. The magazine is an effort to provide utter joy and pleasure, help develop children’s imagination, offer a child time to envisage on experiences and happenings that have to do with real life. It is essential to support children to appreciate writing and illustrations, give children an awareness and recognition of fellow beings and sensitivity to flora and fauna. Hillman (1976) experiences with the contents of the magazine and with its language. Besides developing imagination and creativity, the contents of the magazine generate new ideas and cultivate interests in many things. In keeping with the Early Literacy approach (as enunciated in the Brochure on Early Literacy), in the process children learn more about the world and the people and things around. It also increases the children’s vocabulary and language skills. The magazine is a wonderful opportunity for the young children to cultivate a lifelong interest in literature and reading. As per the Concept Note on Early Literacy States, a child can learn in countless ways, so relying only on the set curriculum of learning can prove to be a setback. Thus, Firkee is one such initiative where a child can develop a sense of involvement as a reader, boost his/her creativity and a platform that offers a child unhurried time and opportunity for children to imagine, explore and create.

Firkee Bachchon Ki brought out by NCERT has also begun to inspire clones at regional/state levels. One such attempt is Chirput, a children’s magazine in Konkani, brought out by Konkani Bhasa Mandal, Goa. Four issues have been published so far. Chirput is an example of the continuous academic support and guidance being provided to States/UTs for their Early Grade Reading Programmes.
Conclusion

While the publication is lauded, its dissemination remains a matter of concern. The latest issue of the magazine is distributed among teachers and teacher educators at workshops and training programmes; displayed in NCERT stalls and book fairs and distributed in schools through state initiatives and SSA funds. Now that the magazine is priced, a subscription form inserted in its pages would facilitate dissemination; however, for that to happen, it needs to be registered. It would be a pity indeed if non-registration leads to children losing out on the delightful magazine.

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Strategies to Strengthen Understanding of Science Concepts

Bharti Dogra*

ABSTRACT

Science teachers use a variety of strategies for supporting learning of diverse students. These strategies can be used during different stages of planning a lesson plan — before teaching to get an idea about their previous knowledge, to prepare them for the lesson, during the lesson, and for assessing their learning. These strategies can help in scaffolding learning of the students. The selection of the strategies can be done keeping in mind nature of the topic, learning needs and learning styles of students.

Introduction

Teachers need to equip themselves with different strategies that suit diverse classrooms. Students in these diverse classrooms come from different backgrounds and their learning needs and learning styles are different from each other. Bringing a variation in teaching strategies can support learning of diverse students. There are some strategies used before teaching a topic so as to match the knowledge demands of the topic with the previous knowledge of the students. This is possible by making connections between familiar and new knowledge, generating questions and giving suitable examples. There are other strategies which are used during teaching such as prompting student’s thinking during transaction of the lesson plan. There are seven comprehension strategies used during this part of the lesson such as making connections, generating questions, creating visual and sensory images, making inferences, determining importance, synthesising and monitoring learning. The strategies used for consolidating learning engage students in refining their comprehension and applying learning.

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Strategies to Strengthen Understanding of Science Concepts

This paper discusses various strategies to be used by science teachers for diverse learners at different stages of the lesson plan.

**Strategies for Strengthening Students’ Understanding**

While deciding any strategy at any stage of the lesson plan, a teacher must ensure that (a) a strategy must be selected for enhancing learning. A strategy must be decided on the basis of the previous knowledge of the learners and nature of the content; (b) the strategy selected must prompt the comprehension processes of the learner. Merely following all the steps of a strategy does not mean that students are automatically engaged in thinking. An evaluation of the strategy needs to be done regularly. Students can also be involved in self-assessment/peer assessment. Sessions on self-assessment by learners must be an inseparable part of each strategy used in the classroom; (c) the strategy must be adapted and readapted continuously keeping in mind the needs of the students and the curriculum. A strategy which was effective in one situation cannot show the same results in another classroom situation. There are many strategies for strengthening students’ science understanding such as:

I. **Anticipation Guides:** An anticipation guide (Herber, 1978) helps students in examining their knowledge and beliefs about a topic and then prompts them to reassess their thinking after reading a text. For example, a science teacher teaching Chapter 2 in Class VIII, may decide that students studying Microorganisms should focus attention on the following essential knowledge as they read:

   i. Microorganisms are organisms which are so small that they cannot be seen by naked eyes (a magnifying glass or microscope is needed).

   ii. Microorganisms are classified into four major groups. These groups are bacteria, fungi, protozoa and some algae.

   iii. Viruses like bacteria, fungi, protozoa and algae are also microscopic. They, however, reproduce only inside the cells of the host organism, which may be a bacterium, plant or animal.

   iv. Some microorganisms cause diseases like cold and cough, influenza (flu), polio and chicken pox that are caused by viruses.

   v. Diseases like dysentery and malaria are caused by protozoa (protozoan) whereas typhoid and tuberculosis (TB) are bacterial diseases.

   vi. Microorganisms are also useful in many ways like in the formation of curd, antibiotics and alcohol.

   A teacher must predict what students already know about the topic so that they can thoughtfully respond to items on an Anticipation Guide. In case students lack sufficient background knowledge they may say ‘I don’t know’. But most of the students...
may be having some experience or knowledge about microorganisms. Some must have seen fungus growing on bread, spoilage of food during summer, suffered from some microbial disease in their life, or seen curd formation at home.

The handouts of anticipation guides can be provided to students. Spaces for individual responses can be provided in the handout. Students after writing their responses individually can share it in a group. For each statement, students provide justification for their decision, talk about their thinking and share their insights and knowledge. Later students can share their thoughts and knowledge in a whole-class discussion.

II. Analogy Charting: Analogies are powerful tools to help students understand new information/concepts. For example:

i. Cells are the building blocks of living organisms, like bricks are the building blocks of a school building.

ii. Atoms are the building blocks of matter, like bricks are the building blocks of a school building.

iii. Forests are lungs on the surface of the earth, like lungs in your body.

Analogies help students link new concepts to already known concepts. Students can easily relate newly learned information with their personal experiences as a bridge to understanding new and unfamiliar information. Analogy charting (Buehl, 1995; Buehl and Hein, 1990) is a classroom strategy that provides a

**Making Informed Choices using Previous Learning Experiences**

**Microorganisms: Friend and Foe**

- Read the following statements about different types of microorganisms, their uses and harmful effects.

- Consider what you know or have heard about each statement. Check the statements you think might be supported by the scientific evidence.

- Talk with your group members about why you made your choices. Be prepared to share any information you know or have heard about microorganism as your group discusses the following five statements:

  i. Some microorganisms can be seen with the naked eye.
  
  ii. Microorganisms are useful to us.
  
  iii. Microorganisms cause diseases in man, animals and plants.
  
  iv. Viruses are different from other microorganisms.
  
  v. Antibiotics are medicines obtained from microorganisms and used for killing disease causing microorganisms.

*Figure 1. Anticipation Guide on Microorganisms: Friend and Foe*
visual framework to students to analyse key relationships in an analogy in depth. Analogies can help students in perceiving similarities and differences between a new concept and something familiar in their lives.

III. Brainstorming Strategies:
Brainstorming strategies provide a promising framework for eliciting students’ prior knowledge before learning. Several classroom variations may be used: LINK (list, inquire, note, and know), Knowledge Mapping, Knowledge Ladders, and Alphabet Brainstorming.

i. LINK: LINK (Vaughan and Estes, 1986) is a brainstorming strategy that encourages student-directed discussion about their knowledge of a topic. A teacher can decide prompt “What words or phrases come to mind when you think of nuclear bomb?” will trigger a number of responses. Let them put down these associations and then discuss and expand the list in groups (of two students). After a thorough discussion let each group write the words on the blackboard. The nuclear bomb example is likely to generate a keyword or concept related to the material that will trigger responses from his/her students. Teacher can write this word on the blackboard and then can give (a few minutes) to write on a piece of paper as many meaningful associations as they (students) can think of. For example, the

![Analogy Chart on Mammalian Cell and Factory](image)

Figure 2. Analogy Chart on Mammalian Cell and Factory

A keyword or concept related to the material that will trigger responses from his/her students. Teacher can write this word on the blackboard and then can give (a few minutes) to write on a piece of paper as many meaningful associations as they (students) can think of. For example, the

<table>
<thead>
<tr>
<th>New Concept</th>
<th>Familiar Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammalian Cell</td>
<td>Factory</td>
</tr>
<tr>
<td><strong>Similarities</strong></td>
<td><strong>Differences</strong></td>
</tr>
<tr>
<td>1. Both are identifiable units.</td>
<td></td>
</tr>
<tr>
<td>2. A cell is a part of a larger organism just as a factory is a part of society.</td>
<td></td>
</tr>
<tr>
<td>3. Both use raw materials and convert them into different products.</td>
<td></td>
</tr>
<tr>
<td>1. A mammalian cell is living whereas a factory is a non-living structure made up of bricks, cement, wood, etc.</td>
<td></td>
</tr>
<tr>
<td>2. The raw materials used are different.</td>
<td></td>
</tr>
<tr>
<td>3. A cell produces proteins for internal use and export whereas factories produce products for internal and external use.</td>
<td></td>
</tr>
</tbody>
</table>
list of associations: Hiroshima, Nagasaki, radiation, U.S., Pakistan, fiction, Japan, fission, radioactive, and so on. Then the teacher can initiate a discussion on the topic. Students will discuss with their peer group for further clarification. Students interact and extend their understanding of the topic. After students’ inquiries, and comments, tell them to write what they have learned about the topic.

ii. **Alphabet Brainstorming:** Alphabet brainstorming (Ricci and Wahlgren, 1998) is effective when students have extensive background knowledge, especially when they are engaged in looking back over previous instruction and learning. The resulting chart serves as a prompt for reviewing terms, facts or events.

