



Learning Outside the Classroom

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“Learning Curve is a publication on education from Azim Premji University. It aims to reach out to teachers, teacher educators, school heads, education functionaries, parents and NGOs, on contextual and thematic issues that have an enduring relevance and value to help practitioners. It provides a platform for the expression of varied opinions, perspectives, encourages new and informed positions, thought-provoking points of view and stories of innovation. The approach is a balance between being an ‘academic’ and ‘practitioner’ oriented magazine.”



FROM THE EDITOR



It is certainly a platitude to say that learning can happen everywhere and at all times, at the most unexpected places and moments in our lives. We keep learning throughout our lives, or should, if we want to remain active and alert and relevant. So we do not really need a classroom to 'learn' - if the process is an on-going one. It is happening all the time and all around us. One can even claim that learning is a synonym for life. However, that said, we also recognise that the school is a very valuable place of learning: formally and systematically in a graded way, level upon level so that we can tackle end-of-stage examinations which help us to choose our futures.

But while all this is happening, a lot of undocumented and stimulating learning is going on simultaneously. Encounters with others, chance remarks which set off a new chain of thinking, labs where one gets an 'aha' moment when, crowded round the teacher, a number of unexplained and seemingly inexplicable things fall into place and change perspectives. Another arena of learning - and a very important one - is while playing, either organised games or just a casual neighbourhood holiday match. Playing is one of the most fertile learning grounds there is - many lessons are learned while playing football, or kabaddi or kho-kho: team spirit, fair play, pulling together as one.

The morning assembly is another such example. meeting together before dispersing for the day is an indication of belonging to a large group and gives leadership and public speaking opportunities. It also helps sharpen listening skills, as when announcements or speeches are made. Labs are more than being formal places of learning. New ways of thinking, dispelling unsubstantiated beliefs, replacing superstition with facts - all these and more are available for us to consider and adopt. Books - repositories of knowledge, amusement, debate and reading - are two stimulating sources of learning.

Libraries and book corners in classrooms create a space for reflection, discussion and the quietude which is required for processing learning. Modern technology has of course in some places replaced physical books with hand held devices which are portable and easy to store, making reading more accessible, especially in urban centres, though whether they will ever be as magical as books is a moot point.

Surrounding all these founts of learning is our physical environment which, however we may degrade and insult it, is only too ready to spring back to life if treated with just a little bit of thought and consideration. Learning to respect nature and the natural environment in just a few small but significant ways is a learning we ignore at our peril.

All the above and more can be found in this issue. Articles on experiential learning about the environment, reading as a means of expanding horizons as well as acquiring language skills, the morning assembly as a treasure house of the learning experience - are all here. Other articles have given detailed accounts of science as a dispeller of superstition and an enhancer of the spirit of enquiry and curiosity. Sports do more than just teach the rules of the game, suggests an article: they can internalise values, inculcate inclusion and gender equality. There is an array of perspectives on the learning within learning which, paradoxically, falls outside of it.

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Readers' feedback and views are welcome, as are suggestions for improvement. Please address your mail to the id given below.

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The Aims of Physical Education

Aditi Mutatkar and Akash Lugun



Physical Education (PE) has always been a tricky subject to deal with. Although it is in the school curriculum in most senior secondary schools and there is a teacher for physical education, her job is mostly to check the length of the hair and nails or punishing students for not passing recommended standards of personal hygiene or discipline. She is in the forefront during the celebration of national days. Unlike other subjects, there are no assessments. It is often difficult to acknowledge the contribution of physical education in the teaching-learning practices of a school.

As an organisation, our pursuit in *Art of Play* is to enhance the contribution of physical education in the teaching-learning practices of schools. We work with eight government schools in Delhi and Haryana to build an understanding of PE for the learning process of teachers, teacher educators, education administrators and curriculum bodies. In this article, we shall explore PE's contribution to the larger aims of education.

The current state of PE in government schools

According to the Ministry of Youth Affairs and Sports in 2015, 93.7% of India's youth do not have access to organised sports. While the NCF 2005 recommends that physical education be an essential part of the curriculum and the subject has also been made compulsory by all the boards in India, both the subject and the physical education teacher have been unable to receive the same amount of importance and respect as, for example, maths or science or the teachers who teach these subjects.

The status of PE in the school hierarchy

Most other subject teachers have a one-dimensional view of physical education. A physical education teacher is, more often than not, unsuccessful in getting her desired slot in the timetable during the school day. From our interaction with the teachers and administrators, we have gathered that physical education often suffers from the lack of articulated goals.

The philosophy of PE is very subjective and has

been a point of debate among educationists for quite some time, whereas at *Art of Play* we believe that PE revolves around the idea of awareness of one's body. The connection between body, mind and instincts is the focal point of our curriculum, which needs to allow each pupil to learn at her own pace and that naturally makes PE a medium of expression.

On the other hand, a conservative viewpoint aims for PE to teach only the time-honoured values of pride, determination, grit and validation of physical attributes. In certain government schools, often educators and teachers find themselves caught between these ideas. While they theoretically believe that PE is needed for all students, they actually push for excellence in sports. For this very reason, we often fail to have:

Grade-specific curriculum

From our experience in working in schools in Ambala, Faridabad and Delhi, we have seen some patterns emerge that could explain the current status of the subject in our schools. Physical education teachers do not have access to a grade-specific curriculum that highlights both physical and life skills that a child needs to learn according to his age.

Lack of teacher training in PE

In the last twelve years, Haryana physical education teachers have not had access to any form of teacher training programmes, to help them upgrade their knowledge or have access to peer-to-peer learning.

What are the aims of physical education?

These are some of the aims of education as stated by NCF 2005: 'Commitment to democracy and values of equality, justice, freedom, concern for others' well-being, secularism, respect for human dignity and rights; Independence of thought and action points to a capacity of carefully considered, value-based decision-making, independently and collectively; sensitivity to others' well-being and feelings; learning to learn and the willingness to unlearn and relearn.' (NCF 2005)

In the next few paragraphs we shall share our experience of learning these values through physical education.

Learning to unlearn and relearn through action

In sport, almost no skill can be learned without actually performing it. It is essential to note here that active participation is both a mental and a physical function. If you want to learn football, it is not enough to just watch or read through a football textbook. You will have to get on to the field, apply your mind and practise your kicking skills day in and day out. In our classes, students build their skills and knowledge through practical work and by gaining their own unique experience, at their own pace.

Sahil, a grade 3 student in one of our schools in New Delhi, loves to play the game *ankh micholi* (hide-and-seek). In this game the objective is to place six domes on three cones placed in a triangular formation. Two domes must be placed on each cone within three minutes. The only condition is that one member of the team will be blindfolded, while the other three give him proper instructions to help him achieve the end goal within the time limit.

In one of our *ankh micholi* sessions we played the game three times in succession. All three times Sahil chose to be the one blindfolded and he also took his team to victory each time in less than two minutes.

At the end of the session, however, while I collected all the equipment Sahil was waiting for me to finish even after his class had left. He came upto me and said, '*Didi*, I was cheating today. I could see everything from below. While I won all three times, I really did not enjoy myself as much and nor did winning feel that good. If I had won without cheating, I would have enjoyed the game much more!'

In the span of forty five minutes Sahil first learned that if he cheats, he would be able to win easily and get the prize. Towards the end of the session he unlearned his first lesson and relearned that cheating actually minimises the fun and also winning that way does not make him feel as good as winning honestly does.



Checking on Sahil's blindfold

Peer learning

Another important lesson is learning independence of thought and sensitivity towards others through peer-learning

A lot of children are comfortable asking their teachers for clarifications on a concept once, but they hesitate to ask the same question a second time. In such a scenario, they are more comfortable asking their classmates or their seniors in school. In our programme we encourage older children to teach the younger classes. This is a win-win situation for both sides. The younger children enjoy the sessions as they are more comfortable practising skills with their older peers, while the senior children learn to operate independently and take ownership of the learning of their younger schoolmates.

Sumit and Rahul, two grade 8 children in a school in Ambala, take sessions for the younger classes when their physical education teacher is busy or absent. Both Sumit and Rahul have encountered challenging situations in their mentoring. For example, a differently-abled grade 6 girl would not participate in their games sessions. After a week of seeing her just sitting and watching her classmates having fun, Sumit and Rahul decided that she had to be included in the games. Initially the children in her class would not choose her in their teams. Sumit or Rahul would then join the game and invariably make her their first choice in one of their teams. Slowly but steadily, the class accepted the girl's right to play and found constructive ways to accommodate her in their games.

Both Sumit and Rahul had to independently come up with their own solution to a unique problem they faced on the playground. Their decision was founded on the basis of both the sensitivity they felt towards the girl's feelings and the spirit of inclusion which is integral to sports.



Sumit and Rahul of Grade 8 taking a Grade 6 sports session

Learning democratic values through teamwork

The games we design for each session are based on one central principle- we only use team games. Playing team games sets up a very dynamic space for learning. The interactions, both within teams and with the opponents, gives children opportunities to learn justice, respect and equality. In a team game, a child is forced to think about the broader picture and not just her own self. For a team to win, it needs to operate in a democratic manner. If team members do not practice the values of treating each other equally and justly, respecting each other's opinions and giving each other the freedom to think and operate individually, they will not be able to be put a united front and will invariably lose. Each team member needs to play a constructive role and ensure that every other member of the team understands the importance and agrees to their role in the team.

An example is the game of frisbee. This is unique as it is gender-neutral, self-referred and focuses on the spirit of the game. In one of our school frisbee teams, we initially faced the challenge of the entire game being played by a select few (mostly boys) while the rest of the players (mostly girls) would never get a chance to hold the disc. Our educators encouraged the boys to integrate the girls in the game, but it just never worked. The team could never really trust each other.

As the team picked up the game and started playing it better, they learnt the importance of passing the disc to every player in the team. When the disc remained only with the boys, it became easier for opposing teams to just defend the boys and win the game. As the boys took on themselves the pressure of scoring the points, the tension caused them to lose the disc. After a series of sessions, the boys finally had to start trusting the girls to catch the disc and pass it to them. As soon as this happened, the girls played with more enthusiasm. They surprised themselves with their own game and the boys were surprised by how well the girls could play.

A school level frisbee game helped the boys realise that they were being disrespectful, unjust and curbing the freedom of the girl players to perform for the team. The urge to win forced them to rethink their behaviour and treat the girls as their equals. Right from the first pass they made to a girl, they showed a commitment towards practising these democratic values.



Our Delhi school team at a Frisbee tournament. The more they trusted each other, the better they played as a team.

From various such experiences on the field, we truly believe that a well-structured physical education curriculum, if pursued pro-actively in our government schools, will play a pivotal role in helping to accomplish the aims of education.

In conclusion, while our field experiences give us enough evidence of physical education as a distinct contributor to the aims of education, we also need

to think about the cultural context and the role it plays in defining a curriculum. Much like arts, sports and physical education comes alive when it has its roots in the community it serves. Involving local communities and playing more local games to learn long-lasting social values could be the key to establishing physical education in the school curriculum.

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Wall Magazine: An Extraordinary Window for Learning Outside the Classroom

Anil Singh



The National Focus Group position paper on Aims of Education under the aegis of National Curriculum Framework (NCF) 2005, clearly states that ‘the school system has come to be characterised with a kind of inflexibility that makes it very difficult to breathe fresh life to it.’ The Focus Group also acknowledges that ‘learning for children seems to have become a sort of isolated and perfunctory activity which they are unable to connect in any organic or vital way with the rest of their life.’

Our experience shows that the school has come to be a centre of power and authority and the teacher, as one of its representatives, tries to accomplish this through textbooks. It goes on well in the classroom and the learner’s epistemological diligence is rarely used in this kind of centralised process of teaching and learning. This is the reason that we come across pre-decided answers to questions, bookish words and examples, irrelevant logic and basics, monotonous analysis and experiences that are not connected with life. Therefore, methods and perspectives of teaching and learning should be reviewed regularly.

There are many such modes and methods related to life outside the classroom that not only make teaching and learning lively and vibrant, but also involve many components of the learner’s epistemological diligence in that process. This article speaks about one such method—the *Wall Magazine*.

A Wall Magazine is usually considered to be a non-academic activity in the school because it contains material from outside the curriculum: the activity is conducted outside the classroom, it is possible to do it without the control and supervision of the teacher, it has no fixed format and the learners can do it autonomously. Many times it turns into an art and craft class. There is no problem with that unless there is a deviation from its purpose. What is amazing is that the so-called non-academic format itself is its strength. Let us try to understand this strength in a sequential way.

With regard to the aims of education, NCF 2005 says that if the learner is not motivated to explore,

then the teaching-learning process is futile. When we look at the Wall Magazine from this perspective, we realise that it gives children the initial impetus to explore and recognise the world outside the classroom as an arena for learning, inspires them to search and find the contents for a chosen topic, look at material other than textbooks, shape experiences from their own lives and let their imagination run wild. And all this of their own will, wish and initiative. The activity starts with looking for content outside the textbook, testing it and undertaking a series of tasks which truly promote creativity. While preparing the Wall Magazine in the Anand Niketan Democratic School on the topic Independence, the children were not thinking of independence in a limited way as given in the books, which is confined to attaining freedom from British rule, but they were considering independence in a variety of ways beyond it. Freedom had a different meaning for each one of them. They were also thinking about animals in captivity and their freedom. Instead of choosing a poem on independence from a book, they preferred to write a new poem themselves. They talked to the teachers, school friends and family members to find out what they understood as independence and finally went on to prepare their Wall Magazine.

While the Wall Magazine opened the doors of creativity on one hand, on the other, it also offered



them opportunities to learn various life skills. Whether we talk about the broader objectives of education or subjects, these life skills are considered

important. In carrying out the task of preparing a Wall Magazine, children learn the skills of working in groups, making their own place in a group, arguing logically, selecting suitable material, respecting each other's opinions, accepting differences, and developing coordination. These skills are learnt organically: nobody is teaching them. Their small group becomes a complete society and social ways become its needs. There is only one goal - to come up with a good Wall Magazine.

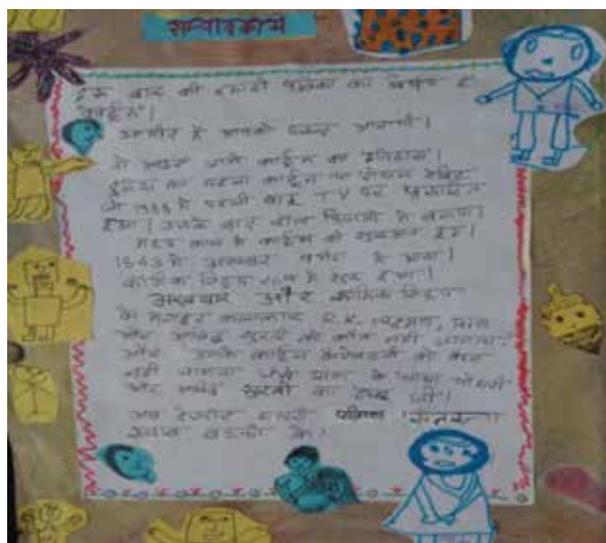
Schools have a lot of concerns about teaching reading and writing and a great deal of work is done to address it, but what goes unnoticed is



how to build and maintain the power of reading and writing, its vibrancy and meaningfulness. If reading and writing can become an inspiration for a specific achievement rather than a general achievement, then it can be fun and meaningful. In such a situation, the objective of making the Wall Magazine attractive, interesting and the centre of everyone's attention becomes the source of its energy. Routine classroom writing has no liveliness or energy because the child writes bookish questions and answers. There is no component of making it attractive, readable and the centre of everyone's attention. When we talk about the skills within the broader aims of education, we also talk about the skills related to the community's desires and aspirations. It can broadly be seen as aesthetic skills. Writing in the Wall Magazine, its adornment and presentation nurture these aesthetic skills.

Education is that which liberates. This has been expressed in many ways. J. Krishnamurthy, Gandhi, Tagore, Ambedkar, Phule and Paulo Freire have talked about liberation in different ways. The path of liberation may be found in independent thinking, self-inspired, spontaneous creation and free expression and it is absolutely true in the context

of education. Our educational documents also advocate it. The possibilities of freedom increase outside the classroom because the framework of the school system is such that the thinking of the teachers, their presence, their methodology and prevailing assumptions change the overall chemistry inside the classroom. The focus is solely on the exchange of curriculum-related information. The making of the Wall Magazine opens the way to liberation from the teacher's influence and hold, opens the path for independent thinking, creation and expression.