- Provide each student with a blank Alphabet Brainstorming Chart. Because this activity involves rigorous review, make students work in collaborative teams, although each individual student should fill in a personal copy of the chart. Select only broad topic areas for a prompt, such as the Acids, Bases and Salts (Chapter 5, Class VII, Science) to prompt students to activate prior learning about this topic.
- Students work with partners or in groups to generate a related term or meaningful association that begins with each letter of the alphabet. Ask students to fill in as many boxes as possible within a designated time period (usually about seven to eight minutes).
- Ask teams to explain their terms with the entire class and briefly justify how each term fits with the topic. In particular, students will want to hear if other groups came up with associations for difficult letters.
- After reading and expanding their understanding, teams can return to their alphabet charts and add new meaningful items related to the topic of study in a different colour ink (to signal new learning).

iii. **Knowledge Mapping:** With knowledge mapping (Buehl, 2011) one creates a visual concept map of meaningful words and phrases associated with a key topic. A teacher can use this strategy for getting an idea about the

<table>
<thead>
<tr>
<th>A</th>
<th>Acids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bases</td>
<td>Baking Soda</td>
</tr>
<tr>
<td>Curd</td>
<td>Common Salt</td>
</tr>
<tr>
<td>Detergent Solution</td>
<td>DNA</td>
</tr>
<tr>
<td>E</td>
<td>Evolution of Heat</td>
</tr>
<tr>
<td>F</td>
<td>Filter Paper Formic Acid</td>
</tr>
<tr>
<td>G</td>
<td>Grapes</td>
</tr>
<tr>
<td>H</td>
<td>HCl</td>
</tr>
<tr>
<td>H2SO4</td>
<td>Indicators</td>
</tr>
<tr>
<td>I</td>
<td>Indigestion</td>
</tr>
<tr>
<td>J</td>
<td>Lemon Juice</td>
</tr>
<tr>
<td>Lactic Acid</td>
<td>M</td>
</tr>
<tr>
<td>N</td>
<td>Nitric Acid Nitrogen dioxide</td>
</tr>
</tbody>
</table>
prior knowledge of students. Again a teacher can provide an appropriate cue word and then students can work with partners or in teams to generate 4–6 highly meaningful words or phrases that provide useful knowledge about the term. Then students explain their maps to the class and elaborate on the relationships of all the terms and phrases.

iv. Knowledge Ladders: Knowledge ladders (Buehl, 2011) are a more extensive brainstorming option, with the added challenge of using the letters of the cue word to construct meaningful associations. Like, Knowledge Mapping, this strategy is largely predicated on student review of prior learning. Teacher can decide an appropriate cue word or phrase, which ideally should consist of about 8–12 letters to extend the number of possible meaningful links. A Knowledge Ladder for Digestion is shown in Figure 5. Because this word has NINE letters, students are expected to come up with nine rungs in their knowledge ladder of digestion. A letter can appear in any part of a meaningful word or phrase.

Use of Letters of the Cue Word (DIGESTION in this case) for Constructing Meaningful Associations

- FooD breakdown
- Intake of food
- Grinding
- Egestion
- Stomach
- Blood Transport
- Ingestion
- Oesophagus
- AppeNdix

Figure 5. Use of Letters of the Cue Word for Constructing Meaningful Associations
Case 1: Aarti is teaching Chapter two on ‘Components on Food’ in Class VI Science. This chapter covers components of Food, and their sources, functions and tests for showing their presence in different food items. Aarti wanted to plan her lesson on the previous knowledge of students so she wrote a word FOOD on the blackboard and asked students to construct a ‘Knowledge Map’ on it. Then she divided the class into pairs and allowed them to discuss their maps and finally arrive at some conclusions. Then they presented their maps and explained in detail.

Case 2: Amar is teaching Chapter four on ‘Heat’ in Class VII Science. This chapter covers difference between hot and cold, reading a thermometer, convection and radiation. Amar gives a prompt “What happens when you shift from a cold hill station to a hot place like Rajasthan desert in a summer month?” This will trigger a number of responses from students. Allow them to put down these responses and then discuss and expand the list in groups (of two students). After a thorough discussion let each group write the words on the blackboard. The shifting from a cold hill station to a hot desert place in summer is likely to generate a list of consequences: Change in temperature, more sweating, use of ACs and refrigerators, drinking more water, loss of appetite, less likely to move out, wearing cotton clothes, etc.

Case 3: Rama is teaching Chapter seventeen on ‘Forests: Our Lifeline’ in Class VII Science. This chapter covers a visit to a forest, inter-relationship of plant, soil and decomposers in a forest, role of trees in the water cycle. Rama decides that students studying Forests: Our Lifeline should focus attention on the following essential knowledge as they read:

- There are different types of trees in a forest.
- Forests are very useful for living organisms (including man).
- We get different forest products.
- Forests are habitats for wild animals and help in sustaining different types of food chains.
- Food chain is a linear relationship in which one organism is eaten by another.

Rama prepares a handout where she focuses on the above mentioned points and expects her students to share their experiences and beliefs related to each statement given in the handout. Students after writing their responses individually can share it in a group. For each statement, students provide justification for their decision, talk about their thinking and share their insights and knowledge. Later students can share their thoughts and knowledge in a whole-class discussion.

Case 4: Alka is teaching ‘Growth in Plants’ in Class VI and she instructs her students to germinate black grams at home and to maintain a reflective diary based on their observations and explaining those observations, like what is happening? Why is it happening? Then write similarities and differences between ‘Growth in Plants’ and ‘Growth in Animals’. In the class, a discussion was held and then students shared their views.
IV. Metacognitive Strategies: In their research report, *How People Learn*, Bransford, Brown and Cocking (2000) indicate that using metacognitive strategies as a part of instruction can help students learn to take control of their own learning. They suggest that metacognitive strategies are key findings by learning scientists, which will help teachers understand student learning. Science teachers have an important responsibility of teaching students about their own thinking. Teaching about thinking is more important than their more obvious responsibility of teaching the science content. Teaching about thinking helps them in understanding their learning styles and science teachers can individualise their instruction keeping in mind their learning needs. Teachers can adopt a number of metacognitive strategies. Science teachers can make their students learn and use many metacognitive strategies such as:

i. Consciously identifying what they already know: For example, while they are studying a chapter on life-processes, students can make a list of the related concepts already studied such as cells, tissues, organs, organ systems and organisms. How are these arranged in a hierarchy? What is the relationship between these different levels? This knowledge will help them in understanding ‘life processes’ in a human body.

ii. Determining how performance will be evaluated: Determining how performance will be evaluated is an important point to focus on. If performing hands-on activities is the criteria for evaluation, then students can focus more on hands-on activities related to a concept. In another case, teacher decides to evaluate students on the basis of short answer questions, then obviously students can make preparation keeping the end in mind.

iii. Estimating the time required to complete a task: Estimating the time required to complete a task is an important part of a planning process. A student can always keep more time for a task which is new and difficult. For example, once we realise that we have to read and comprehend a difficult scientific concept and we may need reading it more than once, or need to look into glossary frequently or it may require more discussions with the teacher for further clarification, then accordingly more time can be kept for such tasks.

iv. Planning study time into their schedule and setting priorities: Students need to do reading, making diagrams, submitting homework, planning for formative and summative examinations,
and preparation for participation in curricular and co-curricular activities. Another important metacognitive skill is planning study time for each activity and then scheduling them keeping in mind the priorities.

v. Making a checklist of what needs to happen and when: In order to ensure timely completion of work, a checklist displaying the name of the task along with the expected date of completion can be displayed at an appropriate place in the study room.

vi. Organising materials: The different types of materials related to tasks planned such as learning material, colours, concept maps, illustrations, examples must be collected and organised properly, keeping in mind the requirement in the calendar. This helps in minimising searching time and thereby enhancing efficiency.

vii. Using strategies like outlining, mnemonics, diagramming and so on: Outlining is a strategy which helps in remembering the content during reading. The outlines can be created by noting down bold major headings and secondary headings. After thoroughly reading the content followed by outlining, a reader by now develops a good understanding about relationships among different ideas as well as gaps in knowledge which can be further clarified. Mnemonics are ‘meaningful words’ where each letter in a word stands for a step in a process or some important chunks of information about a particular concept, for example, mnemonic OTE means setting objectives for a task, transaction and evaluation. The difficult reading material can be understood easily by creating an actual or mental image of the information or by drawing a picture or diagram. Therefore, these three metacognitive strategies outlining, mnemonics and diagramming make learning and understanding task easier and also help in memorising the information.

viii. Reflecting on the learning process, keeping track of what works and what doesn’t work: Students must be given opportunities to reflect on their learning. Writing logs/journals is a good activity which helps a student have a dialogue with oneself. Students will understand their strengths and weaknesses and will further realise the need for improvement.

ix. Monitoring learning by questioning and self-testing: Metacognitive strategies focus on students taking control of their own learning by asking questions and testing themselves. It is self-regulated learning. A learner reads, comprehends and tests his/her learning by asking questions and self-testing.

x. Providing his/her own feedback: A learner tests his/her knowledge and then provides feedback too on the tested material.
xi. Keeping concentration and motivation high: Motivation is the main driving force to make one work tirelessly. Learners need to concentrate on the learning of tasks and self-motivation is required for achieving this goal.

Summing Up
Science teachers, like other disciplines can select different strategies and embed them in the lesson plan for comprehension, finding out their previous knowledge and matching it with the demands of the content to be taught, scaffolding and developing metacognitive capabilities. A variety of strategies not only makes a science teacher better equipped but also caters to the diverse needs and learning styles of students. Students learn to develop linkages, retrieve information from memory, interact in groups, participate in discussions and present their findings meaningfully in classrooms.

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Elementary Education through KGBVs— A Case Study

Patanjali Mishra*

ABSTRACT

Education is related to our existence. Denial of education is related with denial of living. Education is a basic human right that increases the economic, social and political opportunities available to an individual. The state of elementary education in India is dismal. Government is taking every possible step but still we are not able to consolidate over the efforts. Keeping in view the dilapidated condition of elementary education of girls, among these, National Programme for Education of Girls at Elementary Level (NPEGEL), Mahila Samakhya (MS) and Kasturba Gandhi Balika Vidhyalaya (KGBV) are prominent, which are running across the country. KGBV is a very ambitious scheme of Government of India which is targeted exclusively at girls of disadvantaged sections of the educationally backward areas of the country. This research paper is an attempt to assess the achievement level of students of KGBVs and the physical infrastructure available to them.

Introduction

As we reflect over the last 68 years of Indian independence, the progress of elementary education in our country does not seem to be in a very good condition. Although, the historic 2011 Census of India revealed that 74.04 per cent of the people (82.14 per cent men, 65.46 per cent women) are now literate, the Census also revealed a decadal jump of 6.29 per cent in the literacy rate among men and 11.30 per cent among women. Uttar Pradesh recorded 11.41 per cent jump in literacy rate. Despite all efforts of Government of India (GOI), the gender gap in literacy rate is clearly visible (16.68 per cent). To bridge the gap of gender-disparity in education, various schemes have

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been started and incentives for girls’ education have been taken up by the Government of India. According to MHRD’s revised guidelines for implementation of KGBVs, among these, the National Programme for Education of Girls at Elementary Level (NPEGEL), Mahila Samakhya (MS) and Kasturba Gandhi Balika Vidhyalaya (KGBV) are prominent. KGBV is one such ambitious scheme of GOI which is exclusively targeted at girls of disadvantaged sections of the educationally backward areas of the country.

**Background of the Study**

Education is a basic human right that increases the economic, social and political opportunities available to men and women. After independence, the Indian government has expressed a strong commitment towards education for all. Though the gender gap in educational involvement has reduced over the years, it is still a matter of concern (MHRD, 2014, Girls Education).

It is evident from Tables 1 and 2 that gender gap in literacy is as high as 21.7 per cent; for elementary level it is 0.16.

**Table 1**

<table>
<thead>
<tr>
<th>Census Year</th>
<th>Persons</th>
<th>Males</th>
<th>Females</th>
<th>Male–Female Literacy Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>18.33</td>
<td>27.16</td>
<td>8.86</td>
<td>18.30</td>
</tr>
<tr>
<td>1961</td>
<td>28.30</td>
<td>40.40</td>
<td>15.35</td>
<td>25.05</td>
</tr>
<tr>
<td>1971</td>
<td>34.45</td>
<td>45.96</td>
<td>21.97</td>
<td>23.98</td>
</tr>
<tr>
<td>1981</td>
<td>43.57</td>
<td>5.38</td>
<td>29.76</td>
<td>26.62</td>
</tr>
<tr>
<td>1991</td>
<td>52.21</td>
<td>64.13</td>
<td>39.29</td>
<td>24.84</td>
</tr>
<tr>
<td>2001</td>
<td>65.38</td>
<td>75.85</td>
<td>54.16</td>
<td>21.70</td>
</tr>
<tr>
<td>2011</td>
<td>74.04</td>
<td>82.14</td>
<td>65.46</td>
<td>16.68</td>
</tr>
</tbody>
</table>

*Source: Census of India 2011*

**Table 2**

<table>
<thead>
<tr>
<th>Year</th>
<th>Gender Disparity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
</tr>
<tr>
<td>1950–51</td>
<td>0.49</td>
</tr>
<tr>
<td>1960–61</td>
<td>0.43</td>
</tr>
<tr>
<td>1970–71</td>
<td>0.32</td>
</tr>
<tr>
<td>1980–81</td>
<td>0.29</td>
</tr>
<tr>
<td>1990–91</td>
<td>0.25</td>
</tr>
<tr>
<td>2000–01</td>
<td>0.17</td>
</tr>
</tbody>
</table>

*Source: Based on selected educational statistics, Department of Education, Ministry of HRD.*
The National Evaluation of the KGBVs in two rounds has been conducted by the Department of School Education and Literacy, Ministry of Human Resource Development, Government of India in 2007. A total of 12 states were covered in each round. For round I, six teams were constituted to carry out the evaluation. The names are given below:

1. Andhra Pradesh and Madhya Pradesh — Rukmini Benerji and Subhashini Paliwal.

The team leader was Vimala Ramachandran. This team was briefed by Government of India on 29th of January 2007. Field visits were done in February 2007. The entire team met in Delhi on 23rd and 27th of February 2007 to present and discuss the state visits and agreed on the consolidated national report.

Since first round of evaluation focused only on 12 states, another National Evaluation (Round II) of the KGBV scheme was commissioned by the same body of Government of India in another 12 states. Six teams were again constituted to carry out evaluation.

1. Assam and Meghalaya — J.M. Abhyankar and Mona Yadav.
2. Haryana and Maharashtra — J. Kameshwari and Sharda Jain.
5. Uttarakhand and Chhattisgarh — Nishi Mehrotra and Subhashini Paliwal.

Again the team leader was Vimala Ramachandran. The team was briefed by GOI on 19 November 2007. Field visits were done in November and December 2007. The entire team met in Delhi from 7th to 9th December 2007 to discuss the state visits and the consolidated national report.

Need of the Study

The National Evaluation of the KGBV scheme highlighted the common issues emerging from the state reports. This report concludes:

1. The programme was launched in record time and commitment to reach to out-of-school girls was evident.
2. It is well-received by the community and it has been able to respond to the felt need of families in diverse poverty situation.
3. The access-related objectives have been met in most areas.

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2. It is well-received by the community and it has been able to respond to the felt need of families in diverse poverty situation.
3. The access-related objectives have been met in most areas.
4. Uttar Pradesh (U.P.) is identified as the state where never-enrolled girls have also been welcomed.

5. Regarding the infrastructure of these schools, it is a matter of concern that the proper arrangement of toilets/bathrooms and ventilation is a serious issue in U.P. Many girls have got scabies and other skin infections only due to the bad arrangement of basic facilities.

6. The enriched curriculum involves different types of activities such as Karate, cycling, dance, music, theatre and so on.

7. The scheme has been able to reach out to SC, ST, OBC and Muslim girls in backward and remote regions of India.

8. It was also noted that the presence of a woman coordinator at the State/district level makes significant difference in the ability of the government to not only adhere to the schematic pattern but also ensure that the KGBVs are sensitive to a range of physical/medical needs of adolescent girls.


   It is worth noting that 125 KGBVs were sanctioned in U.P. at the time of evaluation and 98 were in operational condition. Out of these 98 schools, only three schools were selected for a macro-study. It is obvious that U.P. is a diverse state representing diversity not only in geographical locations but in socio-cultural aspects too. Hence a micro-study of a KGBV is needed to get a more realistic picture. Eastern U.P. has its own historical, political, economic and social-cultural characteristics and has more cultural barriers for girls’ education. Thus, a KGBV located in Ballia was selected. The National Evaluation (Round I) report is silent about quality of teaching-learning and providing academic support to the girls in KGBV, one of the important objectives of the scheme. The report said that access-related objectives have been achieved and it was well-received by the communities. Hence, it is pertinent to enquire about the contributions of this scheme in providing academic support to disadvantaged girls in terms of teaching-learning environment and about the levels of achievement of girls studying in KGBVs. Thus it was felt that a micro-study focusing on all the aspects of a particular KGBV is needed. Besides these, after the National Evaluation 2007 new revised guidelines for the implementation of KGBVs are laid down by the Government of India. Hence a knowledge gap was perceived by the researcher which demands a further evaluative study in the light of new recommendations.

Objectives of the Study

The present study was undertaken with the following main objectives:

- To study the availability and quality of physical infrastructure and human resources in the selected KGBV.
To measure the achievement level of the girls studying in the KGBV.

**Method used for Present Study**

The present study is aimed at studying the problems of the girls studying in KGBVs. The case study method was adopted to obtain the information and viewpoint of students. Case study is a technique to explore the current problems, to evaluate present condition whether they are good or bad, favourable or unfavourable.

**Description of the Case**

The school selected for the case study is situated in the Bansdeah tehsil of Ballia district. The school is situated one kilometre from the headquarters of Bansdeah tehsil. The place where the school is situated is well-connected by road. The Bansdeah tehsil has a high percentage of SC population. The tehsil comes primarily under the agrarian belt with very little industrialisation.

There are four teachers in the school: three full-time and one part-time. Eighty three (83) children are enrolled in the school.

As Table 3 shows, literacy is very asymmetrically distributed among the sexes in Uttar Pradesh. Compared to the literacy figure of 77.28 per cent for men in 2011, the corresponding figure of women in Uttar Pradesh is 51.36 per cent. This places the gender gap in literacy levels of Uttar Pradesh at almost 25.92 per cent, which is higher than the national average of 16.68 per cent.

**Tools of the Study**

The selection of an appropriate tool depends on various factors such as the objective of the study, availability of test material, researcher’s competence in administration of test, reliability and validity of test.

To fulfill the purpose of study, following tools were used.

**Self-developed Observation Schedule**

To check the physical and human infrastructure of the school a self-developed observation schedule was used by the researcher. This schedule contains ten (10) items related to the school’s infrastructure.

**Achievement Test of ASER**

Achievement tests developed by ASER for Hindi, Mathematics and English for Classes VI, VII and VIII were administered to the students.

**Research Procedure**

To assess the condition of physical infrastructure and human resources available in the school, a self-developed...
observation schedule was used by the researcher. Observation schedule contains aspects related to physical infrastructure and aspects related to human infrastructure. The researcher observed carefully the availability of infrastructure and condition was assessed with the help of that observation schedule.

The achievement tests of Hindi, English and Mathematics of ASER were administered to the students and checked as per the norms and rules of the ASER achievement test.

**Availability of Physical Infrastructure**

The building in which the selected Kasturba Gandhi Balika Vidhyalaya runs, is a makeshift/temporary arrangement, with the order of District Magistrate. This KGBV runs in an adjacent part of the Government Girls’ High School (GGHS). Not only this, it was also found that there was no arrangement of separate buildings for school and hostel. In the daytime classes used to run in the rooms provided by the Government Girls’ High School (GGHS), and at night the girls used to sleep in the same room. It is a pathetic condition because they have to accommodate in the three rooms and a lobby available to them. As the number of students is fairly high, it becomes very tough for the students to adjust in such a small place. It has been found that this GGHS school is not very far from the villages of the students so the students have easy access to home. The head teacher who is also Warden of the school informed the researcher that the KGBV’s building is under construction.

**Table 4**

**Physical Infrastructure**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Items</th>
<th>Criteria</th>
<th>Quality description of existing Physical Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Building</td>
<td>Look</td>
<td>Simple</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quality</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of Rooms</td>
<td>Insufficient (Only 4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surrounding</td>
<td>Simple</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Availability of Common Room</td>
<td>No</td>
</tr>
<tr>
<td>2.</td>
<td>Drinking Water</td>
<td>Availability</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mode of Availability of Water</td>
<td>Stored+ Handpump</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type of Container</td>
<td>Synthetic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cleanliness</td>
<td>Monthly</td>
</tr>
</tbody>
</table>

Elementary Education through KGBVs — A Case Study
| 3. | Toilets | Availability | Yes  
|     |         | Type         | Closed  
|     |         | No. of Toilets | Insufficient (Only 3)  
|     |         | Regular Supply of Water | (for all girls + staff)  
|     |         | Separate Arrangement for Staff | Yes  
|     |         | Cleanliness | No  
|     |         | Use of Disinfectants | Satisfactory  
|     |         |            | Yes  
| 4. | Playground | Availability | Yes  
|     |         | Size         | Adequate  
|     |         | Condition   | Average  
|     |         | Types of Games | Indoor + Outdoor  
| 5. | Electricity | Availability | Yes  
|     |         | Alternative Facility | Yes, in the form of Solar light  
| 6. | Room/Classroom | Size         | Adequate  
|     |         | Lighting     | Natural + Artificial  
|     |         | Ventilators + Windows | Yes  
|     |         | Seating Arrangement | On mat  
|     |         | Furniture     | Table and Chair only for staff  
|     |         | Size of Blackboard | Average  
|     |         | Condition of Blackboard | Good  
| 7. | Library  | Availability  | Yes  
|     |         | Facility of Reading Room | No  
|     |         | Books are Systematically Arranged | Yes  
|     |         | Types of Reading Material | Storybook + Textbook  
|     |         | Furniture     | Not available  
|     |         | Library Period | No  
| 8. | TLM (Teaching Learning Material) | Availability | Yes  
|     |         | Girls Get Learning Material | Yes  
|     |         | Quantity of TLM in Proportion to No. of Students | Insufficient  

The Primary Teacher: October 2015
<table>
<thead>
<tr>
<th>9.</th>
<th>Food</th>
<th>Variability</th>
<th>Good</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Quality</td>
<td>Good</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Service</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Furniture in Mess</td>
<td>Not available</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sufficiently Stocked</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Where Do They Eat?</td>
<td>On Mat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Breakfast</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No. of Meals in a Day</td>
<td>Two</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type of Food</td>
<td>Vegetarian</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cleanliness</td>
<td>Good cleanliness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Distance between Kitchen and Place</td>
<td>Sufficiently far</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fuel</td>
<td>Gas + Coal</td>
</tr>
</tbody>
</table>

In the given building there are four rooms. One room is for office-work and library. The warden of the hostel and one more teacher live in the same room. Other three rooms are used for classes and as living place for girls. No problem of ventilation was noticed, and windows and lighting facility was found there. Artificial as well as natural light was available. However, seating arrangement in the school was not appropriate. No furniture was available in the school and only mats were used. Blackboards were in good condition.