The travel memoir for the Wall Magazine was not written in response to any question, nor was the poem written as an example of any *rasa* or *bhava* of Hindi grammar. Instead, it was a spontaneous creation—uninhibited and original. Writing or painting for the Wall Magazine comes out naturally and not under any pressure. Such a composition will fulfil the objectives of education. We are living in a competitive world today where we talk about children's self-confidence and practical understanding. Education is supposed to fulfil these expectations and aspirations of society. The NCF 2005 also discusses them in different ways and underlines the contribution of education in making better citizens. Decentralisation of teaching and learning, believing in the understanding and intellect of children and staying away from supremacy in the classroom can make it possible. Activities and project planning build self-confidence and practical understanding in children which is not possible through the one-sided lecture/discourse of the teacher in the classroom. So the Wall Magazine is like a perfect project which includes the understanding of various handwork activities

as well as planning, sharing responsibilities, identifying competencies and implementing a plan. The activities/materials or contents of a Wall Magazine help in incorporating local contexts and various cultural contexts in the curriculum. Children create space for their life experiences, customs and beliefs and get familiar with each other's background. The topics covered in the textbook are developed in detail in a wall magazine. New dimensions are added to the content. The poem *Man karta hai* in NCERT's grade III book, is one such example. Children prepared their own Wall Magazine with the same title. The content of the Wall Magazine prepared by the children became a further reference and text material for the teacher. The discussion on certain topics that are missed

out in the classroom can be discussed outside the classroom through the Wall Magazine thus enriching the text content.

The textbook becomes a dynamic document with the support of the Wall Magazine. Each lesson from it leads to many threads of children's lives, their experiences, aspirations and viewpoints. Wall Magazines, thus developed, can create a whole new world outside the classroom, which can meet the objectives of the subjects along with the broader aims of education. Teachers and school managements need to understand its importance and accept it as a holistic method of teaching and learning and give children the autonomy to create it. The beauty of the Wall Magazine lies in its not being under the teacher's control.

Anil Singh has been active in the field of education, especially school education, for the last 15 years. Along with Hindi language teaching, he integrates theatre with the everyday activities of students. He is especially interested in storytelling. Anil's articles on his classroom experiences and other issues of education are published regularly. At present, Anil is working on an alternative model of education with the Anand Niketan Democratic School, Bhopal. He may be contacted at bhuanandanil@gmail.com

Science and Superstition

Ashish Sharma



I have worked on this topic with the teachers and students of grades 5 to 12 in different schools. In the lower classes we talked about students' knowledge of the solar system, planets, stars, celestial bodies, constellations, phases of Moon, eclipses, with which many superstitions are associated and are present everywhere in society. Generally, astronomy is seen as another branch of science, but my experiments with teaching science through it have got positive results.

We find during classroom teaching that science is considered to be a very difficult subject and almost all the teachers feel that teaching it is challenging without teaching aids. Since Space is a simple and commonly available resource adhering to nature and natural processes, it can be used as the basis of principles of science.

The first thing I did with teachers and students through astronomy was to observe the events happening around them and to know the reason for their occurrence. Related ideas were demonstrated through various activities and discussed, as scientific observation of the environment contributes a lot in understanding daily events- we only have to make connections. There are some topics which are an integral part of our daily life, such as day and night, changing seasons, the Earth's atmosphere. Apart from this, an understanding of the celestial bodies and their motion helps us with various applications of science like installing satellites. During the discussion some general assumptions related to them surfaced, such as: the Sun is the biggest planet in the universe, the Pole Star is the brightest, seeing Mars-Saturn-Rahu-Ketu is inauspicious, the Earth stands on the back of a turtle (or the horn of a bull) and so on, although some associated stories, such as *Dhruv tara* (Pole Star) having the highest position, the contribution of stars in the development of civilisations, planets having names of the deities, were quite interesting.

Although discussions have been had and presentations made on other topics, our recent focus has been on the Moon and its orbital motion. The lunar eclipse of 30th January 2018 was a great

opportunity when we observed and discussed concepts related to the motion of the Moon at the Azim Premji School, Tonk. Deliberations were had, experiments and observations were done on this topic by different groups, which helped in understanding various phenomena related to the Moon.

The Moon's motion and superstition

This theme has been discussed several times with different groups and the lunar eclipse which occurred on January 30, 2018 was special because on this day there were three celestial events happening together, namely, Blood Moon, Super Moon and Blue Moon. We planned to watch this amazing celestial event, when the Moon enters the orbit of the Earth, with the children using a telescope. We first gathered the children at one place and talked about their assumptions and local beliefs about an eclipse and the reasons behind those popular misconceptions. The children were influenced by events and beliefs around them and whatever they had heard from their family members. Normally, we regularly attempt to rectify misconceptions that arise by giving correct information, but this is not so easy. It is necessary for us to work continuously and give everyone the opportunity to check their knowledge which is based on the information that they receive and then to be able to identify the scientific ones.

After the discussion, the children were told about the Earth, the motion of the Moon and solar and lunar eclipses through a model and a live broadcast from NASA. By now the children had got the answers to most of the questions related to the eclipse and were ready to witness it. We showed them the eclipse with two telescopes in groups of five as well as a live telecast by NASA through the projector, talking simultaneously about other related things: the discovery of bright stars, planets and constellations, the colour of stars, stories related to different stars etc. It was clear that, even though the children did not know the definitions, their knowledge about these things was above average.

Subject analysis

There are some common beliefs or superstitions that came forth during our discussions with teachers and students of different classes. The reasons behind many superstitious beliefs are - to create fear, to bring in some socio-practical regularities, to follow some health-related practices etc. But there are some other ideas which are far too deep and which cannot be explained away. Some of these are:

- pregnant women should not watch a lunar eclipse
- whatever one eats, donates or does at the time of eclipse becomes evil (power of asura)
- eclipse causes blindness
- new moon and souls
- married women are not allowed to wash their hair
- bathing clears dark shadows or bad effects of eclipse
- ban on shaving, haircut, cutting of nails etc.
- starting any new work is prohibited
- reducing/getting rid of its wrath by worshipping/giving alms
- sprinkling basil (*tulasi*) leaves and Ganga water on clothes and household articles

Many other questions also came up during the discussions which were examined scientifically. Some of the issues were:

Was the Moon illumined by its own light or some other source?

Does the Moon also move on its own axis, like the Earth?

If the Moon moves (rotation and revolution) then why does it always look same?

Are the phases of the Moon formed due to the shadow of the Earth?

If the eclipse occurs because the Earth, which comes between the Moon and the Sun, why does it not happen every day or every month?

Does the Moon contribute in any way to life on Earth?

The answers can be explored in two steps- first, understanding the reasons behind their occurrence and second, examining various opinions/beliefs/superstitions on the basis of this understanding. The presence and utility of the Moon in daily life is evident in our almanac, which is made on the basis

of the motion and sighting of the Moon (*Krishna Paksha-Shukla Paksha*). In addition, days of fasting in the Indian year/almanac (like *Karva Chauth*, *Ramzan*), festivals (*Deepawali*, *Janmashtami*), worshipping, astrology (place in horoscope, head of the zodiac sign) etc. are also determined on the basis of Moon's motion and visibility. Our literature connects the Moon and its phases with various idioms, analogies, examples, stories, relationships, traditions etc. All this is fine, but the moment we talk about eclipse, many unscientific practices, beliefs, processes, superstitions based on oral traditions are evidenced which are difficult to question or reject and become the basis for many deep-rooted superstitions.

Textbooks talk about the Moon and theories/information related to it such as phases of the Moon, astronauts who went to the Moon, the relation of the Moon to the Earth, tides, the rotation of the Moon on its axis, but not about removing social beliefs and superstitions. However, they can be a good starting point to work on superstitious beliefs because they are used by students of different levels who are in the process of building their knowledge. Logical analysis can be helpful in preventing misconceptions from growing.

The questions raised above have links with both textbooks and daily life. While textbooks affirm scientific and logical study, much of our daily behaviour is full of superstitious beliefs, misconceptions and illogical analyses/beliefs. They are passed on from one generation to the other in the same form, are never questioned and are accepted the way they are. In an attempt to get more information in order to break this cycle of superstition we found that they exist in all religions and geographies. The above questions can be divided into the following steps to facilitate analysis and understanding:

- the same side of the Moon always faces the Earth (one side of the Moon is always dark)
- the formation of the phases of Moon (observational activity)
- understanding the process of eclipse (position from the source of light, obstruction, plane, tilt, partial and total eclipses).

Based on the information above, it was important to verify the truth behind superstitious beliefs. A solar eclipse is considered to be of four *prahar-s* (one *prahar* equals three hours) and lunar eclipse of three *prahar-s*. A scientific analysis can be made

by understanding their motion and the type of motion.

It is very important to know here whether the Moon is moving or not. The Moon revolves around the Earth in an *elliptical orbit* once in 27.3 days and takes about the same time to rotate once on its axis. This is called *synchronous rotation* or *tidal locking* in space science and is why only one side of the Moon is visible from Earth. It is difficult to determine whether the Moon rotates on its axis or not, but if we look at only the axial rotation of the Moon without its revolution around Earth then we know that it is moving. It is also difficult to understand and demonstrate both the movements simultaneously. I did a simple activity where the numbers 1, 2, 3, and 4 were written at a distance on a white ball representing the moon. The ball was rotated around the globe, (the Earth and centre of motion). The ball was revolved around the globe in two positions, once while keeping it steady and the second time while rotating it on its axis.

In the first case it was noticed that when the ball had different positions around the globe then different numbers face towards the centre, that is, different surfaces of the Moon are visible from the Earth. In the second position, it was revolved around the globe while rotating it on its axis. We tried to make sure that it would complete one revolution around the globe at the same time as it rotates on its axis. Here we saw that the same number was seen around the globe in different positions. This activity was helpful in explaining the scientific cause behind why we only see one side of the Moon.

The surface of the Moon visible from the Earth is considered to be denser and the gravity of the Earth causes the Moon to keep the denser side always facing the Earth. This analysis confirms that the Moon is a moving body and this information helps us to investigate other questions related to eclipses.

Moon phase activity

Why do the phases of moon occur? What causes it? Many people believe that the shadow of the Earth falls on the Moon. The following activities and presentations were done to learn the correct reasons.

The most effective way to understand the phases of the Moon is through direct experience. A light bulb represented the Sun, a white sphere or a ball, the Moon and a student participant represented the Earth (Picture 2). The aim of this activity was

to show that the Moon has no light of its own. It can only reflect light from the Sun. Only the side of the Moon which faces the Sun can reflect this light and can appear bright, the other side appears dark. As the Moon orbits the Earth, we can see different parts of it illuminated by the Sun. Thus, it appears to change its shape. The varying shapes of the bright part of the Moon seen during a month are called phases of the Moon.



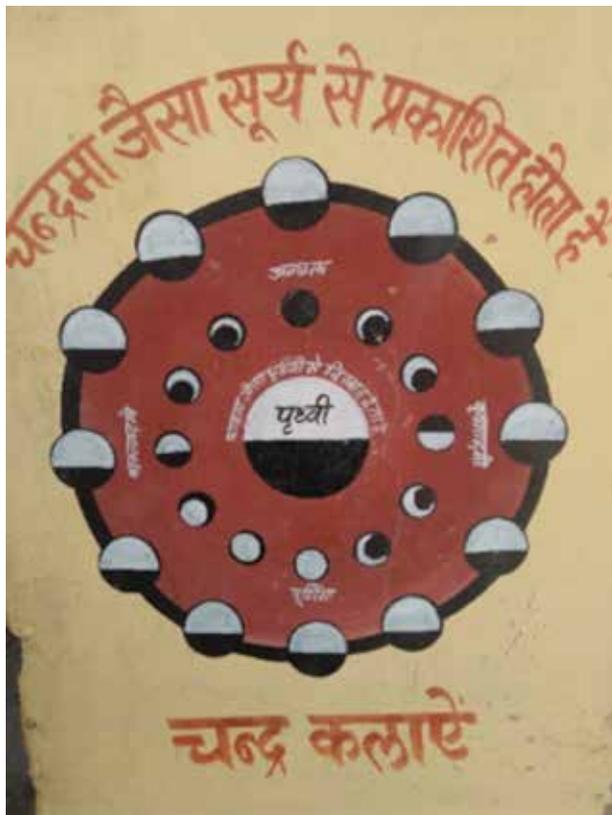
Picture 1



Picture 2

To demonstrate this, a student participant was asked to turn a full circle with the Moon (white sphere or ball) in his hand and observe the lit portion of the ball in different positions. A full Moon is the lunar phase seen when the whole of the moon's lit side is facing Earth. This phase happens when Earth is between the Moon and the Sun (the Moon is on the opposite side of the Earth from the Sun), we see the entire illuminated portion. When it was between the Sun and Earth (luminous part of the Moon towards the Sun) we only see the dark portion (new Moon). Another advantage of this experiment was that it changed

the perception of the participants that a part of the Moon is always dark, called the dark side of the Moon. The participants saw that the 'dark' side is completely illuminated with the Sun's light even during new Moon.



The second attempt to develop an understanding on the phases of the Moon was with the help of pictures where there is a source of light on one side and the Earth is placed at the centre. The picture demonstrates that the Moon's phases are created by changing angles (relative positions) of the Earth, the Moon and the Sun, as the Moon orbits the Earth. From both these explanations, it becomes clear that phases of the Moon have nothing to do with the shadow of the Earth. The phases are the illuminated part of the Moon depending upon its position and not as a result of the Earth's shadow cast upon the Moon by the Sun.

Understanding the process of eclipse

A lunar eclipse is an astronomical event that occurs when the Moon passes directly behind Earth and into its shadow. This can occur only when the Sun, Earth, and Moon are exactly or very closely aligned with Earth between the other two.

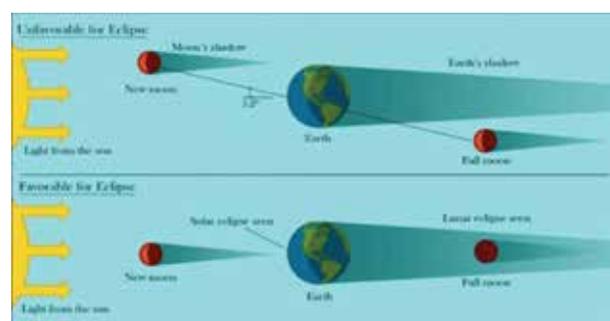
Due to this geometrical restriction, a lunar eclipse can occur only on the night of a full Moon. The type and length of a lunar eclipse depends on the Moon's



proximity to either node of its orbit. Generally, there are two types of eclipses- total and partial. A total lunar eclipse occurs when the Moon passes through the darkest part of the Earth's shadow. In such a situation, the Earth completely blocks the Sun's light from falling on the Moon. A partial lunar eclipse happens when only a part of the Moon enters Earth's shadow. An initial explanation is illustrated on the blackboard, followed by an activity using a light source, globe and white sphere or ball. The light source and the Earth (bulb, white ball and globe) are kept stationary and different positions are created to show the Moon's rotation and to help students learn the natural causes of eclipses.

During this entire process and discussions significant learnings happened: first, the observation was that a lunar eclipse can occur only on the night of a full Moon and second, the connection between phases of the Moon and the eclipse.

Now, an important question was raised. Why does an eclipse not occur on every full Moon?

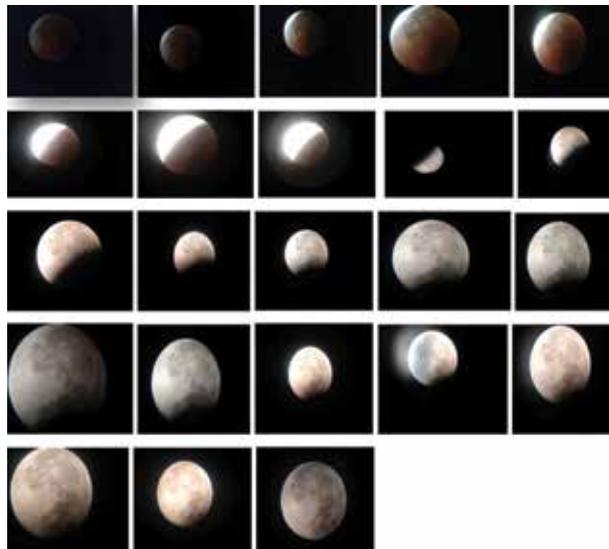


This question gave me an opportunity to learn something new because the search for the answer led me to look at the path of the moon orbiting the Earth, which was somewhat different from the Sun and the Earth's plane. If we consider that the Sun

and the Earth are in the same plane, then the orbit of the Moon is inclined by about 5.2° to the orbital plane of the Earth, in other words, the Moon's plane round the Earth is at an angle of 5.2 degrees. A lunar eclipse occurs when the Sun, Earth and moon are exactly or very closely aligned in a straight line. Because the Moon's path round the Earth is tilted at an angle compared to the Earth's orbit around the Sun, an eclipse does not occur every full Moon night. With the help of models used in the above activity, children were able to observe the shadows at different surfaces which contributed significantly in understanding eclipses.

Sometimes a scientific theory is made simple in an attempt to make it easy for the student to understand and this helps in the practical understanding of scientific phenomena. An example - our planet's changing distance from the Sun causes the change in the seasons. Also, some questions are based on the experiences of the students and cannot be cleared with the theories given in the book. For example, if the Earth rotates around its axis and

revolves around the Sun, why do we not actually feel the movements? If the Moon revolves around the Earth then why is there no eclipse every month? if the Earth is round, then why does it look flat to us? Scientific discussions on such topics can help to break deep-rooted false beliefs.