The facility of drinking water was up to the mark. Both water storage facility and handpump facility were available. The water container was synthetic and was cleaned every month.

There were only three toilets and three bathrooms, which is surely insufficient for eighty three (83) girls. This was a serious issue in this school. Since there were only three toilets, it simply means that there was no separate arrangement for staff and students. But there was regular supply of water. Toilets were in good condition and disinfectants were regularly used in them.

Since two schools were running in the same campus, the playground was also jointly used by the students of both schools. The size of the playground was adequate. The existing condition of playground was satisfactory. The games played by girls were highly gendered. Very few girls were interested in playing cricket or football. Most of the girls played rope-jump, Kabaddi, Kho-kho and carrom-board.
Analysis of Human Resources

Table 5

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Human Resources</th>
<th>No.</th>
<th>Ratio with Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>No. of Students</td>
<td>83</td>
<td>–</td>
</tr>
<tr>
<td>2.</td>
<td>No. of Teachers</td>
<td>4</td>
<td>1/21 (approx.)</td>
</tr>
<tr>
<td>3.</td>
<td>No. of Non-teaching Staff</td>
<td>1</td>
<td>1/83</td>
</tr>
</tbody>
</table>

Table 5 shows that the ratio of teachers and students is approximately 1/21 and that of students and non-teaching staff is 1/83. When it was asked whether more staff is needed to take care of management and administration, the head-teacher stated that there were only three full-time teachers and one part-time teacher, which is surely insufficient. She opined that it becomes really tough for teachers to manage the administration and teaching-learning process both at the same time. There was only one non-teaching staff for kitchen-service, which is totally inadequate.

Analysis of Achievement Level of Students

To assess the achievement level of students, the achievement test of Hindi, English and Mathematics of ASER was administered on the students of Classes VI, VII and VIII. The test was administered on 48 students, 17 students were from Class VI, 21 students were from Class VIII, and rest (10) students were from Class VIII. The achievement level of students is divided into three categories.

Table 6

Achievement Level of Class VI

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Subject</th>
<th>No. of Students Appeared in Test</th>
<th>Achievement Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Good</td>
</tr>
<tr>
<td>1.</td>
<td>Hindi</td>
<td>17</td>
<td>10 (58.82%)</td>
</tr>
<tr>
<td>2.</td>
<td>English</td>
<td>17</td>
<td>1 (5.88%)</td>
</tr>
<tr>
<td>3.</td>
<td>Maths</td>
<td>17</td>
<td>10 (58.80%)</td>
</tr>
</tbody>
</table>

Table 7

Achievement Level of Class VII

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Subject</th>
<th>No. of Students appeared in test</th>
<th>Achievement level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Good</td>
</tr>
<tr>
<td>1.</td>
<td>Hindi</td>
<td>21</td>
<td>16 (76.19%)</td>
</tr>
<tr>
<td>2.</td>
<td>English</td>
<td>21</td>
<td>7 (33.33%)</td>
</tr>
<tr>
<td>3.</td>
<td>Maths</td>
<td>21</td>
<td>12 (57.14%)</td>
</tr>
</tbody>
</table>
1. Good
2. Satisfactory
3. Below average

Table 6 clearly reflects that the achievement of students in Hindi and Mathematics is satisfactory, but the achievement in English is very poor.

Table 7 reveals that the achievement level of students in all subjects has increased but the performance of students in English is continuously poor. Although achievement in English language has also got little improvement.

Table 8 clearly shows that achievement in all subjects has got improvement. The achievement in Hindi is 100 per cent and all students are performing well in Hindi. In Maths and English too, the achievement of students has improved. This interpretation clearly shows that the students are doing well in KGBVs.

**Table 8**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Subject</th>
<th>No. of Students Appeared in Test</th>
<th>Achievement Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Good</td>
</tr>
<tr>
<td>1.</td>
<td>Hindi</td>
<td>10</td>
<td>10 (100%)</td>
</tr>
<tr>
<td>2.</td>
<td>English</td>
<td>10</td>
<td>6 (60%)</td>
</tr>
<tr>
<td>3.</td>
<td>Maths</td>
<td>10</td>
<td>7 (70%)</td>
</tr>
</tbody>
</table>

**Good Practices**

During the case study the researcher came across some of the good practices in the concerned school. Some promising initiatives are as follows:

1. The local leaders, gram-pradhan and panchayat members facilitated their links with the community and in reaching out-of-school girls and also motivating parents to identify girls who have dropped out of schools.
2. The emphasis on co-curricular activities was remarkable. It has got a permanent place in school curricula. These co-curricular activities enhance the capability of the students.

**Problems in KGBV**

As this particular KGBV does not have its own building they have to vacate the school building during the high school board exams which causes much inconvenience.

*Care of siblings:* As male members were out of family and females were also busy in earning, the responsibility of looking after the siblings falls on the elder girls of the family. This is another reason of absentism.
Seasonal Agricultural Work: Seasonal agricultural work was also an important factor of absentism of girls from the school.

Early Marriages of Girls: Early marriages of girls is also an important fact. At the age of 12–16 years, they get married. This also results in their dropping out of school.

Recommendations
Greater attention is required to be given for the language development of the girls. Although the achievement level of girls is satisfactory on ASER achievement test when it comes to reading and writing is good, but when they are asked to express themselves in Hindi language it becomes difficult for them. The reasons behind this may be that all teachers belong to Bhojpuri region and they may be speaking in Bhojpuri only. More reflection is needed for strengthening the teaching of English language.

Special attention is required to be given for the vocational component. Girls may be given some vocational training so that they can earn their livelihood in future.

Conclusion
Kasturba Gandhi Balika Vidyalayas were started with the great mission to educate girl children so that they could cope up with the society with ultimate ease. We are also very close to achieve our pure goal. To achieve this goal we need to provide more resources in terms of building, playground, clean toilets, blackboard, advanced teaching aids, etc. A special attention should also be given to the quality of teachers since no institution can be built up without good teachers. As far as achievement of these students is concerned, if we will work on above points, only then we will be able to enhance the level of achievement of our students.

REFERENCES
Educational Process Followed in Street Classrooms

Gunjan Rajput*

ABSTRACT

The educational process followed in formal school classrooms is different from the process followed in the classrooms of non-formal educational programmes where the certificate and validity of learning is not assured. One such programme operating in India is Mobile School Programme. The objective of the paper is to assess as how the educational process takes place inside the classrooms of the mobile school programmes, which is assessed on the basis of teaching-learning activities generally liked by children, child friendliness of the classroom and student evaluation adopted by teachers in the classrooms. Four NGOs are running Mobile Schools and cover 18 slums of Delhi. The analysis is based on the data collected through direct observation by the researcher in the classrooms.

Introduction

Each school and classroom creates its own environment of learning depending on the ways of organising and visualising their teaching-learning activities. The organisation of a classroom running on the side of the road and a classroom in a well-constructed building will obviously be different. A teacher who teaches specific subjects organises the teaching-learning differently as compared to the teachers who manage all the subjects individually. Teaching-learning in a class with children of all grades will definitely be different from the class with children of same grades. A school running in a bus will entirely conduct and organise classes in a way that is not common to a school standing at one place. All these factors significantly contribute to the effectiveness of a school and classroom. National Curriculum Framework 2005 and National Curriculum Framework for Teacher Education 2009 emphasised that learning depends on what happens

* Assistant Professor, School of Education, The Glocal University, Saharanpur, Uttar Pradesh, India.
inside the classroom. Relevant curricula content is not the only thing required for good education but how the curricula are being imparted in the classes is also important. The way of imparting curricula is different in different educational settings. After the declaration of EFA at Jometien in 1990, in the last 40 years many educational programmes were started by private organisations, NGOs, religious groups, village communities, international bodies and even by ministries of education to support the education (IIEP, 1997, p. 4). These programmes are substitutes for country’s formal education system and differ in their approaches towards educating children and types of intervention (IIEP, 1997, p. 10; Baxter and Bethke, 2009, p. 27). These programmes focused on group of children who are not enrolled in formal schools, with different curriculum and methods and operate in different geographical locations (Uemura, 1999; Nicolai, 2003; Farrell and Hartwell, 2006; Baxter and Bethke, 2009). One such programme operated in India is Mobile School Programme: Education on Wheels. The idea of Mobile Bus Programme has been started by Nirbhaya Niranjan of Calcutta. First in the series of this type of buses was the Doorstep Schools started way back in 1988 in Mumbai. The programme became popularised when Delhi Government started it in collaboration with two of the leading NGOs named Butterflies and Salaam Balak Trust in 2008. The motto of the programme is: “If the children cannot come to the school, let us take the school to them”. The objective of the programme is to take education to those deprived children who are living on streets, railway stations, bus stands, construction sites, etc. The whole bus is a single classroom, which transacts the curriculum to the children with different grades and age at the same time and at the same place. Since these delivery mechanisms are best suited to the needs of underprivileged children in terms of their curricula, processes and flexible strategy of education (McMillan, 2011, p. 544) and occur in small, remote locations, generally inhibited by marginalised communities, it is important to see or note or describe as to whether these mobile programmes are successful in delivering a relevant educational process to the children in their classrooms.

The programme is operated through a refurbished yellow bus, which is fully equipped with teaching-learning aids, computer and a LCD TV used for film screening on social issues on specific day of the week. Computer is used for making children computer-literate. Each bus is associated with a municipality school of its area to mainstream children who complete the learning cycle in the bus. Timings are fixed as 2–3 hours at each location. The bus generally starts at 8 o’clock in the morning and reaches its first location at 10 o’clock. Two teachers are always present with 30–50 children in the class. Teachers spend more than 9 hours a day in the school/bus, as they have to cover all the locations in
a day. In all the locations, multigrade teaching has been followed.

**Research Objective**

The objective of the paper is to assess as *how* the educational process takes place inside the classrooms of the mobile school programmes running on the streets.

**Parameters**

The relevance of educational process is assessed on the basis of following parameters:

1. Teaching-learning activities mostly adopted by teachers and liked by children.
3. Child friendliness of the classroom.
4. Student evaluation adopted by teachers in the classrooms.

**Sample**

NGOs/Schools running the mobile schools in Delhi are Deepalaya, Salaam Balak Trust, Nav Jyoti Foundation and Aanchal.

**Table 1**

<table>
<thead>
<tr>
<th>NGO</th>
<th>Slums</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aanchal</td>
<td>Shastri Park – Bangali Basti</td>
<td>North Delhi</td>
</tr>
<tr>
<td></td>
<td>Mansarover Park</td>
<td></td>
</tr>
<tr>
<td></td>
<td>New Seemapuri</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seelampur</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sundar Nagri</td>
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<tr>
<td></td>
<td>Shastri Park</td>
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</tr>
<tr>
<td>Deepalaya</td>
<td>Haidarpur</td>
<td>North West Delhi</td>
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<tr>
<td></td>
<td>Sanjay Gandhi Transport Nagar</td>
<td></td>
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<td></td>
<td>Sarai Peepalthala</td>
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<tr>
<td>Salaam Balak Trust</td>
<td>Kalandar Colony</td>
<td>North East Delhi</td>
</tr>
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<td></td>
<td>Vivek Vihar</td>
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<td></td>
<td>Mansarivar Park</td>
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<tr>
<td>Nav Jyoti Foundation</td>
<td>New Sanjay Camp</td>
<td>South Delhi</td>
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<td></td>
<td>Valmiki Mohalla</td>
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<tr>
<td></td>
<td>Kabbaddi Basti</td>
<td></td>
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<tr>
<td></td>
<td>Bangali Basti</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sonia Gandhi Camp</td>
<td></td>
</tr>
</tbody>
</table>
Four NGOs are covering 18 slums of Delhi.

**Tools**
The research is entirely based on the participant observation by the researcher.

**Participant Observation**
The research is entirely based on participant observation. The researcher personally visited the sites of the programmes for 96 days. No disturbance was created to record the real situations of classroom teaching. Observation was carried out with the help of:

1. Observation schedule;
2. Field diary;
3. Questionnaire for teachers and children: Total 10 teachers and 96 children were interviewed.

**Observation Period**
The observation period was of 3 months and 6 days, which started from October 2012 to January 2013.

**Analysis and Interpretations**
How are children grouped in the classroom? What teaching-learning activities do teachers use in their classrooms? Whether these activities are liked by children or not? What teaching methods are used by the teachers? Are these methods enjoyed by children or not? Are the classrooms of the programme *child-friendly*? These are certain questions that are answered in this section to assess the educational process of mobile schools in terms of classroom practices.

**Table 2**

<table>
<thead>
<tr>
<th>Programme</th>
<th>Sample</th>
<th>Number of days of observation/Bus</th>
<th>Total classrooms observed</th>
<th>Total days of observation with data collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile bus programme</td>
<td>4 NGO’s = 18 locations</td>
<td>1 month / Bus</td>
<td>18 classrooms observed (4+3+5+6)</td>
<td>24 × 4 = 96 days’ observations with data collection</td>
</tr>
</tbody>
</table>

**Teaching-learning Activities**
In teaching-learning activities, 11 activities like TV screening/video shows, group discussion, educational games, art and craft, music & dance, drama, poems & riddles, storytelling, study of picture charts, outdoor games and excursions were observed. In mobile school, TV was used to create awareness about social issues. Children were asked about teaching-learning activities they enjoy the most in the classroom. Children voted for educational games, followed by art & craft, excursions and then TV screening. Teachers were also asked to give their views on the teaching-learning activities enjoyed by the children the most. Teachers...
voted for TV screening, followed by art & craft, excursions and then educational games. The sequence of preferences as given by children and voted by teachers for teaching-learning activities is totally opposite (Figure 1), but has a common element which is the choice of activities. The reason behind the popularity of educational games among children was their attractive colours and pictures. As the children are first generation learners so they did not see these type of equipments in their homes. Some of them go to government schools where again they are not able to see these.

**Figure 1. Most liked Teaching-learning Activities:**
*Children’s and Teachers’ views*

**Figure 2. Picture clicked during observation**
type of equipments. Figure 2 shows the children in bus watching a story on TV.

Teaching Methods
As NCF–2005 focuses on constructivism, it is therefore important that the teacher uses constructive approach while teaching. Teaching any content is useless until and unless the content is not understood by the students and it all depends on the teaching approach. What methods are used by teachers in the classrooms? The data collected through observation are grouped in five methods/categories:

1. Activity-based means teaching through different activities;
2. Learning through work means teaching by giving written work to children;
3. by lecture;
4. activity outside the centre;
5. drama means through role plays.

Observations were made for each subject for mobile schools. Whether these methods were liked by children or not? This question was answered by asking children about their favourite teaching methods.

![Figure 3. Frequency of Teaching Method Mostly Adopted by Teachers](image)

<table>
<thead>
<tr>
<th>Teaching Method</th>
<th>Mobile School Eng</th>
<th>Mobile School Hindi</th>
<th>Mobile School Marathi</th>
<th>Mobile School EVS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity Based</td>
<td>76.04</td>
<td>73.96</td>
<td>93.75</td>
<td>70.46</td>
</tr>
<tr>
<td>Learning through work</td>
<td>64.88</td>
<td>71.75</td>
<td>83.75</td>
<td>79.58</td>
</tr>
<tr>
<td>Lecture</td>
<td></td>
<td></td>
<td>83.20</td>
<td>70.21</td>
</tr>
<tr>
<td>Activity outside the centre</td>
<td></td>
<td></td>
<td>30.21</td>
<td>0</td>
</tr>
<tr>
<td>Drama</td>
<td></td>
<td></td>
<td>7.21</td>
<td>26.04</td>
</tr>
</tbody>
</table>
In was observed that in case of English, lecture was used maximally in mobile schools. For Hindi, most of the times lecture method was used. Teachers taught Maths through work at 86.46 per cent of times and activities at 73.96 per cent of times. EVS was taught through lecture 58.33 per cent of the days. The second most used method was activity-based which is also appropriate as per NCF–2005. As it is clearly mentioned in NCF–2005, “Children should be engaged in activities to understand the environment through illustrations from the physical, biological, social and cultural spheres”.

**Figure 4. Teaching Method Mostly Liked by Children**

For determining the liking of children regarding teaching methods, questions were asked to children through questionnaire. The idea was to analyse the degree of suitability of the teaching methods as adopted by teachers for these children. Whatever method a teacher adopted in a class should be liked by children especially in case when they did not go to school and are first generation learners. While asking about the most liked teaching method the children studying in mobile school opted for activity-based. Among activities children usually did mathematical games, group poems, passing the ball for EVS activities, etc. The classroom observation showed that activity-based method of teaching was the second most used method by the teachers in English, Maths and EVS. That shows the good level of sync between the teachers’ strategies and children’s liking. It shows that the teachers of mobile schools understand the phenomenon behind teaching children of slums.

Which teaching method is appropriate or not, largely depends upon the choices of students. The method most understood by the children is the most appropriate. In this term, mobile schools are effective.

**‘Child-friendly’ Classroom**

Although both the National Curriculum Framework 2005 and RTE 2009 laid importance on child-friendly learning environments in promoting retention and learning among children, neither document explains a ‘child-friendly’ classroom and how to recognise it. In the selected programmes it was observed whether their classes are child-friendly or not. For analysing the child friendliness of the classrooms few dimensions were selected. While selecting the dimensions the document NCF–2005 was kept in mind.

Dimensions used as criteria for deciding a classroom as ‘Child-friendly’:
- Medium of Instruction: Mother tongue or Not mother tongue
- Use of TLM in introducing the topic: Yes or No
- Approaches used for introducing the lesson: Narrative or Participatory
The graph shows the number of days the selected dimensions of child friendliness were observed in the classrooms. The number of days is shown in percentage for the purpose of analysis.

In mobile schools the data of 96 days of observation of 18 classrooms showed that happenings inside the classrooms are in accordance with what policy document espouse. All the 8 dimensions occurred more than 50 per cent of times except in ‘nature of activities’ category. Since the teacher in the class teaches in Hindi, which is the mother tongue of children of these slums, the behaviour of the teacher is considered child-friendly. Nature of activities is more of group activities. As there is dearth of physical space so most of the time teacher tried to involve all the children in large group activity. The behaviour of teachers of mobile school was as good as they generally laughed, joked, smiled with all the children. After every few hours they started counseling children one by one. Those who came late to the class, were never scolded by the teacher but were asked reasons for coming late. Children were very frank with teachers and they started telling their family problems to the teachers.

**Good Educational Practices**

For praising and giving recognition in class to the children who are doing well, teachers have devised simple methods of encouragement. All children have been taught to clap and appreciate after their classmates explained something correctly or participate or do well. This
Recognition boosts children’s confidence and motivation so that they keep on participating. Teachers give extra attention and help to those children who struggle with their studies. In the programmes, proper lesson planning has been done by the teachers. Mobile bus teachers are more careful while planning their lessons. They have their own curricula framework so to comply with the curricula framework they prepare their lessons in advance. They start their class by a small prayer followed by a recap of the lesson.

**Student Evaluation**

The importance of evaluating children continuously is focussed by NCF–2005. It is needless to emphasise the importance of continuous and comprehensive evaluation of student learning. What are the existing practices of evaluation followed in the selected programmes? Keeping in line with the importance of continuous evaluation few dimensions have been selected. The dimensions were restricted to a few and these are:

- Assessment of students during teaching-learning: Yes or No
- Mode of assessment of learners achievement: Written & Oral both or any one
- Homework assigned: Yes or No
- Evaluation of homework: Regularly or not regularly
- Recapitulation/Evaluation at the end (review of the lesson with the help of children): Yes or No
- Remedial measures adopted: Yes or No

**Box 2. Indicators of Continuous Evaluation**

Continuous Evaluation is followed by the teacher if:

- Teacher assesses the children during teaching-learning.
- Both written and oral modes are used for assessing the children.

**Figure 6. Frequency with which ‘continuous evaluation’ indicators were observed**
In mobile schools, it was observed that on 79.17 per cent of days teachers did assessment of children through written and oral both modes. On almost all days teachers gave homework to children, but it was sad to observe that they hardly checked their homework. The main problem with teachers regarding daily evaluation of homework seems to be time constraint as they are supposed to spend only 2 hours at one location. The unique thing in mobile schools is that teachers were very attached to children and interacted with them on one to one basis with more focus on academically weak children. Teachers would counsel the children, ask their personal problems, listen to their previous works and teach them accordingly. On most of the days, the researcher observed this happening in buses. Even if a student was absent for more than three days teacher went to the slum to inquire about the child’s absence. In case of continuous evaluation mobile schools are found to be effective enough.

**Conclusion**

Mobile schools proved to be effective enough in delivering relevant educational process in their classrooms. On an average, two teachers were always present with 30–50 children in mobile schools. Learner-centered approach was followed by the teachers. Clapping, praising and appreciating were commonly used methods of encouragement. The behaviour of teachers of mobile school was good as they generally laughed, joked and smiled with all the children.