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Images: Photos taken online and clicked by self in the schools

Links for observing the moon's motion:

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Library: An Important Central Point of Elementary Schooling

Dinesh Patel



Children learn better if they are given independent opportunities to learn in schools. They become a part of the learning process of knowing the world around them through their own experiences and various types of creative activities. They want to connect with everything that attracts them in any way, provided there is no interference in this process. Since they are curious by nature, they want to know everything about any new, unique or strange thing that they find. *Why does this look the way it does?* They are curious about the appearance, shape and nature of things. This curiosity leads them to learn more. Problems arise when, knowingly or unknowingly, we ignore their curiosity. Perhaps this stems from our own ambiguity of what we think they need to know.

Eklavya started a project in some government schools of Dewas, Ujjain, Hoshangabad, Harda and Betul in Madhya Pradesh in which we operated libraries. My experience of running an active and creative library tells me that children learn a lot through it. It will not be an exaggeration if I say that a good library can teach a child everything that is important for becoming a good person—a place where children learn and help each other. They get complete freedom to invent anything that they want. They bring in their own life stories into the discussions and fabricate new stories based on the stories they have read in the books. All the

experiences that they gain from their surroundings are woven into these stories. Then, in a completely engrossing and joyful manner, these stories are shared with the others. A person who has not heard them cannot believe how delightful they are!

A library is an interesting and fascinating space where children make friends with books and construct their knowledge freely. This robust relationship plays an important role in developing their capacities in reading, painting, drama, puzzle-solving, sports, craft and other activities. In our library project, children also get involved in the process of issuing and returning books, their maintenance and several related activities. Teachers and older volunteers, mostly students from the secondary-school level, help them with these chores.

In our experience, many interesting things came up while working formally with children in school libraries. Students had several fascinating experiences while they were engaged in writing for the wall newspaper and they wrote vividly about them, all of which are examples of their creativity. It is very important to provide more opportunities for reading-writing activities to enhance the linguistic skills of children so that they can express their points of view freely and move forward in search of paths that satisfy their curiosity. We believe that the true objective of education should be to help children become a part of the learning process within their classrooms as well as outside and learn from their surroundings with the help of the teacher.

There is a need to emphasise the importance of how a teacher can make children's knowledge-construction process an active and creative one. As the National Curriculum Framework (NCF) 2005 also suggests, 'The school library should be conceptualised as an intellectual space where teachers, children and members of the community can expect to find the means to deepen their knowledge and imagination...'

This idea is all the more valuable because new research studies in the field of education all over the



Rahul Aniya, grade VI, Village Borkheda, Dewas



Wall newspaper prepared by children

world emphatically show that children themselves play a very important role in constructing their knowledge. We cannot teach them much by ignoring their experiences. There should be attempts to develop their connections with their lessons, based on the level of their understanding and while this can be achieved to some extent through the curriculum, to a great extent the connections are made through the world around them.

The main objective of a library is to expose children to literature beyond their curriculum, create an interest in reading and writing so that they can develop a good command over language and are able to participate in knowledge construction themselves. To be able to do this, the environment in the school should be such that it creates interest in learning through various creative activities and develops leadership ability in children.

Another objective of the library is to encourage children view the world from their own perspective. Our focus through the library project was mainly on reading and writing activities so that children can use books to enrich their linguistic abilities both written and oral and the library could become a centre for all the above-mentioned creative activities.



Amit Sahu, Grade VII

Eklavya's experience of operating libraries in government schools made us realise how much children can learn through a library. Here, in their own words, are the children's views: Jaspal, Grade VII, Gayasur village: I learnt to read from the books of Eklavya's library. I would take a book, read it in hiding so that no one would know. Then, I gradually learnt to read. Earlier, I did not know how to read at all.

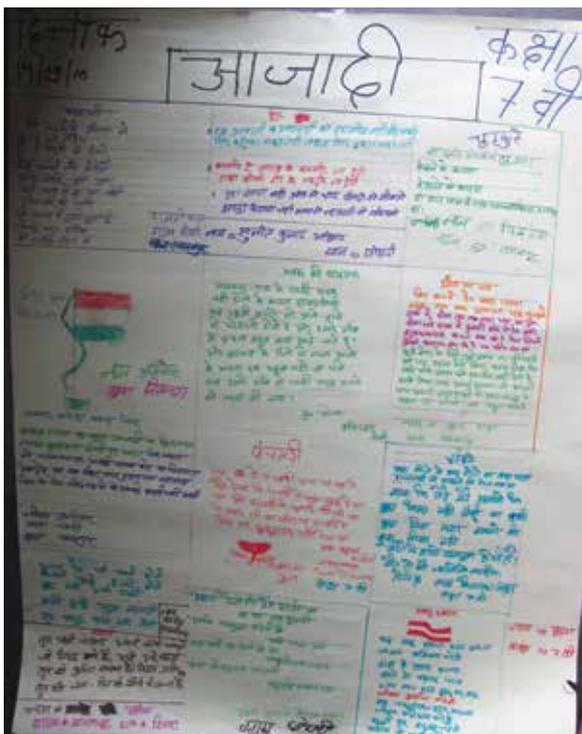
Govind, Ramkumar, Jasman, Rakesh and Braj Mohan, Dapka, Pipariya said that they used to read with a lot of hesitation before (the library was introduced). It would take them a long time to read and they would stumble on each word, break the words into letters to read. Gradually, they learnt to read. By reading the stories from the library books, again and again, they got into a habit of reading. Then, they learnt to think before writing and also learnt to draw pictures from books.

Ramkumar, Dapka: When library books were not available, we were shy to read aloud. Now, I read out in the class, confidently.' He learnt to read in two and a half months and now he can also read the textbooks properly. Now I understand everything.

Jagdish Prajapati, Borkheda: I could not read fluently before but now I have started reading library books slowly. I read more stories but have also read books that provide information. These instances suggest that children gradually, but permanently, get connected to the world of books. It was clear from the manner in which they reeled off the names of the books they had read that they had enjoyed the books very much. Regular use of the library has brought regularity in their habit of reading.

A sure sign of their curiosity being nurtured is from the fact that they are brimming with joy and enthusiasm. Their interactions with us were more spontaneous and cordial than before they began using the library. It did not seem like they were talking to a teacher but was like they were talking to a friend. As some children said, 'Sir, you listen to us and even if we do mischief, you do not scold us. You teach so many things that we like very much.'

The important outcome of using a library is that now children have gradually started moving towards the process of writing. They have also realised that writing and painting are delightful and interesting. These children exude excitement and enthusiasm. They have also become more confident. Perhaps the main reason for this is that when we were trying to make them write their experiences, we accepted the different types of compositions that they wrote, just as they were. We did not critique them. Instead, we praised their work and patted their backs. That is the reason that these children have always been enthusiastic about doing any creative work. Whenever and whatever they wanted to do, they had the freedom to do it. And if they did not feel like doing something, they were free to not do it. There is very little scope for this kind of freedom in our school system, but if diligent and persistent efforts are made, they can open doors to various creative possibilities in government schools too. This is the experience I gained from working with them.



Sona Ahirwar, Grade VI

Babita Jaiswal, a middle-school teacher from Ponasa village, Dewas, told us, 'Children have read a lot of your books. Whenever I was alone, I would give them library books after they are done with their homework. This has increased their interest in reading. Many children have read most of the books and are asking for more.'

Children from schools of Gayasur and Bolasa, (Dewas), Semaliya Nasar and Munja Kheri, (Ujjain), Dabka, (Hoshangabad) and Silpati and Bhunnas, Shahpur, (Betul) said that their teachers also read library books and took them home too. Out of these thirty eight children, thirteen told us that their siblings and other family members read books at home. The children of three villages in the Ujjain area shared that their teachers read books and then make them play games and do activities based on those.

One child who spoke for the rest, said this about the library project, 'If we do not get books, we cannot learn to read fast, make toys, write, read good stories, learn dialogues or puzzles. We learned reading and speaking because of books. When we learn something with interest, we enjoy it and are able to learn easily. We compose songs from stories as we walk through the forest. We learnt to draw new pictures, to play, to know the good from the bad. The story *Guddi* taught us not to take a bath or wash clothes in the river or pond as this makes the water dirty. The wall newspaper helped in developing the habit of writing fast.'

Another one requested, 'Please get more good books because Papa reads them sometimes.' Yet another proudly proclaimed, 'I told my brother that treatment for snakebite is available. There is a book in the school library which tells us all about it. My brother asked me to get the book for him to read.'

One can observe the variety in these experiences of children. They are making connections actively with various library books. This has greatly increased their vocabulary, which is evident from their conversations. They have started to understand that even if somebody does not teach them, they can still learn many things on their own with the help of books. When children learn through books, their happiness knows no bounds. They share it with us and with their teachers in school.

How do children know which book they will like or which they should read? Most children replied that they like to see the title and if they do not like it, they browse through a few pages, and if it is good,

they read it, otherwise, they put it back. At times, they decide from looking at the pictures in the book. Obviously, the plot of the book, the language, its pictures, design and layout, etc. play an important role in making them pick a book. Coloured picture books get preference.

Now that the regular activities of the library are in place and seeing our interactions with the children and the teaching methodology in the classroom, there is a considerable change in the attitude of the teachers towards the children. One can see a positive change in their behaviour. Teachers have started giving out government school books to the children. This was not the case before. The teachers have started showing interest in acquiring knowledge by reading literature other

than textbooks. While teaching a lesson from the textbook, they are also including children's experiences, which means that the classroom transactions are being carried out with the active involvement of the children.

Teachers are also moving towards the process of understanding the theory which is based on child-centric education so that the class can be conducted better. This may lead to the understanding that not all the children will be precisely at the same ability level, that they also differ in the ways that they are able to understand. Is this not an indication of a significant change in thinking? As the NCF 2005 states, a teacher should take up the role of a guide and not just a transmitter of knowledge. Only then, can she or he prove to be a better teacher.

Dinesh, now a Hindi Language Resource Person, Azim Premji Foundation, has worked in the field of education for 30 years with the Eklavya Foundation in Madhya Pradesh. His interests include reading Hindi literature, writing articles on literature and education and making abstract paintings (rekhankan). He may be contacted at dineshpatel3@gmail.com

Learning Outside the Classroom: A Real Life Experience

Genevieve Talang



Children are most intelligent, smart, curious and can learn anything very fast. Apart from learning and acquiring knowledge from their books, learning outside the classroom is as important as learning the prescribed curriculum. As we know, learning outside the classroom means learning from the environment around us and can be called real life experiences. Children can learn many things from their surroundings, though it might be just the mud in their backyard or flowing water in the river. It is not practical to expect a teacher to impart all learning inside the classroom, so it is very important that we allow and help our children learn from nature.



A seven-year-old child student of grade 2 will learn about different sources of water in his environment science textbooks, but sometimes, to make children understand the importance of a concept and why we need to know about the topic, some simple methods of teaching have to be devised. One way of allowing a child to explore nature is to take him/her to a flowing river or a beach and letting him just observe water bodies, plants, stones and soil. Children will learn many more important things from such observations: about how to keep the water clean because here they learn not to pollute it and how to preserve the cleanliness so that they can drink it. This is the simple and easy way of teaching children the importance of studying the topic and will last longer in their minds than a child who has not explored or had the joy of first-hand experience. Here they learn not only about the topic, but also get the physical activity needed to

improve the gross and fine motor skills of a child.



Talking about motor development in physical education, let us take swimming. We all want that children should be safe from accidents in water, so we keep on explaining to our students about safety at home, outside and many awareness programmes and drills of disaster management are conducted in our schools. Let us think about some of the drills which are taught visually - will the child be able to do it just by an explanation or viewing a PPT? That is impossible to achieve, so taking the child outside to a river and helping her to explore is much better as she will learn faster and will love it too.

Learning science in the higher classes is very much more difficult as it needs extra focus to understand concepts especially for some children. I remember myself: how I faced many problems in studying and understanding science without practicals or real-life experiences. Some of the topics can be learnt much better outside the classroom, through field trips, visiting museums, scientific institutions, factories, exhibitions, farming in the fields, doing experiments and projects. One point, which to my mind is very important, is involving parents in helping children.



One of the most amazing experiences I got from my children's teachers was of reminding us about the involvement of parents as being a very important part of child's learning needs. Here both the child and parents learn together as it brings about emotional, psychological as well as physical development. Co-operative work between the

child and the parents will enable the child to learn to work in groups, improve social skills, enhance adjustment, love, trust, co-operation. According to Maria Montessori, when the child and parents do things together, the child's need for love and care is fulfilled and one of the ways this can be achieved is through learning outside the classroom. The joy the child feels is very satisfying, even if the task was only picture or photo pasting or art and craft work.



The National Council of Teacher Education (NCTE) stresses the need for teachers being humane. But with the vast curriculum and hectic work schedule, teachers are sometimes forced to ignore this aspect. Every teacher has to rush to complete the course. So where will she have the time to help children to learn outside the classroom, when she is already occupied with syllabus and curriculum for the whole year inside the classroom? So, it is necessary to plan the curriculum in such a way that child gets to learn outside the classroom in every topic or subject at least once a month



Learning outside the classroom is not only for lower primary but also for higher classes and even college students. The fact is that while it helps young children to grow and develop we cannot deny the strength it brings to older students. For example, while giving assignments to the higher-level students it is very important to make sure that they write facts and think originally. We often see student assignments which are either copied from books or from readymade notes. These things happen perhaps because as teachers we do not tell students to write about their experiences first hand. Although it is difficult, what we can do is organise interviews, field trips and experiments, seminars or conferences.

An assignment on our Constitution, for example, results in writing about it through books. But if a teacher helps students by learning about it outside the classroom with visits to a court, Parliament, or interviews with officials, MLAs, involving themselves in election duty like assisting the elderly, people with special needs, or even poster pasting, there would be some original experiences to write about. Involving them in panchayat or local community work, talking to them about the National Day and how it is related to our Constitution would be helpful. Practical teaching is better than lecture classes which are much harder to remember.



Another example is the field of inclusive education, disability, and special education. Our pre-services trainees, who are all adults (18 to 27). are not aware of some important issues because they have not had practical experience. Being taken out of the classroom, visiting different types of special and inclusive schools and institutions, encountering children with special needs are some of the ways to help their learning. So, learning outside the classroom is important for adult learners and even for teacher educators, since before teaching anything we have to experience it naturally to bring joy to teaching and learning.

All that I have written is from my own personal experiences: first as a student, then as a mother, a teacher and now as a teacher - educator. No two children - not even twins- are alike. We each have a unique way of learning, but what is the same is

that we all live in the same environment, breathe the same air, which is why we all learn better in the real natural environment outside the classroom.

Learning by doing, learning by seeing, learning something in a real-life situation is the best because it brings joy and development to a child.

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Bal Melas

Kumar Amalendu



Significant efforts are being made in Jharkhand to strengthen the local system in order to encourage the education of children under the TRI-PRIDE project. Through this project, the endeavour is to ensure continuity and quality of children's education through community participation.

Vidya Bhawan Society is working in various ways to ensure that this goal is attained. These include: increasing interaction between parents and children, strengthening engagement between parents and the school, as well as the participation of the local communities with the schools and meeting teachers to motivate them to educate every child. The objective was that every child should get education and in order to achieve this, from January 2017, team Vidya Bhawan started working in Jharkhand's Gola, Ramgarh and a few other areas.

First, we strived to make sure that discussions on education were not limited to individuals but were held collectively in groups. From the experience of Vidya Bhawan's associate organisation, PRADAN (Professional Assistance for Development Action), we felt that the Village Organisation (VO) was the perfect platform for raising educational issues. It ensured that efforts to find solutions were made jointly. At this point, the need for Change Vector/Education Change Vector (CV/ECV) was felt as they are seen as an important link between the community and the school. With the help of the members of PRADAN team, the members of the VO selected the ECVs.

To work in the field of primary education, the ECVs, popularly known as *didis*, have to undergo three rounds of orientation, namely, basic training, soft skills training and training in Vidya Bhawan's strategy. Members of our team provide complete support to the *didis* in their area of work and organise meetings for them to share learnings and experiences at the block level on a monthly/bi-monthly basis. *Didis* play a very important role in different activities under various strategies. They also involve other women of the community in these activities.

In the initial stages, when we were trying to get basic information about the region and the schools, we felt that there was a gap between the schools and the community. Parents used to come to the school only when they were required to collect the material distributed under government schemes. It was necessary for us to help the members of the community to overcome their hesitation in visiting the school so that we could move towards ensuring community participation in primary education. Among the various activities that we planned, *Bal Mela-s* provide an important platform for connecting communities, schools and children through a tangible context. It is a great learning experience for children outside the classroom because it fosters interest and understanding in children. Various games based on memory, accuracy, concentration, creativity and imagination are organised in *Bal Mela-s*. These include activities such as drawing and painting, brick-bucket game, glass-coin game, electric circuit cell game, guessing game/memories, leaf-thread design, ring game, puppet show, the world of books and games played on the ground.

A *Bal Mela* was organised in the village school of Sangrampur in February 2017. Vidya Bhawan team members shared the entire scheme of *Bal Mela* and its objectives in the meeting of the VO before the planning of the event. Since the ECV *didis* had not been selected at that time, members of the VO took the responsibility of organising it. It was decided that a group of VO members would go to the school with the Vidya Bhawan team members and get permission from the teachers to organise a *Bal Mela* there for the children. Several people were given the responsibility of bringing materials required, which were available in the village itself—floor mats, bedsheets, buckets, and glasses etc. It was decided that apart from these things, other essential items would be provided by Vidya Bhawan.

A meeting of the School Management Committee (SMC) was convened in connection with the organising of the *Bal Mela* with the support

of the people of the community. Members of the SMC, teachers of the school, Vidya Bhawan team members and members of the community participated in the meeting where the idea of *Bal Mela* was introduced and explained by the Vidya Bhawan team members. In the end, details of the various activities were shared. Although the school management did not object to the idea, there were many queries regarding the conduct of the mela, the activities and other details about food and participants.

After the meeting, everyone understood that the fair is being organised for children and they are the focal point of it and that it would be totally different from the other fairs held in the village as there would be activities for children related to teaching-learning organised by community participation. It was decided in the meeting that the *Bal Mela* would be organised on February 3, 2017, between 10.00 am and 1.00 pm. Children of primary classes from two nearby villages—Bisa and Murudih—also got permission to participate in this fair.

The *Bal Mela* began with a lot of eagerness. Students, parents and teachers took part in all the activities with great fervour. One does not usually see teachers, parents and children play together, but here it could be seen happening. The men and women of the community were present during all the activities and were watching these with a lot of interest and also eagerly participating. This fair was specially organised for the students of primary classes, but everyone was so excited that we could not stop the upper primary students from participating in various activities because they were equally keen.

As mentioned earlier, the children of primary classes from two nearby villages also participated in the fair with their teachers. There were about three hundred children and fifteen teachers from three schools, nearly a hundred parents, four members from Vidya Bhawan who came especially from Udaipur, three members from PRADAN, and three local members from the Vidya Bhawan team. At the end of the fair, the members of Vidya Bhawan, Udaipur and the local team members presented a puppet show.

The students enjoyed this fun-filled day. It proved to be a great and special opportunity to educate and create awareness among the people of the community. Its immediate impact was seen in an increase in the attendance of children. In the next session, four or five parents took their children out

from the private schools and admitted them to the government school of the village. In Sangrampur village this year, the whole village, children and teachers also took part in the enrolment campaign. Organising *Bal Mela-s* is now a regular feature. In the initial months, we played a pivotal role in organising them on the special demand of children and school.

Meanwhile, *didis* had been selected and Vidya Bhawan conducted an orientation programme for them to work in the field of education. In the beginning, they had to discuss two points in the village organisation—parents should send their children regularly to school and make them study at home in the evening. The *didis* and members of Vidya Bhawan would also make a list of irregular children by visiting the schools.

During recent times, the experience of conducting *Bal Mela-s* has been very good and we also started getting significant support from the *didis* in organising the fairs because they won over the trust of the teachers through regular interaction. To connect the *didis* directly with the activities of the school, Vidya Bhawan prepared an orientation module on organising *Bal Mela-s*, in which the details are explained. After going through this orientation programme, the *didis* have started organising the fairs in their respective government schools successfully. Now, Vidya Bhawan has to only look into the arrangement of resources for the fairs.

One can clearly see that activities like *Bal Mela-s* help children develop a liking for school and as a result, they start coming to school regularly. The number of people attending the monthly meetings of the school was negligible earlier, but now, more than half the members are present. The credit for this goes to the continuous efforts of the *didis*. Vidya Bhawan has conducted three orientation programmes to encourage the first batch of *didis* to work in the field of education and they have now teaching-learning activities for the children outside the classrooms in their respective village schools in the twelve villages where Vidya Bhawan started this project. The *didis* come to school for two or three days a week. They issue library books, organise poetry recitation and story-reading activities among the children and help with the preparation of the cultural programme that is organised at the end of the week.

Vidya Bhawan is working on further plans in view of the growing interest of the children in various

activities of the school apart from the textbook-based studies in the classroom. Work has begun on this direction and soon we will be able to arrange activities like *Bal Mela-s* in other schools of the block. The *Didis* working voluntarily in the field of education and those from the VO are the main collaborators in this significant work. Vidya Bhawan has now decided to provide basic materials required to conduct *Bal Mela-s* to be kept in the VOs offices in the village so that people of the community can organise *Bal Mela* every four to six months without having to wait for them.

Taking this experience forward, we are looking at the VO's office as an activity centre outside the school/classroom. This has been done with the consensus

of the community. In every VO office, Vidya Bhawan is providing storybooks for the children, materials required for *Bal Mela-s*, strings of beads to learn counting, reading material related to the education for *didis*, etc. In the evenings, children of primary classes will be able to take part in sports and other teaching-learning activities under the supervision of the *didis* near the VO's office instead of playing elsewhere. Our aim is to develop the VO office as an activity centre and to recruit a few women as *didis* for change in every village so that the work in the field of education continues, the children get quality education and the spirit of ownership of the school gets inculcated in the community.

Kumar Amalendu has over 20 years of work experience with government education departments, while working with SSA, SCERT, DIETs. He is now with the Vidya Bhawan Society's TRI-PRIDE Project (Jharkhand) to ensure inclusive, equitable and quality education. He may be contacted at kr.amalendu@gmail.com

Morning Assembly as a Learning Experience

Manoj Kumar Tripathy and Shiv Kumar



Learning is a continuous process. It takes place anywhere and everywhere, consciously or unconsciously. When we learn consciously it becomes part of our knowledge, increases our understanding, makes us skilful and we are able to get experiences to construct further knowledge based on previous experiences and learning. It may be effortful, situational or contextual facilitated or non-facilitated or any other. On the other hand, we also learn many things which may not have an immediate impact but becomes important in due course of time. So, learning is an inevitable part of our life. It has no boundary or limitation.

In our school education system, learning and its processes are very important. Every effort is dedicated to students' learning - in the classroom, from textbooks, well equipped laboratories and libraries. But there are many more established, yet informal, ways which contribute to the learning of students and are an important and integral part of it. It is true that a good proportion of learning, which has a great impact on classroom and overall learning, takes place outside the classroom.



Whatever is learned in the classroom must be connected and articulated with outside-classroom experience and expectation, must have relevance with context and surroundings. Only then can learning be made concrete and provide the base and opportunity for further learning.

In our schools there are many opportunities for children to learn outside the classroom. Our experiences have been that children learn a lot

through outside classroom activities and in a joyful way with curiosity and enthusiasm. Whatever they learn through these processes and opportunities have a deep impact on their present and future learning

One such activity in school is *Chetana Satra*, or morning assembly. This attractive, vibrant, joyful, informative and interactive session takes place outside the classroom at the start of the school day. It has been well said, 'well began is half done'. *Chetana Satra*, which symbolises the beginning of school activity, justifies the above statement. *Chetana Satra* is not of the traditional type, limited only to ritual prayers to begin school activities. It has become more inclusive and highly interactive. It gives scope for children to learn individually and collectively, to share their learning and experiences and to perform in different ways. Most of the time it is organised and conducted by children themselves through *Bal Sansad* and *Mina Manch*. More importantly the activities of *Chetana Satra* are closely connected to our curricular expectations and classroom transactions. Local cultural connects and enchanting folk prayers and, occasionally, songs, which add a cultural flavour, are the essence of the *Chetana Satra* and break the monotony and add vibrancy and add energy to the morning assembly. Our assembly line formation can very easily be correlated with the mathematical concepts presented in grades 1 to 8. Further, children get the opportunity to generate discussions or to use their imagination and express their experiences in both *Chetna Satra* and during their classroom activities. More than that, *Chetana Satra* provides children the freedom to take leadership initiatives to cooperate, coordinate, support and discipline each other and at the same time respect the culture and local traditions in a harmonious and friendly atmosphere.

Chetana Satra-s are compulsorily conducted through the public address system. This eliminates diffidence among children as they know they are being heard and their activities are being watched by their parents, guardians and the community, who

give them feedback and appreciation. Sometimes famous local personalities, artisans, craftsman are called in to address and share their experiences,



giving children the chance to ask questions or share their experiences. This is how we have managed to transform the simple morning assembly into a significant learning space by creating a vibrant change through the well-thought-out concept of *Chetana Satra*.

Two other participative concepts that are practised in our school are *Bal Sansad* and *Mina Manch* which are directly concerned with children learning outside the classroom. In fact these two are democratic forums of the children, for the children and by the children where they learn leadership skills, active participation, decision



making, self-discipline, cooperation, coordination, support, sharing and delegating responsibilities, collective responsibility, working in and as a team, accountability, idea generation, self-reflection and critical thinking, resource identification and generation, planning, execution and evaluation in a democratic way.

The *Bal Sansad* is headed by a *Pradhan Mantri* (prime minister) with a deputy and includes ministries like *Shiksha* (education), *Swasthya & Swakshata* (health and hygiene), *Vigyan & Pustakalay* (science and library), *Jal & Krishi* (water and agriculture), *Sanskritik evam Khelkud* (culture and sports) headed by ministers and their deputies. In addition, there is a provision for a Minister for Disaster Control. The Deputy Education Minister must be a girl student and she is the ex-officio head of *Mina Manch* and is also known as the *Mina Mantri*. Each ministry has a fifteen-member executive committee which helps in its smooth functioning. All these ministers and members of the executive committee are elected from the five 'houses' with proper and proportional representation from the houses.



There is also a teacher-coordinator to facilitate and coordinate the activities of *Bal Sansad*. It has proved to be a self-sufficient and sustainable model which provides scope and opportunity to children to work in cohesion in a democratic way. The role and responsibility of the functionaries are clearly decided. Meetings, headed by the *Pradhan Mantri*, are held fortnightly and monthly to discuss agenda and issues, for further planning and evaluation, decisions are taken, and priorities decided. Even the minutes are documented, making this an opportunity for collective learning where children learn with zeal and great enthusiasm and become ready to take responsibility and ownership with a sense of appreciation and belonging.

Another dynamic democratic forum which enhances learning for the girls is *Mina Manch*. All the girls from grades 6 to 8 are members. As mentioned earlier, it is headed by the Deputy Education Minister of *Bal Sansad*, known as the *Mina Mantri*. A lady teacher is the coordinator who coordinates and facilitates the activities.

The *Mina Manch* also meets twice a month and looks after the educational and related issues in school. Members are encouraged to take initiative in the admission process, attendance and the participation of girls in different activities.



They discuss educational issues, individual and community health and hygiene issues, social obstacles such as *bal vivah* (child or early marriage), *bal majduri* (child labour), atrocities on girls, dowry, cultural stigmas related to girl child, female foeticide and organises programmes and activities in school and in the community to spread awareness to root out and overcome these problems.

There are many success stories related to *Mina Manch* where child marriages have successfully been stopped from taking place. In many of the schools, it is the impact of the *Mina Manch* that the enrolment and attendance of girl child has increased tremendously as it is real girl empowerment from the beginning. They learn about their rights and contribution to society and about life skills through programmes they have themselves organised.

Bal Sansad and *Mina Manch* are constituted at the beginning of every academic session and now government schools in other places have replicated the election process carried out by election commission. This includes announcement of *Bal Sansad* election date sheet, electoral rolls, nomination, election campaigning, model code of conduct, grievance redressal, returning officer appointment, polling booth and polling parties, voting slips, ballot paper, counting of votes, declaration of result. The entire process is a great learning of the process of a democratic election and its importance for students as citizens of a democracy. In fact, through these platforms they learn institutional behaviour, discipline and manners.

The School Disaster Management Committee (SDMC) is another forum where children participate actively and learn to identify hazards both in school and in the localities from where they come. They learn to recognise potential hazards affecting the lives and property of human beings as well as nature. They also learn rescue processes, first aid and rehabilitation. There is a twelve to thirteen member committee with major representation of children, including all the ministers of *Bal Sansad*, *Mina Mantri*, a focal teacher, chairman of VSS and three *Bal Prerak-s* (peer educators) who train other students through mock drills and exercises related to different hazards every Saturday. As the state of Bihar is vulnerable to frequent floods, droughts and other natural calamities, the role of SDMC became pronounced not only in rescue and rehabilitation but also in continuation of regular educational process of children. Thus, the process of learning about natural calamities, man-made hazards prevention, control, rescue and rehabilitation is an organised and natural one which is enjoyed greatly with full participation in the drills and exercises. More importantly what they learn they share with the community to ensure all-round security.





The concept of *Poshan Vatika* (midday meal) also ensures learning of children outside the classroom. Children learn the importance of equality and equity, importance of food and its conservation, health and hygiene, their personal and collective responsibility, community life. The other benefits

are sensitisation towards the cultivation process, nutritional value of plants and their role in our daily life and healthy living. They also learn the value of labour and respect the contributions of others in their lives.



Real learning of children is not limited only to the classroom or classroom activities. There is always a wide scope to learn outside the classroom. Children actually learn from the context, their surroundings, institutional setups, community and many more. We must not restrict them within the walls of the classroom and force them to become bookworms. We must facilitate the enjoyment of experiential learning. The horizon of learning is wide and the sky is the limit.



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Books: A Window to the World

Manoj Nigam



It is said that children are the future of society and books, its mirror. Textbooks alone are not enough to develop children's intellect. There is a world outside the classroom and books are an important part of this world. But in our country the number of good books available to children is very low. According to a survey, access to children's literature in India is limited to one book per five children: in comparison, in the United Kingdom it is six books per child. Such a huge difference! The government and society are not aware of this gap, even though everyone acknowledges that reading good books is very important for personality development.

Whenever there is a discussion on improving the education system or the teaching-learning process or when education policies are made, the concern for developing the reading habit and the importance of libraries to learn independently, is expressed. The Mudaliar Commission Report said that the library should be the most attractive place in the school. Books and libraries have been given great importance for the strengthening of basic literacy. The Draft National Education Policy 2019ⁱ also gives importance to the expansion of school and public libraries and to developing a culture of reading and communication.

From the very beginning libraries, where children can read books in addition to textbooks, have been an important and essential part of the various projects of the Eklavya Foundation's educational initiatives. The aim has been to develop a culture of reading and performing various activities based on books. About three decades ago, our country neither had the reading culture nor were books available, especially in Hindi-speaking areas. We, at Eklavya, felt that there were not enough good-quality books for children on education and the number of publishers was also few. Though there was no demand, there was a definite need. Eklavya had learnt much from its experience in the field of education.

Need for children's books

From the educational point of view, there was a shortage of books in consonance with the age and interest of children. Some books were available, but they were very expensive and out of reach of the common person. Books in Hindi for early readers, adolescent and for creative activities were almost non-existent. Even for teachers, not many books were available and there were hardly any on pedagogy and even if there were some, it was difficult to follow them. Looking at this scarcity of books, Eklavya started its publication programme based on its experience of publishing *Chakmak*, *Shaikshik Sandarbh* and *Srote*. In the initial four to five years, Eklavya's books were used only in the areas where it operated. At that time, we had assumed that good English books in the Indian context were available, but only a few publication houses, such as the National Book Trust and the Children's Book Trust, were catering to Hindi and other languages. In the 1990s, after Eklavya had gained some experience in the field of publication, we realised that there was a dire shortage of children's literature not only in Hindi but also in English and other Indian languages and if we kept the availability of books to children in big cities aside, it was negligible for the rest.

Around 2011ⁱⁱ, the country's largest association of business institutions, FICCIⁱⁱⁱ (Federation of Indian Chambers of Commerce and Industry) began to consider publication as a separate sector. To understand the world of Indian publishing, FICCI initiated a publishing wing for undertaking surveys, seminars, workshops and studies related to publications. According to FICCI, in the area of publishing, India is among the top seven countries of the world.

Similarly, *Parag*, an initiative of the Tata Trusts, was set up to support the development of and access to good quality books in Indian languages for children. It has helped in the creation and spread of better

ⁱwww.nizamuddinrenewal.org for details

and original children's literature and consistently tried to improve the overall eco-system of children's literature. Under the *Parag* initiative, a study conducted by ValueNotes revealed that in the last two decades about one hundred publishers have emerged from the organised sectors, out of which around twenty publish quality, original content. There are about 2500 publishers for publishing books for children across the country but most of them publish only mediocre books. According to the same studyⁱⁱⁱ, conducted in 2013-14, the publishing market in the country is around Rs 11,500 crore of which children's literature market amounts to just Rs 600 crores but is growing at the rate of 20-25% annually. The market for children's literature is 5% of the total market size. The government has been the largest buyer of children's literature in the country and while 30% of the books are consumed in urban areas; 70% is meant for rural distribution.