In the present paper, mobile bus programme has proved to be an important link between access to education and sustainable development by providing relevant educational process in their classrooms. By having participatory and inclusive educational process and by creating child-friendly classrooms, mobile buses are successful in creating ‘impact’ on the well-being of the children. Indian government needs to change its attitude and realise that ‘attendance does not matter if not coupled with quality learning’ and should recognise outreach programmes (and other non-formal education) as important elements for imparting right to education to those who really need it (McMillan, 2011).

**REFERENCES**


Mainstreaming of Out-of-School Children with Community Support — A Study

Kamala Kanta Tripathy*

ABSTRACT

India has already missed the target of achieving education for all by 2015. There are many factors contributing to the present situation. Of these, high dropout rate at the primary level is one of them. About 18 per cent children drop out before completing primary education. Despite all the endeavours made by the government, the dropout rate continues to persist.

To address the issue of dropout children, the All India Primary Teachers’ Federation conducted a study in 2014–15 to bring out-of-school children in the age group 6–14 years to the mainstream with the support of the community. The study was conducted in the states of Tamil Nadu and Odisha. In each state, two districts were selected. In each district two blocks, and in each block, five villages were selected. Investigators were selected to conduct household survey and were provided training. They visited all the houses in selected villages and identified out-of-school children in the age group 6–14 years.

In Odisha, the investigators identified 544 (283 boys and 261 girls) out-of-school children in the age group 6–14 years. Out of these 544 children, 325 (175 boys and 150 girls) in the age group 6–14 years were mainstreamed into schools in their neighbourhood with the support of community leaders. In Tamil Nadu, 46 (25 boys and 21 girls) out-of-school children in the age group 6–14 years were identified by the investigators. Of these, 43 (23 boys and 20 girls) were mainstreamed into class appropriate to their age in neighbourhood schools. This is remarkable outcome of the project. But for this project, out-of-school children both in Tamil Nadu and Odisha states might have remained illiterate throughout their lives. Many of them would have become victim of child labour due to the poverty of their parents.

* All India Primary Teachers’ Federation (AIPTF).
Another objective of the project was to bring about a change in the mindset of parents/guardians, community leaders, villagers, social activists, teachers, students, etc., regarding importance of education for all. For this purpose, multi-pronged approach was followed. Orientation programmes and rallies in all the selected blocks were also organised to bring about requisite desirable change in the mindset of all the stakeholders. Remarkable change was perceived in the mind of villagers, parents, guardians, community leaders, etc.

Access to Elementary Education — Existing Scenario

India has made significant strides towards increasing access to education. There has been a manifold increase in the number of schools at different levels over the years. As a consequence, the net enrolment ratio in Class I has risen to about 88 per cent. Only 12 per cent of the children at the age of 6+ are still unreached (NUEPA, 2014). These children primarily belong to disadvantaged sections of society and households of the poorest of the poor.

Though there has been an appreciable improvement in the net enrolment ratio, but the dropout rate of students both at the primary and upper primary level, though declining over the years, is still alarming. At present, it is about 18 per cent at the primary level. This means that of 100 children admitted into Class I, only 82 complete primary education successfully. The rest 18 drop out on the way.

Quality of Education

The above situation reflects that high dropout rate at the primary level is a stumbling block towards the achievement of education for all. Not only this, out of the children who complete primary education, some hardly acquire requisite knowledge and skills to become productive members of the Indian society. This is primarily due to the reason that the quality of education has not kept pace with the quantitative expansion of education. The UNESCO EFA Global Monitoring Report (2014) also highlights that the quality of education is low in India. The report further highlights that even after completing four years of schooling, 90 per cent of children from poorer households remain illiterate. This holds true for around 30 per cent kids from poorer homes despite 5 to 6 years of schooling. There is learning crisis in India. Mostly children from poorer households are worst hit by this low quality of education. The report also warns that the learning crisis would affect generations of kids if no corrective steps are taken.

Out-of-School Children

There is hardly any exact figure available about the number of out-of-school children in India in the age group 6–14 years. There are different estimates in this regard. One estimate is, there are about 30 million out-of-school children in the age group 6–14 years. A Centre-backed recent
survey has revealed a disturbing trend that in the six years since the Right to Education Act, around 60 lakh children between ages 6 and 13 years remain out of school in the country.

While children from Scheduled Castes and Tribes form 49 per cent (29.73 lakh) of the deprived kids, those from other backward classes constitute 36 per cent, which shows that RTE has brought little change in the lives of marginal groups. At 77 per cent, a majority of out-of-school (OOS) children are in rural areas. Besides, 15.57 lakh Muslim children too are out of school, comprising 25 per cent of unschooled children. In all, around 3 per cent of the total 20.4 crore school-going children are deprived of their right to education (The Times of India, 27 July 2015).

The number of out-of-school children is however uneven among states and regions. India has already missed the target of achieving the goal of quality education for all by 2015. The issue of out-of-school children needs to be addressed appropriately to achieve quality education for all.

Rationale for the Study

The high dropout is eroding the gains being made by increasing access to education. Therefore, there is a dire need to check the dropout rate at primary and upper primary education or to eliminate altogether the phenomenon of dropout. This is possible through educating the parents/guardians of children. They need to be sensitised about the importance of education for development of children. Education develops life and livelihood skills.

Poverty impels some parents to withdraw their wards from school when they are in Class III or IV and send them for labour to supplement the income of the family. They do so on the premise the income of their ward(s) would reduce their poverty. This is an erroneous notion. The child labour does not mitigate the poverty of the family, it rather perpetuates poverty. This is because children engaged in child labour are deprived of facilities for education. Many of them tend to remain illiterate throughout their lives. Since they are not able to develop proper livelihood skills, they end up as labourers throughout their lives. They suffer immensely for no fault of theirs. Parents need to be educated properly in this regard.

Further, there is a need to identify out-of-school children in the age group 6–14 years and enrol them in their nearby government primary/upper primary schools in classes appropriate to their age. It is possible to achieve this goal by educating and persuading parents/guardians of identified out-of-school children and with the active support of the community. In view of the above, it was decided to launch a study with the following objectives.

Objectives of the Study

The objectives of the study were to:

- Identify out-of-school children in the age group 6–14 years in the selected area, with the support of the community leaders;

The Primary Teacher: October 2015
Mainstreaming identified out-of-school children with the support of community leaders into government schools in their neighbourhood; and

Orient parents/guardians, social activities, members of SMC, community members, etc., with a view to bring about a change in their mindset regarding importance of quality elementary education for all.

**Design of the Study**

**Sample**

The study was conducted in the states of Tamil Nadu and Odisha. In each of these states, two districts were selected for conducting delineated activities. In each district two blocks, and five villages in each block were selected. The selected districts and blocks in both the states are mentioned in Tables 1 to 3.

**Table 1**

**Names of Selected Blocks in Vellore and Trichirapalli Districts**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>District</th>
<th>Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Vellore</td>
<td>Anaicut and Katpadi</td>
</tr>
<tr>
<td>2.</td>
<td>Trichirapalli</td>
<td>Trichy Urban and Manaparai</td>
</tr>
</tbody>
</table>

**Table 2**

**Names of Selected Villages in Anaicut and Katpadi Blocks**

<table>
<thead>
<tr>
<th>Villages in Anaicut Block</th>
<th>Villages in Katpadi Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vettuvanam</td>
<td>Arimuthumottur</td>
</tr>
<tr>
<td>Karungali</td>
<td>Virudhambat</td>
</tr>
<tr>
<td>Basuvanayini Kuppam</td>
<td>Sevoor</td>
</tr>
<tr>
<td>Kandaneri</td>
<td>Karasamangalam</td>
</tr>
<tr>
<td>Thippasamudram</td>
<td>Akkireddy Pudur</td>
</tr>
</tbody>
</table>

**Table 3**

**Names of Selected Villages in Manaparai and Trichy Urban Blocks in Trichirapalli District**

<table>
<thead>
<tr>
<th>Villages in Manaparai Block</th>
<th>Villages in Trichy Urban Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maravanur</td>
<td>Kalnayakkan St. Solamanagar Annai Theres Colony</td>
</tr>
<tr>
<td>Kallipatti</td>
<td>Venis Street, Antoniyar Kovil St. Gandhi Nagar</td>
</tr>
<tr>
<td>Podangupatti</td>
<td>Pudur Puthu St., Agraharam, Nagarathinam Pillai. St. Salai Pillaiar Koil St.</td>
</tr>
<tr>
<td>Perumampatti</td>
<td>Sengulam Colony. Palakarai</td>
</tr>
<tr>
<td>Servaikaran Patti</td>
<td>Thooku Medai, Thillai Nagar</td>
</tr>
</tbody>
</table>
In Odisha, two districts namely Bolangir and Boudh were selected. In each of these districts, two blocks were selected. These blocks are mentioned in Table 4.

Table 4
Names of Selected Blocks in Bolangir and Boudh Districts

<table>
<thead>
<tr>
<th>S.No.</th>
<th>District</th>
<th>Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bolangir</td>
<td>Turaikela and Belpada</td>
</tr>
<tr>
<td>2.</td>
<td>Boudh</td>
<td>Harbhanga and Boudh</td>
</tr>
</tbody>
</table>

Development of Tools
The following tools were developed for collecting the requisite data for the study:

1. **Proforma-I**: Recording Particulars of identified Out-of-School Children Admitted into Schools in their Neighbourhood
   
2. **Proforma-II**: Consolidated Report of Out-of-School Children Admitted into Schools

3. **Questionnaires**
   a. Pre-test: Elementary Education
   b. Post-test: Elementary Education

Description of Tools

**Proforma I and II**
This tool was developed to record particulars of identified out-of-school children. These particulars include age in respect of out-of-school child, gender of the child, name of the child and his/her date of birth, his/her father’s name, name of the school and the class into which out-of-school child was admitted. Proforma II is meant for consolidated picture of out-of-school children admitted into schools.

**Questionnaires — Pre-test and Post-test for Elementary Education**
One of the approved activities of the project was to generate awareness among parents/guardians, teachers and members of the PTAs, MTAs, SMC, VEC, etc., about the need and importance of education for all. Therefore, two questionnaires — pre-test and post-test were developed to determine the effectiveness of orientation of the said personnel in changing their perceptions about the importance of elementary education. Pre-test comprised 12 items which were formulated to determine the existing perceptions about need for elementary education for all. The post-test comprised 14 items. These were structured to assess change in their perceptions about the need and importance of education for all as a result of their orientation.

**Procedure of Data Collection**

1. For identifying out-of-school children, investigators were appointed. They were imparted training with regard to the process of interaction with parents/guardians for identifying out-of-school children in the age group 6–14 years. They recorded the requisite information in Proforma-I. They also convinced them about the need and importance of education for all. They also had meetings with community leaders and sought their support in persuading parents/guardians to admit their out-of-school children into school for their better future.
2. For determining the impact of orientation programme upon participants’ mindset regarding importance of quality education for all, pre-test and post-test were developed and administered to participants. Data resulting from these tests were analysed to gauge the impact.