Eklavya's portfolio

Developing and disseminating Eklavya's publications continued uninterrupted with the support of the Tata Trusts and some other institutions. The Tata Trusts study had also pointed to many other challenges in developing children's literature, such as lack of writing skills for children's literature, high cost of developing original children's literature, low remuneration and lack of recognition to the writers. Despite all these challenges, there are more than 450 books today in Eklavya's publications' portfolio, among these, one can find a variety of books catering to the varied interests of children, young readers, teachers and academicians. There are picture books, storybooks, poetry books, activity books, drama books, puzzle books, books on pedagogy and innovative textbooks. Books and literature have been developed in various formats—small and large books, accordion books, cards and posters—for readers to use these according to their needs.

To resolve the scarcity of quality educational supplementary books, Eklavya, along with some other organisations, such as Pratham, Tulika, Tara, Anveshi, Katha, A&A Publishers, Jyotsana Publications, CLR (Centre for Learning Resources), Sahmat etc. also published good books. Organisations like the National Book Trust, NCERT, Children's Book Trust, Navneet Publications, and Scholastic India were already working in this area.

By 2000, the number of books developed by Eklavya had reached around sixty. We participated

in various events such as the World Book Fair and our books received an encouraging response. Eklavya was not the only one publishing good children's and educational literature, some other organisations and publishers of the country were also doing excellent work in this field. But all faced the same problem of very limited channels for marketing and promotion.

The Pitara initiative

At this point of time, we thought of creating a space where not only our own books but all books and TLMs for children and education, developed by other publishers and institutions across the country could be made available to the public. So far, we had kept our books in a small, dark storeroom inside our office. When a new office space was set up for our director, who, till then, used to sit in the garage adjacent to our Bhopal office, we decided to convert the garage into a place where general public, teachers and employees of other institutions could come, see, read and buy the books. We named this place, *Pitara* and later it came to be known as, '*Pitara-One Stop Education Store*'. In Bhopal, the culture of reading had not yet developed, still, *Pitara* got a very good response. Encouraged by this, we started *Pitara* in Eklavya's Indore office and the response, there too, was very encouraging.

Next, we wanted to set up *Pitara* in all the cities across the country. Since the resources available to us are not enough, we thought of collaborating with institutions and small groups working in the field of education in various cities and started contacting them. Some institutions liked the initiative and *Pitara* started in cities like Durg, Faizabad, Mumbai, Udaipur, Kanpur, Calcutta, Delhi, Gurgaon, Jammu, Surat, Valsad, Patna, Raipur and Pune.

More than 2,500 selected books of nearly 50 institutions were kept in these *Pitaras* including books from the National Book Trust, Children's Book Trust, Tulika, Katha, Pratham, Navneet, NCERT, Vigyan Prasar, Paryavaran Edutech, Homi Bhabha Centre for Science, Nirantar, Sahmat, Arvind Kumar Publishers, Samavesh, Jodo Gyan, Navnirmitti and Montessori Child Education. We had both good and bad experiences as the expansion happened. The most difficult task was to sustain a division like *Pitara*. Wherever it could not be sustained (due to the low price or demand of the books), the institutions that supported it, came forward to provide *Pitara* with subsidies. The Tata Trusts also gave us initial

financial support to fulfil this dream. In about 10 years, *Pitara* had started in almost 22 cities across the country and we believed that we would be able to create a reading culture by disseminating quality children's and educational literature through *Pitara* in more than 50 cities across the country. But the books were not selling, and we were struggling financially. We had to accept the fact that though our purpose was to make good books available, our model of *Pitara* was, in a way, a loss-making model.

Though we were not very successful in running *Pitara* collaboratively, it was through it that we promoted books among NGOs working with children and in the field of education, in book fairs, various government schemes and during parent-teacher meetings. Due to Eklavya's extensive experience in the field of education, one of the achievements of *Pitara* was that we could provide quality books and a better resource of TLMs to readers at a much lower cost. We could also create trust among various institutions, academicians, parents and teachers associated with Eklavya that the books and educational materials in *Pitara* would be carefully chosen from the educational point of view. Also, it was convenient to be able to access all the selected books from all over the country under one roof. With the advent and growth of the internet, an online shopping portal, *pitarakart.com* was launched for the benefit of readers in the far corners of the country.

Meanwhile, there was a demand from various institutions and schools to orient them on how to use these books. So, we started organising workshops in Eklavya and other institutions. In order to develop a reading culture, we reached out to children and teachers through story-telling sessions in schools. The activities, craft, origami etc. from the science, social studies and language books were promoted extensively.

Children's books in rural areas

According to the Tata Trusts study, only 20% of the 70% books that are meant for rural distribution, reach the rural users. There is no data available on how many children open and read books. The library in many private schools exists solely for the purpose of showing it to the authorities in order to get recognition for the school.

According to a study^{iv} conducted by Eklavya in 17 villages of Dewas and Ujjain districts and in the Adivasi-dominated area of Shahpur in the Betul district of Madhya Pradesh, books were given the

last priority in a hundred families. Only one member of a family had gone to the district headquarters to buy a book. After this study, we tried to offer more concession on books so that more books could reach the villages. We also started putting up bookstalls in the weekly market (village haat) in rural areas and had many interesting experiences. Somebody commented that we must have got these books for free which was why we were selling them so lower prices. In a weekly market in the Dewas district, books were not being sold at all, but we were still happy and satisfied because children and women were looking at books, touching them and generally examining them. We found a child selling *jamuns* in the market. We bought the fruit for five rupees and were pleasantly surprised when that child came to our stall with five rupees and bought a book. It was a very gratifying incident for us, but the fact remained that the sale could not even cover our travel expenses. We continued our efforts to see that books reach rural areas but could not sustain it for economic reasons. Still, we are happy that the books are reaching the children in rural and remote areas through various projects of different institutions.

The situation in big cities

After a little exploration, we found that in no city were the books for children available under one roof. A few prominent publishers, who have their stores only in the big cities, sell and promote only their own publications. So, there was a paucity and unavailability of good books for children. Some institutions and publishing houses had started good initiatives, but their problem was the distribution of books. Most of the good literature that was developed remained in the warehouses. It was also a fact that there were no channels available in the market for low cost, good-quality books and that children do not have the freedom to buy books for themselves. Seeing the school as a channel, we tried to publicise books during parents' meetings. But the learning from this was that readers and parents in the Hindi regions do not spend much on books and the parents of elite schools find it below their dignity to buy low-priced books.

According to my experience, new parents are gradually understanding market trends; they buy books and are demanding good books from schools. The Kendriya Vidyalayas are encouraging children to read books, which is a positive step. According to the publication sector of FICCI, books have always been an essential medium for the

development and promotion of human values, catalysts for the upliftment of the nation, helping in preserving and spreading new ideas, providing education and values and thus, helpful in overall personal development.

Regardless of all the problems and expectations, the country's publishing sector is growing at an annual growth rate of 30%. But it remains to be studied in the future, as to how much original and good content is developed as part of this growth; how much of it is reaching the readers and how many people read or if the projected growth rate has been fudged. Also, what is the percentage of textbooks, keys or solution books, guides, religious and non-religious and political literature in this

figure of growth? Why would anyone bother to collect data about the exploitation of the writers and authors? Will it be possible for the common person to buy books? Who will tell us whether books are available in folk languages or not? If not, who will develop them?

Keeping in mind the critical challenge of sustainability, we are on a journey to fulfil our dream of meaningful education for all to build an egalitarian and just society on the path of sustainable development and we have one dream, hundreds of co-workers, thousands of authors and illustrators, and millions of readers with us. We hope that the current generation will move ahead to a better rate than one book per five children.

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History Outside the Classroom: A Student's Experience

Nandan Kaushik



To learn is to take in new knowledge. Sometimes we are told what to learn. Sometimes it is left to us and sometimes we choose to go towards something and take it in. The classroom is the seat of formal education in the world we live in, training students about all that has happened before them, so as to prepare them for the world around them, so that they can go out and change it in the future.

However, it still does not provide a holistic view of the world. Theory takes precedence over practical learning. Sometimes, in reality learning, and a lot of it at that, happens outside the classroom. The area outside the classroom comprises the entire world and this is what we are being prepared to enter after our schooling. So to get a taste of it before being pushed out there definitely prepares us better. Here are my experiences with learning outside the classroom.

My subject of interest is history. I have a fascination with the past and with artefacts, old buildings, ruins, records, antiques...if it's not from today, I will probably be interested in it! However, the past is not to everyone's liking. I would even say that history is a subject that some despise because of the way it is taught within the classroom. There are some teachers who are amazing history teachers, able to bring the subject to life, draw maps and give fascinating explanations, but it seems to be the unfortunate reality that most people I have met have had terrible history teachers who have ruined the subject for them forever. I too have had a bad history teacher, though in school the teachers we had for history were mostly quite good. However, we occasionally had biased teachers who only knew how to read from the text, had no real knowledge in the subject, would make students copy out questions and answers as work because they did not know better, and it was these occasional teachers who ruined the subject. Despite school ruining it for me, however, my passion for the subject did not go down because of all that I did outside.

I discovered local history in grade 9, before any lasting damage to my interest was delivered! The Cooum cultural mapping was where it started. How

many know that the Cooum river, now almost a drain, in Chennai, was once considered a holy river, with remnants of temples going over a thousand years along its banks? From that point, I moved on to the brief Adyar Cultural Mapping. Meanwhile, a Facebook group called Madras Local History Group began to draw me in further, with photographs and interesting pieces of information.

From there, my involvement with local history grew, as I attended walks, talks, heritage trips, even helping conduct a couple of walks myself. These entailed recce trips, where we walked the length of the route, figured out where we had to ask for permission, accordingly set up which places would be visited, put out the word, and finally, take people around on the day of the event. This I did twice, with Nivedita Louis, a journalist and historian.

Conducting and taking part in all this gave me an idea of what was going on in my city, Chennai, even while the events of the nation and the wider world were taking place and of the historic importance of the city. It also taught me how heritage in the city is being razed down due to our ignorance and I learned how little is being done to stop it. For instance, when Shah Jahan was being crowned, Madras town was being bought from the Raja of Chandragiri. When people talk of the first railway in India, they think of the Mumbai-Thane line. But even before that, the railway was being used to transport timber down from the Red Hills in Madras. Royapuram Railway Station is the oldest surviving station in the country. One of the first hotels in India with an elevator which was in existence in Chennai, ended up as a Bata showroom and was torn down last year for commercial purposes.

Apart from local history, thanks to my grandfather's collection of antique coins that I am slowly building up, I learned about numismatics. Attending coin fairs, conducting research on various coins minted across the centuries, their denominations and relative values, all taught me about past economies and the complexity of money in the past. I found out, as well, how coins represent our times, with the language on them and anything they

may have engraved on them. Coins can also tell us the economic strength of a kingdom and how prosperous it was, both by the coin and metal values, as well as how much it can be purchased for today.

During my visits to old and ancient temples on heritage trips, I found myself developing an interest in the writing etched onto the walls. Interested in finding out what they said, I did a course in Tamil epigraphy with the REACH Foundation. Fourteen Sundays and two trips to ancient temples later, I can read Tamil inscriptions, from Tamil Brahmi, dating all the way back to 5 BCE and found on pot shards and on rock faces, to the Tamil inscriptions of the Pallava, Chola and Vijaynagar times and also very commonly on temple walls, all the way up to even British era Tamil inscriptions up to around 200 years ago

Though my main interest may be History, reading is also a favourite hobby. Imagine my joy when I discovered the 200 year old Madras Literary Society, a library with over 55,000 thousand books set up in 1812 by men working for the East India Company. These books go back over 400 years and the library is in a heritage building. I visit on and off, earlier to help with indexing and cataloguing, and now with running their Instagram page. Volunteering at the MLS has taught me about the

kind of literature and magazines in circulation years ago and has given me a peek into colonial life. I have volunteered at the MLS stall at Lit for Life, the annual literature festival of Chennai. This has helped me interact with a host of authors I normally would not have met, as well as taught me how to manage a stall at an event, a skill that may be required later in life.

Throughout all this, I had to go to various places on my own and because of this, my sense of location and geography sharpened. I started taking public transport everywhere I went, which meant I had to quickly figure out directions and routes.

Most of what I have done outside the classroom has been informal (except for my epigraphy classes). However, the common thread running through it all is that they are all done through interest. The push was completely internal. My travelling by public transport may not seem like much, but it has taught me communication, prices of various tickets, distances, time, accommodation, adjustment and a sense of independence. A classroom is merely a structural setup, that gives you a set of things that have to be learned within a given period of time. Internships, volunteering, even personal projects: all these give you an independent view of the world. If you were to get out of the classroom, and explore by yourself, the possibilities are endless.

Middle School Shiksha Protsahan Kendra -I

Nidesh Soni



Shiksha Protsahan Kendra (SPK) is an effort by the Eklavya organisation in collaboration with the local community to provide quality education to children in innovative ways. This is a place where children learn at their own pace and their parents can come without any hesitation and intervene in the management and operations of the centre. They can meet the centre operators, or teachers, (those who teach children at the centre) and ask questions regarding their studies. There is no hurry to complete the course, nor is there a competitive atmosphere. Every child here attempts to acquire the capabilities of mainstream education in his/her own way, which was missing in the hectic schedule of school life.

In some districts of Madhya Pradesh, *Prathamik Shiksha Karyakram* (PRASHIKA), run by the Eklavya, has left an indelible impression in the education world. The concept emerged from the experiences of this programme which showed that the effort to change the educational system is incomplete without community participation. SPK programmes are being run for about twenty years for children of primary schools in different areas through Eklavya.

Primary Shiksha Protsahan Kendra

SPK works for two hours before or after school hours near the primary school, in the village or neighbourhood with about thirty five children in a centre. We try to take children who need the maximum help in their studies and priority is given to girls, children of deprived castes or families. A local centre operator, usually from the village itself, is chosen with the consent of the community to run the centre and is given academic training. Eklavya provides the materials to be used by the children and the honorarium of the centre operator. In some places, some part of the honorarium of the centre operators and cost of material is also shared by the parents. A committee consisting of some local people and parents is formed and hold monthly meetings. During the meeting, there are discussions and reviews regarding the centre's maintenance, management, children's studies, difficulties faced in the running of the centre and

the attendance of children. There is an associate for follow-up work for every five or six centres, who regularly observes the centres and helps the centre operator with every aspect of academic support and running of the centre.

Eklavya organises fortnightly and monthly meetings to provide regular academic support to the centre operators and associates wherein academic planning and preparations for the centre and the arrangements/problems related to the centre are discussed. The centre operators, associates and members of the parents' committee also visit other centres/institutions for capacity building, so that they can see the efforts being made there and incorporate them at their centres. Apart from this, a week's training is arranged for centre operators and associates twice a year. There is also a continuous assessment sheet in all the centres to assess and record the competencies acquired by the children. After preparing the children to a certain level, they are sent to join the mainstream education of the school and the other needy children come to the centre in their place.

With the passage of time, this form of SPK has become important and in Eklavya, this programme continues in many forms and is highly appreciated and even used as a model. Eklavya collaborates with these institutions to develop and establish the SPK model by providing assistance with training and teaching aids. One of the major reasons for the success of this programme is community involvement.

Middle School Shiksha Protsahan Kendra (MS-SPK)

In 2016 Eklavya started this experiment in twelve villages of Shahpur Vikaskhand in the Betul district of Madhya Pradesh with the financial support from Jamshedji Tata Trust Mumbai. As the name suggests, efforts have been made to teach the children from grades 6 to 8. The procedure followed to help the children of secondary schools is quite different from the primary *Shiksha Protsahan Kendra* as the needs of this age group and class are different from

that of primary school. Here we will talk about the aspects that make this experiment different, as well as the basis for these changes.

Centre Operator

The centre operator is like a friend who has the maximum engagement with the children and who is with the children every day in the role of a facilitator. In the primary SPK, the centre operator is selected from the local village. As children of grades 6 to 8 have to study subjects like mathematics, language, science and social science, it is necessary that the centre operator should have the understanding of these subjects to a certain extent and should also be ready to learn. Since most MS-SPKs were being opened in the far-flung villages, it was very difficult to get suitable centre operators in the villages. Although according to the SPK model the centre operator is selected by the community, we decided that we would try and find centre operators in nearby villages, pick two or three suitable candidates and suggest their names in the parents' meeting and one among them could be chosen by the community to run the centre. When we explained the problem of finding a local operator to the community, they agreed with us and we appointed centre operators in this manner.

Formation of groups

Prior to introducing children to the centre in primary SPK, a baseline test in mathematics and language is conducted for all the children. After analysing the results, a total of 35 children are admitted in the class and then they are divided into three groups, based on the abilities of the children. Group A has the highest performers, group B has medium performers and students group C are low performers. Children are assessed from time to time and the abilities acquired by them are entered in continuous evaluation sheet and then on that basis children move from group C to B and then to group A.

Student grouping is based on children's ability and not on the basis of their class or age. Our colleagues in the MS-SPK team felt it was not appropriate to label the children and that whatever name is given to the groups, the children would come to know after a while that the group they are in is based on their ability. So separating students according to their capabilities can negatively affect the confidence of pupils whose performance is not satisfactory. They feel inferior and lack confidence, more so when a child of grade 3, 4 or 5 is put in

group C on the basis of ability which is decided by the operator in the course of the classroom teaching and can be changed.

One of our long-term goals was to try continuously to build the capacity of the centre operator in order to maintain their autonomy and enable them to take better decisions for children in the class.

Our thinking about subjects

Mathematics

NCF 2005 says that 'all children can learn mathematics, and all children need to learn mathematics.' We work on this premise. Mathematics should not be a mere subject for children, they should use mathematics for reasoning, to solve the problems of their daily lives to use mathematical methods to solve their problems. In order to achieve these skills, it is essential that children have number sense (which includes the understanding of numbers and operations), which we work towards. We also chose some other concepts like fractions, percentage, decimal, negative numbers, mensuration, indices etc.

Before starting our work on these mathematical concepts, we conducted a baseline test for children and identified the areas where we had to do the maximum work with children. It was not possible to work on other mathematical abilities without these competencies. In my view, due to the graded nature of mathematics we have to move in a sequential manner to gain knowledge in it.

Language

Language is the basis for all subjects as it cuts across the curriculum and focuses on reading, writing and expression. Reading means reading with comprehension. We do not give priority to writing skills in the beginning, more attention is given to reading and expression. Although writing is also a medium of expression we pay more attention to oral expression. For this, the children's library and its books are our biggest resources. We work on language teaching through reading books and doing different types of activities with them like independent reading, group reading, storytelling, creating plays based on stories we have read, writing a daily diary, gathering news, creating *Bal-Akhbar*, a children's newspaper, writing letters to each other and singing poems. We believe in context-based teaching of language rather than the traditional method of teaching letters or words

Science

Children should not be given only conclusions and asked to memorise them, instead they should be encouraged to understand and share their understanding, express their opinions, experiment, investigate and conclude for themselves. Eklavya has developed the Hoshangabad Science Teaching Programme, an innovative model of science teaching and also created three textbooks for grades 6 to 8 entitled *Bal Vaigyanik*. Our work in the MS-SPK programme is based on these books.

Social Science

We choose small projects from the local context and environment such as collection and storage of *tendu* leaves, brick making process, survey of water resources in the village etc. Through these projects, we give the children opportunities to develop their competencies in understanding, analysing and comparing. Such small projects help children to analyse and learn about the happenings in their surroundings, how are they connected with them and how they affect them. Further, they can think, understand, discuss and talk about it in a better way. The experiments, done with children outside the classroom, have contributed immensely in enhancing their understanding.

Discussions on social issues

We started a new practice in the form of monthly meetings in which colleagues working in the MS-SPK team sit together on last Sunday of every month and read a paper on a particular topic or watch a movie and then discuss it. We talk about gender, race, exploitation, discrimination, equality, reservation and things happening around us. These discussions have helped to develop positive thinking among our members. After some time, the

members of the team are able to talk about these issues in the parents' meetings and implement changes. Parents' meetings are no longer held at any religious place because women were not able to participate during menstruation. We have been able to remove the myth to some extent that menstruation is a bodily function and not a 'curse' and now at least the team members have been able to overcome the misconceptions associated with it and efforts are on to raise awareness among parents. We have also been able to discuss the fact that no one can be discriminated on the basis of food, caste, colour, physical impairment or religion. Some short documentary films like *Laddu* available on YouTube have been very helpful in this regard. We have talked about many important issues with children, such as the good touch-bad touch, discrimination on the basis of each other's food, lifestyle and caste.

A lot of preparation and time is required for these efforts and we have tried to do our best. We regularly invite local youth to these meetings as they are concerned with educating people in these matters and have tried to connect them with these efforts. Within two or three years, we have been able to prepare about fifty young people who are helping us in different ways to bring awareness in villages.

MS-SPK is not an option for government schools in any way, it is an effort made in collaboration with the local community to help children and parents overcome the difficulties faced in the mainstream education of our school system. Such dialogues and discussions on education with the village community builds an educational environment in the village and strengthens these efforts.

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My Experience with Shiksha Protsahan Kendra-II

Nilesh Malviya



We worked with the community in Tamia Vikas Khand, Chhindwara, Madhya Pradesh, for three and a half years to develop a culture of reading and writing in rural areas by providing the children with educational literature and other related material, ensuring that educated young men and women of the village help them and the parents raise their children properly and send them to school regularly. At the same time, we tried to create a friendly environment in government schools so that children would not be scared of reading and writing and participate in the activities of the school with enthusiasm and confidence. Thus, a relationship between the community and the teachers was established. Necessary steps were taken to prepare the youth of the village in understanding the meaning of quality education so that they could themselves learn as well as teach their younger siblings and other children in their village.

What are Shiksha Protsahan Kendras?

In order to assist the children studying in government primary schools, Eklavya, together with the community, established fifty *Shiksha Protsahan Kendras* in thirty four villages, a centre from a house in the village or from a school. The centres in the school used to function for two hours before the school began. Around thirty children studying in the primary school of the village/locality registered. In these two hours, the children were trained to sharpen their skills of listening, speaking, reading and writing in language and understanding numbers, addition, subtraction, multiplication and division in mathematics.

Selection of the centre operator

Some of the community members took responsibility for the proper functioning of the fifty *Shiksha Protsahan Kendras* with seven members in each committee. Then the committee and the parents together selected the centre operators. The committee received the names of the educated youth of the village and the members discussed the matter. The centre operators were selected on the basis of their behaviour, his/her

educational qualifications and ability to work with children etc. After being selected, the operator would be told about their responsibilities, salary and participation in the monthly seminar training. Parent meetings were organised every month. It was the responsibility of the committee to review the achievements and problems of the centre and the work done.

Training

Eklavya organised a month's training programme for centre operators in Tamia. They were trained in reading literature on education and have discussions on it, referring to NCERT books for basic competencies in language and mathematics, learning to plan their work, participating in play way methods of teaching and maintaining a teaching diary.

Meetings were held in school every Saturday. Some of the issues discussed in the meeting were: reading out the details of the work done during the previous week and reading educational articles. The teachers of the school also participated in the meeting and shared their experiences. The plan for next week was put in place. Hands-on activities were taken up by the participants with the help of the teachers.

Method of teaching

The centre operator would make plans with the children in mind. S/he would decide on the concept that had to be developed and its aim, what activity/play would be suitable for it, what kind of exercises should follow this and other related matters.. They would keep an eye on what the children did, what they learnt and then enter the date in the continuous assessment sheet. Even their mistakes were entered in the assessment register and the next day they would be all set to help the child learn that concept by spending time with her and carrying out related activities.

All the 20-25 children from grades one to five were made to sit together and the first hour was allotted for language and the second for mathematics. Sometimes mathematics was taught for two

hours and the next day was dedicated to teaching language. In this way, efforts were made to help children become proficient in the basic skills of language and mathematics.

In order to make the children proficient in basic competencies, the book entitled *Padho-Likho Maja Karo* published by Eklavya was used for language while an NCERT book was used for mathematics.

Examples of activities

It was decided that initially, in language skill development, five easy and familiar words from their own environment would be taken per week. The words could be, for example- *cup* (cup), *bus* (bus), *nal* (tap), *mala* (necklace), *ek* (one). They would be introduced to these words, the sound of words and new words would be made from them. After this, all the children would sit in a circle and a story containing these words would be told in the first ten minutes. Later on, the story would be written on the board and read. Then the children of different levels would be made to sit in small groups and, depending on the level of reading ability they were in, would be asked to recognise the sounds of the words from the story and asked to make words by combining alphabets and *matras*. All this was through activities, play way methods and using various teaching materials so that children could recognise, read, write and identify the sounds of words.

Who came and who went is another game in which any three word cards is shown to all the children. A child goes out of the room and one of the three cards shown is replaced by a new card. For example *bus* is replaced with *ek*. The child who went out comes in and tries to find the new replaced card. Then he tells the class that *bus* has 'gone' from here and *ek* has 'come'.

Next, the words shown on picture cards are formed by combining the letters and *matra* cards. For example, the word *cup* would be read aloud. The rest of the children have to clap as many times as the letters in that word. For example, *cup* is made up of two letters in Hindi, so they would clap twice.

All the words are taken up one by one and children would clap according to the number of letters in that word. In the next activity, the children are asked to identify the last letter in the word *cup* is *pa* (in Hindi) and say other words beginning with that letter, They had to make words beginning with the sound, such as *pani* (water) or *patang* (kite). This could be extended to letters and *matras* in

the names of their classmates, creating new words with them and reading them aloud. Children who can read the words and recognise sounds are then given the chance to write short sentences and speak about those pictures, going on to the next stage of writing about the characters and incidents in a story. After the activity, the centre operators check the work done by the children and make a note in the continuous assessment register if the child has had difficulty in understanding something has not understood something. The next activity is planned with the idea of helping the child in that particular area.

Mathematics

Understanding of quantity and practice of addition-subtraction of solid items

In order to grasp the concept of quantity, children are made to sit in a big circle and count a hundred beads. The children come one by one and count. Small children count by ones while the older ones count by twos, fives and tens. They learn a lot through this activity.

A child is given fifty beads. Then she is sent out and some beads are taken away and hidden in a bowl. The child is called back and she counts the beads that are outside the bowl and tells the number of beads that are inside the bowl.

The understanding of place value, units, tens and hundreds is developed with the help of bundles of sticks. The bundles are placed before children and they are asked to give a certain number of sticks from those bundles. Suppose we ask them to give us forty five sticks, then the team will give four bundles and five sticks. Then the numbers are formed by using the place value card and written on the board. Then they are asked to identify greater and smaller numbers between the two given numbers. They are also asked to give reason for why it is big or small.

Other activities

From time to time, children would work on Children's Assembly, Children's Paper and paintings to be put in their files. Based on all these documents and activities, the teacher would decide which competencies the child has achieved in the entire year. Keeping this in mind, a report card is made once a year for the information of the teachers and parents of the primary classes.

Each centre was provided with enough literature on education, keeping in mind the need of children.

There were word cards, *matra* cards, sentence cards, poem posters, story posters, sentences / word strips from poems and stories, pictures made by children, compilation of local events, children's books, compilation of stories narrated by children, local games, collection of riddles, folk literature, *Padho-Likho Maja Karo* and *Khushi-Khushi* published by Eklavya and others.

Abacuses, number cards, place value cards, NCERT books, *Khushi-Khushi*, solid objects like pebbles, match sticks etc. were made available at the centre to teach mathematics and to understand the concept of quantity.

Library

To develop a culture of reading and writing in the village, a library was started in every centre and about two hundred books were given to each. Children took home books from the centre, read them and give them to all the elders and siblings at home to read. In this way the children were also encouraged to have a library of their own at home. Eklavya library books were taken to the village. Each parent came there with their children and chose three books. Thus they were helped to build a library in their homes.

The centre operators read stories to the children from the books kept at the centre. The children were helped to read from the books and teach others to read, talk about the pictures and write incidents of the stories and once even presented stories through a puppet show. The paintings and the stories written by the children were put up on the wall so that they could see pictures, read stories and events. Once in a month, a newspaper would be created by means of collecting children's stories, pictures and incidents. Children also listened to local stories parents narrated and the local context helped children learn to read.

Collecting information about local flora

Children were asked to write the names and uses of plants and trees that grow around them and the articles were read out to parents in the monthly parents' meeting. The children wrote very well about the medicinal value of the trees and plants. This gave them an opportunity to get acquainted with nature and understand the uses of trees and plants. The parents also shared their knowledge and added value to the articles. Subsequently, these articles were published in *Chakmak*, a magazine published by Eklavya, and a copy of the magazine was gifted to the children whose articles

were published.

Exposure visits

Every now and then, three parents and three children of grades 3 to 5 from each centre were taken for exposure visits to observe local industries, police stations, thermal power plants, railway stations, science centres, museums, printing press, parks, gyms, water filter plants. They also learned about local law, old local traditions and methods of electricity generation. Such visits provided an opportunity for the children to learn about things around them. The children wrote about their experiences in exposure visits.

Organising *Bal Mela*

Bal Melas were organised to demonstrate children's learning throughout the year. *Bal Mela* activities included quizzes, clay toy displays, and exhibitions of children's story-writing, painting and art. Outdoor games such as chair race, kho-kho, kabaddi etc. were organised, giving the children an opportunity to showcase their talents.

Demonstration of proficiency in mathematics

A local market was set up in the *Bal Mela*. Children 'sold' items which people 'bought' with pretend money. During the sale, children managed the shop and did money transactions.

Children and parents measured their heights and weights and calculated their body mass index. They found out who was overweight, underweight and low weight.

Community involvement

A meeting was organised with the community one evening every month. The parents, public representatives, centre operators and children attended the meeting. Parents saw the work done by their children and familiarised themselves with what they had learnt and how regular they were in attending the activities of the centre. They were informed of the names of the children with less than fifty percent attendance and efforts were made to ensure regularity by getting the co-operation of the other parents and children.

Relationship with the school

Every week a meeting of the centre operators was organised in different primary schools. Government school teachers also attended the meeting. The centre operators shared their weekly work report with everyone. The planning for the next week was also done. A mathematics paper was solved. A few

pages of one of the education related literature were read and discussed. The teachers also shared their experiences with all since they were also involved. D El Ed and B El Ed students visited these centres from time to time and were delighted to see the very principles they were studying being implemented.

Some educational institutions also came for exposure visits and they too appreciated this kind of effort and learned from it.

Parents' visits

Parents of children in centres which were not working properly were taken to centres that were functioning well so that they could see the work that was being done with the children, the participation of parents, the attendance of children, the decoration of the classroom, the learning levels and their portfolios. When they went back to the centre in their village, they tried to improve it. The centre operator was also asked to discharge his/her responsibility sincerely. To ensure active participation of the parents, they would also be taken on exposure visit of different institutions.

Looking at achievements

Baseline, midline and end line tests were conducted in the beginning, middle and end of the programme to document the changes that had taken place in the children of government schools because of the *Shiksha Protsahan Kendras*. The students of grade 3 were asked to solve a question paper in language and mathematics of grade 1 level and the changes at grade 3 level were observed.

Fifty centres were established in thirty five primary schools in Tamia and in three years about eighty five young people were trained and were able to develop an understanding of quality education in Tamia Development Block. The teachers of government schools also took the help of these youths to teach the children of their schools and they in turn helped them in learning many skills. Hence the village had a set of good resource persons who could help the children of their village, had an understanding of quality education and worked towards connecting the children with the mainstream by giving good education to the children of their families and localities.

Games Children Play: Memories of a Himalayan village

Nimrat Khandpur



This article records my observations of the games children played in a village called Gnathang in Sikkim, which used to be the last stop for traders on the Silk Route before they entered Bhutan. Although of late, people have moved out of the village and tourists have made inroads, life in Gnathang is tough. Situated at a height of 13800 feet above sea level, the weather in Gnathang is intimidating, with mostly snow and rains and just a few months of sunshine thrown in. Sometimes, snow and landslides seal the village off from the outer world; at other times, there were a few days of sunshine to break the monotony. A middle school existed in Gnathang, when I was there—it is no longer functional, given the migration of people to cities.

Although a few homes in the village had television sets, thanks to the infrequent supply of electricity and the inclement weather compromising the use of the dish, children in the village were quite independent of television-watching. But the radio kept them abreast of Hindi film songs. On one of my frequent walks, I stopped to admire the view in a valley when I spotted a line of women and children making their way up a slope with firewood in baskets on their backs. I could hear them singing, and although I could not make out the words, it seemed hauntingly beautiful, wafting up over the trees. When they came closer, I realised that they were singing the popular Hindi film song, *Pardesi, pardesi, jaana nahin, mujhe chod ke....* (Stranger, do not go away leaving me behind)

On a sunny Sunday, an impromptu tambola session was usually organised for the elders in one of the lanes in the village. People would squat on the sunny side of the lane where the snow had melted, on roofs or on one of the yak skins laid out to dry. Even grown-ups would sit in the sun and play cards. If the sun was hidden by mist or clouds, or there was nothing else to do, they would meet in the one or two shops licensed to sell alcohol. With almost everyone related to everyone else, gossip was aplenty, as is generally the case with adults.

But for children, gossip did not hold the fascination

it did for adults, and their participation in tambola was restricted to finding vantage points and joining in the shouting and general excitement. Sports, like a synthesis of rugby and football, played on the school grounds were restricted to fair weather, which is just a few months in the year. Cards are closer to their hearts—I carry this picture in my mind of tiny, straight-backs in a circle, self-consciously holding cards carefully arranged like fans in their small hands, pretending very seriously to play.