**Household Survey**

The investigators went from one household to another in the selected villages in both the states and interacted with parents/guardians to identity out-of-school children in the age group 6–14 years. They later reported that some parents did not cooperate with them. They, on one pretext or the other did not provide the requisite information. However, most of the parents did provide the requisite information with regard to their out-of-school children. The entire work in this regard was completed in about two months in both the districts. This uphill task could not have been accomplished without the active support of community leaders.

**Mainstreaming of Out-of-School (OOS) Children**

Investigators visited all the 20 villages in all the identified blocks of Vellore and Trichirapalli districts of Tamil Nadu and identified out-of-school children in the age group 6–14 years.

Table 5 presents complete picture with regard to number of out-of-school children (both boys and girls) admitted into their nearby school in class appropriate to their age with the support of parents/guardians, community leaders and social activists. Table 5 reveals that the investigators visited 3,634 households. Forty three out-of-school children (23 boys and 20 girls) were admitted into their nearby government schools. The number is very small due to the reason that the dropout rate at the primary and upper primary level is quite low in Tamil Nadu. This may also be due to the reason that some parents/guardians might have concealed the fact their ward(s) in the age group 6–14 years was out of school. They might have sent him/her to a household/factory/industry/eatery for work to supplement the income of their family. Though the number is small, but the outcomes of the project are of quite significance and have far-reaching implications. But for this project, most of these children might have remained illiterate throughout their lives. Besides, many of them would have ended up as labourers throughout their lives. Their education has an implication for their children also. They would see that their children get education to the level higher than their own education. This would reduce illiteracy and poverty in the country.

**Mainstreaming of Identified Out-of-School Children in Odisha**

Investigators identified out-of-school children from the selected villages in all the blocks — Harbhanga, Boudh, Tureikela and Belpada. The data in this regard is presented in Table 6. Table 6 reveals that the investigators identified 544 (283 boys and 261 girls) out-of-school children in the age group 6–14 years. Out of 544 out-of-school children, 325 (175 boys and 150 girls) were mainstreamed in Odisha.
### Table 5

**Out-of-School Children Admitted into Schools in Four Blocks of Tamil Nadu**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of the Block</th>
<th>No. of households visited in the block</th>
<th>No. of children below 14 years of age in the household</th>
<th>No. of children below 14 years not going to school</th>
<th>No. of out-of-school children in different age groups</th>
<th>No. of out-of-school children re-admitted in school</th>
<th>No. of children admitted in different class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Boys</td>
<td>Girls</td>
<td>Boys</td>
<td>Girls</td>
<td>6–8</td>
</tr>
<tr>
<td>1.</td>
<td>Anaicut</td>
<td>813</td>
<td>277</td>
<td>267</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>Katpadi</td>
<td>744</td>
<td>217</td>
<td>194</td>
<td>9</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>3.</td>
<td>Manaparai</td>
<td>1137</td>
<td>645</td>
<td>598</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>Trichy</td>
<td>940</td>
<td>546</td>
<td>541</td>
<td>9</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3634</td>
<td>1685</td>
<td>1600</td>
<td>25</td>
<td>21</td>
<td>14</td>
</tr>
</tbody>
</table>

### Table 6

**Out-of-School Children Admitted into Schools in their Neighbourhood in Odisha**

<table>
<thead>
<tr>
<th>Name of the block</th>
<th>Number of children below 14 years in the visited households</th>
<th>No. of children below 14 years not going to school from the household</th>
<th>No. of out-of-school children in different age groups</th>
<th>No. of out-of-school children who dropped out from school</th>
<th>No. of children from the household who were re-admitted in school</th>
<th>Name(s) of the child/children, gender, date of birth who were admitted in the school</th>
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Orientation of Parents/Guardians, Community Leaders

One orientation programme was held in each block of the selected districts in both the states. In this programme, members of School Management Committee, parents/guardians, community leaders, teachers, social activists, etc., participated. The objective of all the programmes was to generate awareness among participants about the need and importance of elementary education for all and to help them to perceive their role in achieving the goal of quality education for all. Two questionnaires were developed to gauge the change in the perceptions of the participants regarding the importance of education for all. One of these questionnaires was pre-test and other post-test. The pre-test was administered to them before the orientation programme and the post-test after their orientation. As mentioned above, it was also intended to determine whether the participants perceived any change in their perceptions regarding child labour, need for quality education for all.

Outcomes

The following are the main outcomes of the study.

In the selected four blocks of Odisha — Boudh, Harbhanga, Tureikela and Belpada, investigators identified 544 (283 boys and 261 girls) out-of-school children in the age group 6–14 years. Out of these 544 out-of-school children, 325 (175 boys and 150 girls) were mainstreamed into schools in their neighbourhood with the support of community leaders. From four blocks of Tamil Nadu, 46 (25 boys and 21 girls) out-of-school children in the age group 6–14 years were identified by the investigators. Of these, 43 (23 boys and 20 girls) were mainstreamed into class appropriate to their age in schools in their neighbourhood. This is a remarkable outcome of the project. But for this project, out-of-school children both in Tamil Nadu and Odisha might have remained illiterate throughout their lives. Many of them would have become victim of child labour due to the poverty of their parents.

Another objective of the project was to bring about a change in the mindset of parents/guardians, community leaders, villagers, social activists, teachers, students, etc., regarding importance of education for all. This was to be emphasised that elementary education for all is absolutely necessary to develop the human resource and to improve the economic condition of the people. It was thought that the desired change in the mindset of stakeholders would improve enrolment in schools to facilitate the long cherished goal — Quality Education for All.

For this purpose, multi-pronged approach was followed. Orientation programmes and rallies in all the selected blocks were also organised to bring about requisite desirable change in the mindset of all the above stakeholders.

An analysis of data which flowed from administration of pre-test and...
post-test revealed that orientation programme impacted the mindset of parents/guardians, community members, local level political workers with regard to need for elementary education for all. Four orientation programmes — one each in four blocks of Tamil Nadu were organised. In these programmes, 199 parents, guardians, community members, teachers, students, etc., participated. Of these, 198 participants reported that education for all is necessary. Besides, they perceived that they too have a role in achieving education for all and they would make necessary endeavours in this regard. They also expressed that they would meet parents/guardians and would impress upon them that they should not send any of their children for labour. This is because child labour perpetuates poverty rather than mitigating it. Before their orientation, only 18 participants had such a perception. This reflects the effectiveness of their orientation in bringing about a desirable change in their mindset regarding importance of education for all and that the child labour does not mitigate the poverty of the family and rather it perpetuates poverty.

In Odisha, 235 parents guardians, community members, etc., participated. Before their orientation, only 32 participants held the view that education for all is very essential. After orientation of the participants, this figure rose to 210.

Rallies were also organised in all the eight blocks of both the states. In each rally, about 300–400 persons participated. They were raising slogans regarding importance of education for all. But each rally was witnessed by more than 1,000 persons including villagers from the place of its origin to the terminal place. Coverage of the rally was much more than that of an orientation programme. Thus, both the orientation programmes and the rallies impacted the mindset of all the stakeholders.

Conclusion

The issue of out-of-school children in the age group 6–14 years has contributed significantly to the failure of the country in achieving the goal — Education for All by 2015. The study reveals that this issue can be addressed appropriately by seeking support of the community leaders in each village/habitation.

REFERENCES

*The Times of India.* 2015. 50% of Children Out of School are SC/STs, 25% are Muslims. 27 July 2015.


*National University of Educational Planning and Administration.* 2014. Elementary Education in India: Progress towards UEE (Flash Statistics). NUEPA and MHRD, New Delhi.
Ladakh is a part of Jammu and Kashmir, covering almost half the state area, yet conversely the population density is only 2 per cent of the whole state. The geopolitical fact of Ladakh is such that it is considered one of the most difficult terrains of the world. The area is one of the most neglected regions of Jammu and Kashmir.

As per government information, Ladakh seems to have achieved socio-economic development to a great extent but serious insight is needed to analyse the ground reality of education system in Ladakh. The education scenario in Ladakh has undergone a myriad changes in the last few years or so, including the mushrooming of many private schools, forsaking the government aided schools, the cut-throat competition, etc. Throughout Ladakh, schools are well distributed and 75 per cent of them provide only primary education. Primary education means the basic education which is imparted in childhood and India has already made it compulsory in 1990.

Nevertheless, Ladakh as compared to many other districts of the state and India as a whole, is a lot better. The collective effort of many people of Ladakh has resulted in the setting up of various institutions to improve the education system. A few of them aimed to renovate the primary education system and improve government schools in Ladakh. Private schools and institutions provide alternatives and the main focus is to tackle the root of the problem of educational failure and to reform the education system. The basic concern is towards quality education. The criteria for quality education are not determined by the fact that someone scored high percentage or more than other. One of the major limitations of quality education involves critical and
independent thinking. These are necessary to facilitate learning, which needs to be processed through training teachers at all levels.

In 1973, a local Society called “Lamdon Social Welfare Society” was opened for the purpose of providing Western education in Ladakh. Later, with support from HH Dalai Lama and some international organisations, the school has developed to accommodate students from in and around Ladakh by opening several branches at different places. Leh is the centre with the name Lamdon Model Senior Secondary School and rest with Lamdon Model School. The main focus lies in preserving Ladakhi tradition and culture.

Similarly, Moravian Mission School has been playing an important role in the education sector of Ladakh since 1992 and is managed by Balaji Venkateshwara Education Society. The school takes into account the needs of the children from far away places of Ladakh for better education.

In 1994, for the first time there was a bottom-up initiative taken by the Student’s Educational and Cultural Movement of Ladakh (SECMOL). They began Operation New Hope (ONH), a movement to offer ‘ethnically suitable and locally appropriate education’ and make government schools more functional and useful.

Back then, getting an education meant getting enrolled in the nearest elementary school of one’s neighbourhood which was usually a government aided school since there were only two or three private schools in Ladakh, particularly Leh. The students would go through the prescribed syllabus for the particular session and not deviate from the same, doing nothing new from it and as a result learning nothing new. Although the private schools like Lamdon Model Senior Secondary School (the one where I studied) did conduct few extra-curricular activities and few teachers even went to the extent of using the then modern audio/visual techniques to explain a particular theory or a chapter specially Science and English Literature. It did help to form a vague idea about a particular concept or theory, but in those days the generalisation of concept was not very common since India was getting introduced to the idea of globalisation. Back then, there were no computers, internet, smart phones or any other tool which could help a student to learn more or which could cater to the curiosity or keen nature of a student who would want to learn more.