Of course, the children in Gnathang are as imaginative in inventing games as children elsewhere—the difference is that their games are virtually seasonal. In my opinion, their creative skills are at their best when it snows. There is almost an element of genius in the simplicity, yet versatility, of their inventions. During deep winter with its heavy snow, these children created workable, efficient skis and sledges from discarded stuff. They fashioned skis out of a piece of slightly curved rubber sliced into half lengthways, with wooden sticks for poles. Their sledges were the sides of old crates, with wooden blocks nailed along the sides. They used their hands for steering these sledges, with the result that their mothers often complained about the number of gloves they ran through in one winter! But it was a sight to see them rushing down the frozen snow over roads and slopes, red in the face, eyes streaming, screaming with excitement.

There was something very interesting that I learned to do with snow from them. If you ever find yourself standing at the head of a gentle slope covered with snow, make a tiny ball of snow and roll it gently down the slope. You will see that it keeps gathering more snow as it rolls down, leaving a very intriguing track, which could pass off as a baby yeti's footprints! And when a group of children does this simultaneously, the result is extremely striking.

When the thaw set in, families that run out of their stock of firewood would send their children to collect juniper branches. This was a major expedition—friends formed gangs, younger brothers and sisters tagged along and a couple of

older women accompanied them for supervision. The children had kid-sized baskets, identical to the ones used by their elders, hanging from their backs, with knives and axes, again identical to the ones used by their elders, pushed dramatically into their belts or the cloth tied around their waists. There was much singing and fooling around, with a great deal of shouting between groups.

Then the rains would come, and the children would be left pretty much to themselves. They would go down to the Army establishment in the valley below the village, where the home-sick soldiers, missing their children, would pamper them. They would swagger up-hill and down-hill, sticks in hand, snipping off the heads of innumerable flowers growing wild across the slopes. A favourite game was to make their way to the stream that cut across the valley to try and catch fish with makeshift fishing rods. Although they were rarely successful, their efforts were rewarded by the tasty treat the wild strawberries growing in abundance around the banks provided.

Of course, there was room for make-believe in the repertoire of their games and they tended to imitate the most interesting adults around, in their case the soldiers of whichever Army unit was posted in the valley. Any celebration in the unit premises was closely watched by groups of children perched conveniently on high ground. Most of them said they would join the Army when they grew up. Whatever they did eventually, at that point in time, the children were fascinated by these adults. I saw evidence of it one day, as I was making my way up a steep slope. I came across a procession of near-toddlers 'marching' efficiently out-of-step in a crooked line, led by a teenaged boy holding a stick in hand, presumably to scare some of the over-enthusiastic make-believe soldiers. The leader whispered something to them as they came close to me. As they passed, I received a toothy-grinned namaste accompanied by a salute consisting of tiny, grubby hands raised awkwardly to their foreheads, even as their arms strained against the constraint of the layers of sweaters and coats they wore.

Like everywhere else, the days of celebration in the village were days of excitement for the children. One was Lossar, the Tibetan New Year, which

meant a lot of fun and lots of eats for the children, both Tibetan and Nepalese. Another was Buddha Purnima, which held a lot of appeal for them since some of the adults dressed in colourful robes, wigs and masks, and led a procession to a village two valleys away. Similarly, on Tibet Day, Tibetan adults in traditional costume and all the children gathered at the tiny Gompa, or temple, where a few speeches were made, followed by a procession winding through the village, carrying a picture of the Dalai Lama and banners brought out of the storage for the day, shouting slogans till it found its way back to the Gompa.

Weddings were a source of great enjoyment, with the entire village invited to partake of the feast prepared by cooks especially brought in from Gangtok or Kalimpong to make special dishes like the geika, full of meat-balls and noodles. On these occasions, it almost seemed like the children were holding a mini celebration of their own, within the larger celebration.

The children of Gnathang were my friends and it thrills me that I helped them learn new games. Before the snows came in during my last winter in Gnathang, it was so windy that going for a walk became a perpetual struggle with the wind chill factor accompanying the already low temperatures. So, I picked up a couple of golf clubs and a pack of balls and started swinging balls onto the tin roof of an empty hut. Soon I had gathered a small audience of children quietly watching me. Used to the children occasionally eyeing me with curiosity, I ignored their interest till one day I came across a couple of boys swinging a slightly curved stick and successfully sending a ball up into the air in a graceful arc.

But a form of quasi-golf was not my only contribution to the repertoire of Gnathang's games. Once the snows settled, and I went out for a walk on a sunny day, I came across a group of red-nosed, bundled-up children varying in age from three to ten, working diligently at making a snow person. And, once again, as when it snows, the adults huddled close to the huge stoves in the centre of their living rooms. And the cycle of games began anew for the children!

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Summer Holidays as Informal Learning Experience

Prakash Chandra Gautam



‘That children’s learning begins long before they attend school is the starting point of this discussion. Any learning a child encounters in school always has a previous history. For example, children begin to study arithmetic in school, but long beforehand they have had some experience with quantity...’ LS Vygotsky, *Mind in Society*

Learning does not depend only on the challenging environment of the school: Vygotsky’s entire work supports the significance of social interactions in learning. As a system, the school provides many formal and informal spaces in which to interact. It has been observed that most alternative schools utilise informal spaces more than regular schools do and learnings from such opportunities have a value for life and is a part of an unendingly memorable childhood. As adults, we become habituated to train our brains to work at certain times and rest at certain times, ignoring our personal likes and dislikes and wait for a good time and opportunity to learn as a natural process. But for a child it is truly difficult to see learning in chunks of time and space. For them learning is a continuous process irrespective of time and other co-related factors.

Summer vacation as a space to settle down

Children have various pressures like completing tasks, projects, social and emotional adjustments, home assignments, classwork. Unfortunately, we have built our schools as places of preparation for ‘livelihoods’, instead of ‘life’ itself. Perspectives can be narrow: we often force our children to become doctors or engineers, or in some way get prepared for the hardships of life. Among all such self-created high expectations a child is the worst sufferer as she is typically made to live out her parents’ unfulfilled dreams.

This is when the leisure of the summer holidays is so important because children can find a break from such pressures and get an opportunity to have some time of their own through the vacation. Our frustrations and rigidity show up as comments on the grades and marks in their examination performance, usually held just before the summer

vacations. So, summer holidays can prove to be a welcome relief from a sometimes monotonous and tedious formal school system for children of all ages.

Vacation in the urban context

It is not a matter for comparison, but in urban setups we have spoilt, or reduced, informal learning opportunities. Fancy coaching centres, tuition classes, abacus maths, mind development, yoga, karate, etc have exploited the dreams of parents who are trapped in the system. They feel that their children’s learning should not be stopped during the vacation and so send them to various alternative classes. Unfortunately, our media and social world has also created an imaginary universe and put our children into a commercial world made attractive by marketing strategies like competitions, experts’ comments, championships etc.

Other contexts

The gift of unstructured and unorganised periods, when a child can recharge, is a rural wealth which is rarely experienced in metros. In rural settings, families may have their struggles, hardships and challenges, but they create a bond of love and respect for each other. In tribal villages people welcome their guests. They offer tea, water, food though they may not bother much about serving fancy and costly items beyond their monthly budget. They put their heart and soul in their hospitality. Children who spend their vacation among them also learn values like respect, social adjustment, interaction with persons. They understand the value of human interaction, meeting with each other, being together. Such connected social structures give people strength to struggle with the hardships of life. Family problems are seen as problems of that community.

In rural and semi-rural setups, diversity is another social wealth which further constitutes learning for life, giving a new dimension to their futures. Rainbow children, a term coined by Sister Cyril for children of deprived socio-economic backgrounds who have successfully integrated into mainstream

education, have shades and emotions which cannot be experienced among the homogenous socio-economic backgrounds of most of our schools. However, they understand differences of opinion, individual identities, get familiar with cultures, helping each-other, exposure to different languages and vocabularies. Summer vacation allows children the space to interact and spend time to learn these values in a non-organised, non-formal way.

Summer vacations - space for play

Despite limitations of context, children never miss enjoying their time with their friends. They get together, play together and act together. Children want to copy adults' world and for this they have

invented free play, they interact and create world of adults. They feel happier to enter in their domain through mime, role play, expressions etc. They liberate themselves from various structured rules and regulations, they taste power through playing different characters of society. They act and create dialogues of their own.

Overall, summer breaks are part of the informal learning space and will continue to be in existence in our country. Because summer holidays are during the hottest part of the year, they will remain as long break when children rightfully get to spend time on their own, in their own ways, making them valuable learning experiences.

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Escape From Childhood - the Needs and Rights of Children, John Holt

Conversations with children from Shankardah and Dondki villages, Chhattisgarh.

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T-LAB: Dream Yard for Happiness

Pramod Maithil



‘When students were asked whether they have ever been bored in class, 83 percent of NAIS students answered that they were bored sometimes (50 percent) or often (33 percent), compared with 86 percent of public-school students (36 percent) were bored sometimes; 50 percent were bored often.’ HSSSE Report 2016.ⁱ

This statement is just to bring out the issue that a significant number of students are disengaged in schools. I believe that the problem is not at the student’s end. In fact, research suggests that children behave like scientistsⁱⁱ. Piaget claimed that children ‘construct knowledge’ⁱⁱⁱ. Historically, schools are designed to keep children’s dreams, aspirations, interests out of the curriculum and the pace of learning and the background of the individual child are not taken into account.

Allow me to state the following:

1. Schools are not academically attractive places for children.
2. The fact is children do not enjoy the way their education is conducted.

In this article, I am making an attempt to respond to the above assertions with the wonderful insights and learning I have gained over the years and elaborate on the innovative pedagogy and insights that took shape from my experiences with children. The methodology evolved when I scaled down adult authority and let the children naturally learn and grow. I named it the *Natural Learning Model* (NLM).

In 2011, an innovative school named Anand Niketan Democratic School (ANDS) in Bhopal was started. After three successful years, the learning journey was documented in the book *School for My Child* (Penguin). Some innovative experiments in the pedagogy of language, science, mathematics and school assessment systems were discussed. Some of the incidents and arguments from the book have been chosen to make a case in this article. Also discussed is a space named T-LAB based on Natural Learning Model for schools.

The background of T-LAB

Our education process has been dominated largely by the linear method of science. To give an example, in the natural sciences, inanimate objects behave in the same way if the energy and method applied to them are the same. One can control most factors and objects do not have a say in the process. For example, if I wish to throw a ball to a spot, I can meticulously plan my strategy by calculating the distance, the force required and other factors and the ball would hit the spot. Just assume a bird in place of the ball. Many factors would be added which cannot be controlled, because the bird is a living being. We should not forget that in education we are dealing with children, who have their own minds and their own interests. The whole idea of pre-planned steps in a fixed sequence to achieve a uniform result cannot be applied to education. The planning must be of a different kind, keeping in mind that the child is an active agent and has a stake in whatever is happening in a learning process.

The Natural Learning Model (NLM)

Quality education in the real sense can be achieved if the agency of children is given a role in their education. We need to believe in children and accordingly improve the design of the school and the education system. We need to develop activities, materials, processes so that the diversity among children becomes an asset and adds value in the learning environment to let the children learn and grow according to their interests and pace in an environment of trust, responsibility and freedom.

Can we evolve a system for schools in which each child can have her way of doing things and learning at her pace and interest?

My Insights from these explorations led to a method I named **Natural Learning Model**. The symbol can be created just by placing uniform squares at different angles while keeping the same centre. A



perfect circle emerges in the middle. The focus was on the centre and squares and not on the formation of the circle.

In terms of education, *aspired learning objective* relates to the bigger circle which is a by-product, and which would emerge later. We only need to focus on the centre which is the *happiness of the child* and the squares are *different explorations in an aspired domain*. In a way this is an inverted strategy compared to the method in contemporary schools where we usually begin with learning objectives and set a curriculum. Then we have a syllabus and lesson plan but while teaching focus on our interests whether the child is learning or not.

How children learn

Language

Children have an unfathomable capacity to learn language. Take the example of any four-year-old child who learns her mother tongue. If her mother tongue is English, I do not think she would make any mistake in distinguishing between the sounds of the letters d and t. She is unlikely to say *tate* instead of *date*, or *dalk* instead of *talk*. No child would be able to explain how exactly she has twisted her tongue to pronounce these alphabets with the precise difference. This is self-learned and is true across languages. The child understands this complex system of sounds and how to reproduce them without being taught.

Children hear these sounds for most of their waking hours and use and play with them. In the early years after birth, it is only the affectionate responses of adults to their inchoate attempts that signal to them that they have successfully produced the correct sound.

So, what does this insight into learning tell us? It's simple. We should expose young children to language, giving them every possible opportunity to express themselves, and respond sensitively to their every attempt.

Curiosity encourages the urge to learn

One day, a six-year-old child stayed back after the story-telling session. She was curious to know something from her teacher. 'How is it when you tell a story from the book it's always the same, but when I tell the story from the same book it changes every time?' she asked. 'I read the printed text in the book, but you make up the story from the pictures,' responded the teacher. We observed soon after this the child was 'reading' a story. She learned to

read within a month. I suppose her conversation with the teacher had made her curious to know the mystery of the text, leading her to read.

Experiments with language

Children experiment with language in their attempt to learn. I would like to share some observations of their 'play and experiment' with language. I remember an experiment my daughter made when she was 4-5 years old. She had a ball and wanted to play catch with me. 'Papa, *main phenkungi aap kechna*,' she said (Papa, I'll throw, you catch). Her use of the word *kechna* took me by surprise. It was her creation, a mixture of the English catch, pronounced *kech* and the Hindi suffix *na*. As we speak Hindi at home, she was familiar with verbs like *doudna* (running), *koodna* (jumping), *khelna* (playing), *rona* (crying) and *nachna* (dancing). She figured out how and where to use *na* and constructed the new word by adding the suffix to the verb *kech*.

The school should encourage the urge to learn and create opportunities to experiment and make mistakes by ensuring both the environment and the resources to foster learning. In most schools, some teachers might label it a mistake and even punish her, forgetting mistakes are essential to the learning process.

A few pointers for the Natural Learning Model

Recognise the involvement of children in their own education.

Learning is a by-product of a child's efforts- learning to communicate, not speak a language, is the objective of a toddler.

Learning is not a linear process, so instead of isolated content, create a comprehensive environment.

Three elements of effective facilitation: belief in children, shifting from an authoritarian to a facilitator role, allowing mistakes.

T-LAB: Dream Yard for happiness

We created T-LAB to translate the NLM into practice, by making it attractive to children. We learned from eminent thinkers and philosophers to develop its unique design.



Gandhiji's concept of education was an all-round drawing out of the best in the child – body, mind and spirit. *Complete development* implies, therefore, the education involving 3H's- Hand, Heart and Head. The present education and school only entertain the *head*, with very little space in the system for the *hand*, while no one talks about children's *heart* engagement! I believe that quality education with the idea of the 3Hs would certainly mitigate a few other issues which stop children from receiving an education.

The same idea is reflected in Ivan Illich's famous quote as well: 'Most learning is not the result of instruction. It is rather the result of unhampered participation in a meaningful setting.'

What is T-LAB?

T-LAB is a space inside schools dedicated to children's creativity where children work on their ideas and questions at their pace and interest. T-LAB gives children the latitude to validate and recognise their natural creative activities. We ensure the children's ownership of the space by making them partners in developing it.

T-LAB is a hub of children's dream and ideas with a variety of resource materials and aspires to give space to children to learn and grow in an environment of trust, responsibility and freedom. It consists of different work stations and an ever-growing repository of materials. Skilled facilitators are available to suggest various dimensions of the project children are engaged in. They also help the children to improve the design and processes.

T-LAB Design

Here are some features of the T-LAB

T-LAB Currency

Children use the currency to buy material from the T-LAB and they sell their finished project/model back to T-LAB. This way, they earn a value for their efforts based on aesthetics, innovation and originality of their project.

T-LAB has a specially designed planning board on which children can show their projects, after discussing it in the group and the Ideas team. It has been observed that sharing with friends is the biggest source of motivation to work.

The T-LAB has organised sections to facilitate processes and divide resources according to the nature of work, such as the Electricity Lab, the Colour Lab, Chemical & Microscope Lab, etc.

T-LAB processes

The election process

Children are the authority in T-LAB activity with no external interference. Elections are conducted for the creation of three teams: the *Ideas* team which ensures that ideas mooted by the others translate into action. The second team, *Bank*, manages the currency transactions of the T-LAB. The third team, *Material*, organises the items in the T-LAB according to project need.

Effective facilitation

We spend a lot of time with the T-LAB facilitators to help them unlearn the authoritarian role of a teacher. They need to be around for children to discuss the ideas they are working on. The facilitators may influence their thinking process by asking questions and, if required, handhold to achieve a higher level of understanding.