It is true that more and more private schools are coming into the picture in Ladakh, keeping in mind the growing need and demand. Since most of the Ladakhi parents these days are educated and understand the need to prepare their wards for a cut-throat competition in the present times, explains their preference for private schools. However, it is also true that the strength of the classes is such that the teacher in a given span of 30/45 minutes cannot give attention to each and every student on a daily basis.
The need of the hour is to ensure quality education focusing on the talents and interests of each and every student and to ensure their equal participation in various activities including extra-curricular ones. Also, the prime objective should be to develop students’ interests and keenness in learning something new.
Early literacy has an important role to play in the early learning experiences of children and to boost their school achievement. Some state governments in India have been implementing various pedagogical approaches, learning programmes, teaching-learning materials, etc., to facilitate sustainable learning of children at the early primary stage. For, in this stage, children need a variety of practices for learning in a stress-free environment. To address such issues, Government of Karnataka started the ‘Nali-Kali’ Programme as activity-based learning for children at the early stage of primary level in all government schools.

The ‘Nali-Kali’ Programme was started in 1995, as a small UNICEF-assisted pilot project in H.D. Kote, Mysore district of Karnataka. ‘Nali-Kali’ is a Kannada phrase, which means ‘learning in a playful or joyful manner’. It began as a teaching-learning method in primary schools to provide enjoyable and stress-free learning for children. The state government found this methodology quite appropriate in multi-levels multi-grade schools. It was introduced in 13,691 government schools of Karnataka where the number of children was less than 30 at lower primary level under Sarva Shikha Abhiyan in the year 2008–09. In 2009–10, the ‘Nali-Kali’ method was introduced in all government Kannada medium schools of Karnataka in Classes I and II which was later extended up to Class III in 2010–11.

**Principles of ‘Nali-Kali’**

- Multi-grade teaching, multi-level learning in a classroom.
- Accommodates various learning styles.
- Activity-based, interactive, cooperative, at times with competitive spirit.
- Learning through multiple sensory stimulation, play way, peer guidance, self-evaluation.

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*Seema Kher*, Senior Consultant, DEE, NCERT.
‘Nali-Kali’ — Joyful Learning Programme of Karnataka

‘Nali-Kali’ Process
The ‘Nali-Kali’ encompasses a method of teaching-learning in a situation where multi-grade, multi-level and self-pace of learning is highly regarded. The curriculum is divided into small manageable sequential learning units called ‘Milestones’ or ‘phases’ for each subject (Language, Mathematics, Environmental Science).

In order to attain mastery over each milestone, children have to go through several learning activities. These are called ‘learning steps’. Initially the children are placed in a group by the teachers based on their learning levels and abilities. They can step forward to learn the content at their own pace through different learning activities. A variety of learning activities are included to support the mental and physical development of children (such as cards with fun reading, songs and roleplaying scenarios). As soon as children realise that they have mastered the content, they themselves inform the teacher for their assessment. After assessment, the teacher permits them to do the next and more challenging activity related to another content of ‘learning ladder’. Later, when the child learns or successfully completes the task, it is reported to the teacher and child himself enters it in his/her progress chart under the guidance of the teacher. In this way, children move from simple to complex concepts gradually. They master the competency in one group and move on to another group to learn the next competency. Thus, children learn at their own pace. Moving from one competency to another is not dependent on the whole group’s learning. The groups are dynamic and the formation of each group changes, depending on the activity that the child is doing. The child is free to move at his/her pace of learning. The learning ladder on which the child ‘climbs’ shows the progress of the child.

All these teaching-learning activities of Nali-Kali are conducted in steps called learning cycle. It has six steps: (i) Pre-preparatory activities; (ii) Preparatory activities; (iii) Competency preparatory activities; (iv) Learning activities; (v) Practice activities; (vi) Evaluation activities.

A variety of materials are also provided for each step (for example, materials for Grade 2 include a set of 50 reading books with two increasing difficulty levels). The non-scholastic components such as Arts (Music, Dance, Role play, Drawing) work experience, life-skills education have been integrated and no separate periods allotted for these activities. Students participate actively throughout the learning process.

‘Nali-Kali’ Classroom
The ‘Nali-Kali’ classroom is very different from the conventional classroom. For making the classroom suitable for ‘Nali-Kali’ method, children’s work, children’s blackboard, weather charts, etc., developed by students and teachers are displayed. The seating arrangements for children is unusual too. The students belonging to different standards sit in a group,
as per their learning level in a circle called learning circles or plates. There are five groups: (a) Fully supported by the teacher; (b), Partially supported by the teacher; (c) Fully supported by the peers; (d) Partially supported by the peers; and lastly (e) the Evaluation group (self-learning group). The child can pick up his/her card and sit in the appropriate learning circle.

**Activity Cards**

All the ‘Nali-Kali’ schools have been supplied with a set of ‘Nali-Kali’ cards and supporting materials such as learning ladder, learning circles, progress charts, climate chart and ‘Nali-Kali’ kit. In place of textbooks, Workbook for each subject is provided and the activities of these workbooks are integrated in the learning steps. The activity cards are textual materials to facilitate readiness for learning, instruction, reinforcement and evaluation. These activity cards contain songs, games, outdoor activities, conversation, role play, puzzles and crafts. They indicate the mastery of the child over a particular skill or competency.

**Teachers’ Role**

Teachers are expected to focus much of their effort on supporting lower level students. With the class size limited to 30 students and one teacher per class, and students in Grades 1–3 divided evenly between participating classrooms, each class has a mix of grade levels. Thus, a more democratic classroom management system, which is not based on the child’s gender, caste, age or ability, but on the nature of activity taken up by the child, was evolved. Teachers receive training in the ‘Nali-Kali’ instructional methods through a network of ‘master trainers’ at the state, district and block levels, who train teachers at the next level below. Teachers participate in multiple trainings per year and in monthly meetings to discuss issues that arise.

**Evaluation System**

In ‘Nali-Kali’ programme, a non-threatening, continuous and comprehensive evaluation was build into the learning ladder. Each class consists of a preparatory activity (e.g., a song or dance), followed by instruction in groups, and followed by an evaluation period to wrap up. Students are actively involved in the process by charting their progress through the different steps of the ladder. Instead of traditional assessments, tests given to each student as they advance up the ladder are used to evaluate student performance and progress.

**Conclusion**

The ‘Nali-Kali’ programme has been around for two decades now, and has continued to receive positive response from stakeholders throughout the period. The system has been strengthened, so that teachers are trained with clock-like regularity. The state government has plans to elaborate the programme.
One morning at school, I entered my Class 3 as usual after the morning assembly. All my learners immediately surrounded me, trying to get my attention. They were saying something excitedly, but it was difficult to comprehend as they were speaking at the same time. Once they realised I was unable to respond, some smart learners took charge and asked each other to settle down and let me talk. After about five minutes they settled down and I got a chance to speak. Upon inquiring what was troubling them, they replied that the story books I had supplied in their classroom were limited, and they wanted more. I was surprised because I had recently supplied some thirty books in my class, intending that one could be used for each day for a small action research project. I had decided to do this as I did not want to use the prescribed textbook in the classroom — they did not seem to help in achieving any language learning in the classroom.

The aim of the project was to understand how using good children’s literature in the class helps to improve learners’ English. Initially, the Class 3 children were given a small pre-test in which they were asked to read any small story from the Class 1 textbook. It was found that a majority of them could not read it. I then asked them to identify letters of the alphabet, which many of them were familiar with. However, they were not familiar with using them. I realised that memorising the letters of the alphabet and practising words were not helping them understand language or experience it. Further, the difficulty level and the content of the prescribed textbook was more of a hindrance than an aid.

These books that I gave them ranged from picture books to big

books to one line/page stories and so on. The books which I used have been published by NCERT — “Go Green, Chandu’s Chaat”, the children’s magazine “Firkee”, etc., books by NBT — “Flitter, Flutter”, “A Helping Hand”, “The Mango birds”, “A Tale of Two Dogs” as well as books published by Eklavya such as ‘Chakmak’ and various other books. These books were all in English, though Hindi books were also kept in the classroom in case students wanted to read them and engage with them. Often, for a child, reading in a language he/she is comfortable with, leads on to a better understanding of a second language. However, bilingual books were avoided as mixing the two languages often takes away the fun from both the languages. We began with reading in groups and pairs. They would create the story or read out a story to each other. There were other activities as well which focused on vocabulary development and exposed them to writing. I had expected them to take some time to finish all the stories. To my surprise, almost all of them had finished all thirty books in about ten days. These books were read with or without me.

I promised that I would arrange for more books and asked them to re-read the books they wanted and liked. Then Jiya came up to me and asked me (in Hindi), “ma’am can you get better books for us?”. I was curious to know what ‘better’ meant as I had assumed that I was doing a good job of selecting reading material for my learners. So, I asked her what she meant by better books. Her reply was interesting. She said, “I want to read books which have more story written on the page.” She meant that she wanted to read more content with a slightly more complex sentence structure. When I asked her if she understood all that she read, pat came the reply, “I understand the story. I understand with the help of pictures, but I also like to read what is written.” I checked, she could read like any other beginner reader: she could not comprehend each and every line in a story yet she understood the story. That was a moment of great insight for me.

I realised that my children had started to use non-verbal cues to make meaning. They wanted to look at the content as a whole and not fragments, which is why they could read thirty stories in about ten days as well as various others during the six months the project was on. They read them, talked about them and also enjoyed browsing through them.

These young children were reaffirming my belief in a constructivist approach towards teaching language. Though they did not remember the letters of the English alphabet and could not use English the way we do initially, these children had developed some literacy for the second language as well. They were engaging with books, were making conscious choices about what they would like to read, were developing an understanding about textual complexity, were using multiple
resources to arrive at conclusions, and improving their problem-solving skills. This was also a feedback system for me that children were learning to read. They were not quite accurate but they were becoming fluent. They had started to display all the skills of being a good reader. Initially they did imitate me and also memorised the little text in the books but gradually I saw that with the help of games they began to develop ‘sight’ vocabulary. I also observed that children stopped feeling shy or afraid in asking questions and seeking explanations. They were learning to learn from each other. So much was happening in the classroom through children’s literature.

The project was for six months, but the results were far more satisfying than if I had taught the same class for two years. The main motivation among children was the sheer availability of novel material in an otherwise dull school system. They had freedom to choose what they wanted to read and when. I discovered that each child wants to learn English for various reasons but when it is coupled with abundant resources, especially children’s literature and freedom of choice, a feeling of trust between the teacher and the student is developed, and learning is enhanced manifold.

A child always looks at the world around with an unmatched curiosity. He/she continuously engages with things and people, trying to understand them. He/she approaches the school, the classroom and the text with curiosity and enthusiasm. Children’s literature provides a primary teacher very powerful tools to build upon the child’s learning. My classroom provided me with one such opportunity to understand this aspect of teaching-learning a language like none other.
Form IV (See Rule 8)

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I, M. Siraj Anwar, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Publisher

* This issue has been printed in October 2017
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*The Primary Teacher* invites you to write articles, field notes and reports that impact elementary education. The focus may be on issues and concerns that you are sensitive to, which you feel should be shared with other teachers working at the grassroots levels.

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

The papers may be sent to:

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*My Page...*

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