Execution and outcomes

Each child decides her own list of things to do and her own way of doing things. T-LAB works on an individual and personalised syllabus and complements *instructional* academics from the school with the concept of *practical* academics. Successes and failures add to the gradual learning process and attaining different levels of competencies. We believe that Experiential Learning truly complements school learning. It enables achievement, generates important personal and social values, such as self-reliance,

creativity cooperation, critical thinking, problem solving, observing and questioning. It also provides plenty of opportunities to develop motor skills.

Conclusion

I would bring you back to the original issue and end the article with Ivan Illich argument from his book *De-schooling Society*:

‘The pupil is schooled to confuse teaching with learning, grade advancement with education, a diploma with competence, and fluency with the ability to say something new. His imagination is schooled to accept service in place of value. Medical treatment is mistaken for health care,

social work for the improvement of community life, police protection for safety, military poise for national security, the rat race for productive work.’

The present article is not merely a narrative of learning experiences. I question the assumption that we can fully understand the learning process at a cognitive level. Teaching is not possible, only learning happens. The learning journey may not trace the same trajectory for all children. But there is room to organise activities so learning happens with groups of children. I propose that we focus on activities with multifarious possibilities for open-ended and free exploration, such as the Natural Learning Model.

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Using Nature as A Teacher

Priti Rao



My story is rooted in small beginnings. Growing up like any normal girl in 80's, I loved every bit of Bangalore – the climate, the people and the culture. I always wanted to be an Air Force pilot. I came close to realising my dream but fell short by an inch. Having had to let go of my aspirations, I reluctantly pursued studies and managed to complete an MBA. Life took its turns. Although I had a good career, working for corporates left a void. There was something amiss. I quit working after my marriage, a move that gave me enough space for myself. The birth of my child gradually changed my perspectives and thinking. We lived abroad for a while and travelled. This experience, coupled with yoga, helped me in the understanding of myself and the world around. Then came the crucial turning point. We decided to move back to India. This was in 2007.

After coming back, perhaps the first thing I noticed was this Bangalore was not the Bangalore that I knew. The landscape had changed dramatically. With the rise of global demand for software and IT services, Bangalore had already established itself on the world map as the go-to-city for IT. Naturally, it attracted people from all over India and the world with the promise of a better life, but uncontrolled development and poor waste management had made it completely unrecognisable.

As I went deeper, I discovered many things. The tree cover had diminished. The temperature and rainfall pattern had shifted. Lakes were dry and polluted or encroached upon. Air quality was deteriorating. Consumerism was at an all-time high, waste management was appalling and civic sense falling apart. Bangalore was no different from any other city in India or a growing city in any other developing nation.

I started to think: Is this what we are leaving behind for future generations? Are our actions justified and sustainable? Can we reduce or reverse the damages at all? What could I do at my level as an individual? I turned inwards for answers. A more sustainable lifestyle? Would that not reduce the burden on nature? Was that not the way humans

lived on this planet for thousands of years?



We thought of giving it a try. With the help of my family, we soon started growing herbs and vegetables on our terrace, installed a bio-gas plant that converted wet waste into cooking gas and started composting and making manure. We also installed solar panels to generate electricity, harvested rainwater and discovered the use of bio-enzymes and stopped using chemical-based cleaners at home. With these simple practices, we not only reduced our dependency on the market but also our carbon footprint. The journey is continuous but fulfilling. Motivated by my own limited success, I wanted to see if I could help others lead a sustainable lifestyle. Thus, *Soil and Soul* was born!

Soil and Soul gave me a platform to express myself. Soon, I started engaging with communities and even corporates. Many eco-friendly products were born. Throughout my journey, I realised that adults



lack awareness and motivation when it came to sustainability. Convenience had overtaken the concern for our environment, whereas children's thinking was the exact opposite! Through my interactions with children, I found them more receptive to ideas with the ability of bringing major changes at home. But unfortunately, no school taught any of this as part of the curriculum or learning.

Realising that helping develop an earth-friendly mindset in our future generation is one of the most important tasks that we have at hand, I thought maybe I could help fill the gap in our education system. This resolve gave us at *Soil and Soul* an opportunity to develop an experiential learning module around waste management. We called it the *Zero Waste Campus Programme (ZWC)*. ZWC is a year-long programme meant for any educational institution, schools or a colleges that wishes to handle its own waste effectively. ZWC is designed in such a way that it involves all the stakeholders - students and staff members. The idea is to make everyone accountable and responsible for the waste they generate and manage that waste. Through this programme, we attempt to bring behavioural changes in terms of ownership to help in leading a sustainable lifestyle.

The programme is divided into four major modules: *Awareness, Audit, Management and Live, Hands-on projects and In-house projects*. First, we divide



the children into groups based on their age and work with them to create awareness about sustainability. For example – how to be an informed and responsible consumer? What is a typical product life cycle? How does waste get generated, where does it end up and what harm does it do? The *Awareness* module runs throughout the year.

Once the children understand the basics, we take up the *Audit* exercise. This identifies the amount of waste that the school generates and the disposal methods we could use. This helps us create a baseline for waste generation. We create a blueprint for managing the waste both inside and around the campus. Throughout the programme, children are made conscious about various ways to reduce and treat waste. The programme ends with an appreciation for the live-project curated by children. Typical examples are: creating a herb garden and setting up compost and enzyme making units, or setting up a small-scale handmade paper unit to recycle paper that schools generate.



We use a wide variety of teaching methods to create impactful learning. Audio and visual teaching aids help in capturing the imagination of children. A principle that is very useful is *gamification*. Driven by group activities, simulations, fun and games, this method ensures that the child is fully involved and learning. We also draw inspiration from yoga and nature. Practices, such as *sankalpa* (resolve), *yoga nidra*, hug-a-tree, etc help us reinforce the ideas and concepts. *Soil and Soul* documents the entire year's journey and we have observed many interesting behavioural changes, such as the following:

- children sharing homemade sweets / fresh fruits / dry fruits, instead of chocolates with their classmates on their birthdays
- children insisting that their parents avoid plastics as much as possible – e.g. carrying cloth shopping bags from home
- talking to shopkeepers and educating them on the adverse environmental impact of plastic bags

- shorter shopping lists: children showed alternative preferences
- acceptance of do-it-yourself methods instead of buying packaged goods – for example, children learned to make their own bio-cleaners instead of buying chemical-based cleaners
- improvement in overall personality through soft skills – active listening, group discussion, articulation, assertiveness, ownership, etc

The list above may appear to be small improvements, but in reality, they achieve the bigger purpose of making the child aware of his/her actions with respect to the environment.

These changes were not easy to bring about. We had to convince everyone at every stage of our programme. Having interacted with many schools including reputed international schools across various states, concepts like this are hard to sell.

To start with, most schools do not even think there is a need for environmental education which is not based just on textbooks but on experiential adaptation and real life. These mainstream schools rely on classroom teaching and focus mainly on academics. Management priorities, lack of awareness and commitment towards environmental education are deterrents to experiential education. There is, of course, another type of school where there is some acceptance of such learning, but they either do not have management buy-in or lack funds. Many government and some private schools fall into this category. *Soil and Soul* has always helped such schools by delivering free workshops, etc. The third category of schools is alternative schools where some initiatives are already in place. Both students and faculty are inclined towards experimenting and learning. Our chances of engaging with such schools are higher.

We have seen rural schools and children responding better to such programmes than their city counterparts. Many government schools run their own voluntary programmes to educate children on topics like environment, conservation and waste. For example, in Sikkim, children are taught this, and a greater awareness exists. In general, attitude of parents towards environmental education is changing, but they look up to the schools to provide basic education about it.

Things become easier if a school agrees to go with our programme. We sincerely believe that as

long as our intentions are honest, the results will speak for themselves. I often say children are like sponges, they have the capacity to absorb anything – it all depends on how effectively we communicate our ideas to them. In my opinion, they are the best change agents! A case in point is Greta Thunberg, a teenage climate change activist who has been making waves across Europe, the US and Australia. Along with thousands of children, she is forcing policy makers to act fast on global warming. India too needs to act before it is too late. We need our younger generation to question status-quo and contribute towards taking the country forward in terms of environmental stewardship.

When I look at waste management in India, I see many issues. First, the *my-waste-is-not-my-responsibility attitude*. This has to change. We are responsible for the waste that we generate. Today, our oceans are being dumped with insane amounts of plastic, our rivers, lakes and water bodies are polluted. Growing affluence is given rise to maddening consumerism resulting in creating unnecessary waste around us. Mountains, deserts, forests are also not being spared. Global climate change is a reality. Although it may not be practical for everyone to lead a carbon free lifestyle, waste and environment should be everyone's concern. We are sitting on a ticking time-bomb. Only awareness, time-bound and credible large-scale actions can save our country and the world.

Along with waste management, *Soil and Soul* has programmes focussing on food, energy and water too. The *Live* projects vary from institution to institution based on what they choose to do. For example, grow your food, transforming a school into renewable energy source or water management system, to name a few. We are open to their ideas and weave our programme according to the requirement. Every programme is definitely enriching their experiences and the learning is for their lives.

At *Soil and Soul*, instead of focusing on issues alone, we try to innovate simple solutions that can address everyday challenges. These products are completely natural, handmade and sustainable. Money earned through the sale of these products feeds our efforts of engaging with various communities across the nation to bring about a positive change in society.

Having worked on the education part, though I feel satisfied, I keep reminding myself of my bigger

responsibility, which is to reach out to as many children and communities as possible. My dream is to create a campus one day that enables children in

environmental leadership.

Who knows, that day may not be too far...!

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Learning to Accept Differences

Shefali Tripathi Mehta



Three decades ago, when the first two blind children from *Arushi*, a voluntary organisation working to empower people with disabilities, got admission into a (mainstream) school, the two of them stayed in class during the morning assembly and the games period. What will you do there? they were asked.

Beyond the definition of inclusive education that rightly focuses on access to school/education, which without a doubt is the greatest hurdle, there is a whole sociological ethos of how we perceive physical and mental disability. Popular films and literature romanticise the idea of sacrifice—the disabled hero intentionally plays villain to fall from the eyes of the love interest and make way for the ‘able-bodied’ other—when not using obesity, stammering, sleep-walking, over-eating, or slowness of speech or thinking as tropes for comedy. Therefore, getting children to school does not end their exclusion, rather, it may, in many ways, accentuate it for them.

When we talk of inclusion of children with disabilities we almost always see it from their perspective—how they feel and what they experience. But to effectively bridge this divide between them and the rest, we must consider what the children without disabilities believe and consider as the norm.

In these times of growing sensitivities acts that are rightly seen as discriminatory are actually just differentiators, if we did not consider our hidden biases. But while, ‘Who is that tall/attractive/long-haired/fair girl in your class?’ seem like qualifiers, ‘Are you inviting that short/fat/dark boy for your birthday?’ are downright offensive. This may be how we identify people, but unfortunately, this is true also for how we seem to allude to caste, class, religion and the hundreds of ways in which our society is fragmented. Our hidden biases reveal in our language and expression and children around us are subconsciously receiving and internalising the signals we send out verbally and non-verbally. They smell our prejudices and can see through our pretensions. These lead to bullying and ridiculing anyone who does not conform to the societal idea

of standard or its obsession with perfection of body and mind.

So, I spoke with a few children about what they think of children/people with disabilities. The first thing that I learned was that in the public schools that they attend, there are no children with disabilities; none at all. None of these children had ever come across any child with a disability and, while they were aware of Braille and sign language, they believed that by learning these, they would be able to ‘help’ others. They also thought that their schools did not have the facilities that should be there for children with disabilities. One 10-year-old said she would be awkward with a child with a disability, initially, but the awkwardness would go away once they become friends. One of them seemed worried that some children may ‘whisper rude things about them’. While they thought children with disabilities can do the same things that they do, perhaps a little differently, they, again and again, used the word *help*. There was no pity as such but compassion, nevertheless, in how they perceive disability.

I asked them if children with disabilities should go to a special school and a grade 5 girl did not take a minute before responding that they would ‘not learn a lot of things like us’ if they go to a special school. These kids do not lack awareness and acceptance. The little lack of understanding is due to their not having known any child or person with disability first-hand.

It is interesting how older people—school administrators, teachers, employers, government employees and people in general—however, seem to have more rigid opinions, evident from the difficulties people with disabilities face in public places and dealings. This ignorance comes from a deep-seated perception based on misinformation.

Going back to my example of the two blind boys in school, their inclusion happened in a very interesting way. They were both masters of chess and when their classmates began to play with them, it became clear to the non-disabled children that

these two could do more than they had imagined they could. Gradually, they discovered that these two could read and write (using Braille); and that they were not just good in studies but had a great sense of humour too. They became friends and it was only natural that the two boys who did not see were soon out on the play field with the rest and were involved in all the other school activities too. When we talk of inclusion of people with disabilities, we must talk not of what they cannot do, but what they can do, maybe (slightly or totally) differently. Secondly, this has to happen in a very natural, organic manner. Considering the fact that until just about a decade ago, children with disabilities did not go to the same schools as the rest but attended special schools or no schools, it is not inordinately late to embrace the change that has already been affected, albeit in small, scattered ways.

Arushi has adopted several innovative ways to promote inclusion, especially among children. They began with building the capacities of teachers in schools and taught them Braille and sign language along with the training in disability awareness and sensitisation so that these teachers would be able to include with facility, children with disabilities in their classrooms. To take this further, the organisation managed to have all school textbooks from grades 1 to 7 published by the Madhya Pradesh State Textbook Corporation include one page with information on various disabilities and ways in which students with disabilities can be a natural part of the school system.



Children from other schools learning sign language at Arushi

For several years now, *Arushi* has promoted a healthy mixing of children with and without disabilities outside the classroom, within the school system. So, while children from *Arushi* visit schools to meet their counterparts studying there, children from regular or mainstream schools are invited to interact with the children who come

to *Arushi* for their various therapies, school-readiness programme and to learn the use of Braille, computers and sign language, among other occupational therapies and mobility training.

A typical visit begins with a tour of the Centre. Students visit the classrooms and interact with children with disabilities like autism, cerebral palsy, blindness, low vision or deafness, to name a few. These children from various schools from across the city mingle with the children at *Arushi* and watch them read, write, sing, draw, do crafts, physical exercises and have fun. The last is important because children without disabilities assume that those with disabilities live difficult, sad and unfulfilled lives. When they see them laugh and share jokes, they really are surprised. They learn. They also see them move about and do their tasks independently. All the children play games and sing songs together. They also compete in quizzes between mixed groups.



Visiting students trying their hand at Braille

The visiting children watch how children with disabilities use Braille and sign language to learn and communicate. They listen to audiobooks and to blind children reading out, say, a Harry Potter from their Braille version! They are also introduced to some basic Braille and sign language. Very young children, those in primary grades, show immense interest to learn the basics and are able to pick these up very quickly. After they spend a few hours at *Arushi* when the visitors are asked if the children at *Arushi* are different from them, they say, yes but in only that while they themselves carry notebooks and pencils, a blind child carries a Braille slate and stylus to school.

A visibly moved school girl after listening to a blind student read out a story from a Braille storybook, said, 'I was so awestruck. These children who



A Braille storytelling session in progress

cannot see are so cheerful and happy. And we who can see, complain about little things like the TV not working.'

Since children from *Arushi* are, without exception, prepared for and admitted to mainstream schools, it is imperative that the environment they get there is welcoming and accepting and not alienating. If their classmates appreciate that they can read, write and communicate just like them, even as they may use different means, children with disabilities have a better chance of integration.

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A Book Corner in the Classroom

Shehnaz DK



When I joined a private school as a teacher, I really enjoyed teaching the children in my class. I always felt that the lessons I taught were understood very well by all the children because they were all scoring good marks in the examination. This may be because I was teaching in a private school where all the children came from well-educated families. After working there for a few years, I went on to join a school that was getting grants from the government and children came from many different kinds of backgrounds.

Within a short time, I realised that the children here either did not understand what I was teaching or were not preparing well for the exam. I even started giving them tests during the examinations and revised the whole course, but there was no improvement in the results. Some years passed by and I was still not able to find the reasons for their under-performance.

In due course, I understood the cause of the problem: I realised that the children did not know how to read even when they entered grade 5. This meant that they did not understand or remember what was being taught. I asked children with weak reading skills to read one page every day and make them read it in front of me the next day. But they would slow down while reading a new page. They were not able to give the meaning of the sentence they read.

I continued with the same strategy but did not realise that making them read a page was not helping the children because they felt that they were being forced to read, whereas if it were something interesting and humorous, then they would read it on their own without being told. At this point, I came to know that, at home, they only had their textbooks and no other reading material. At the library where I went to get books for the children, I was told that since young children tear books, they could not be given any books! So, I took some old books from my home and gave them to the children and found that the children enjoyed reading them as they had never read such books before. Those who did not know how to read also

started flipping and turning over the pages. That was when I got the idea of creating a library, or book corner, in the classroom.

The books that I took from the school library were old and were to be sold as waste and did not need to be returned. Magazines such as *Nandan*, *Champak* and *Bal hans* had short stories and they were the first few books of my class library. I kept these books in the classroom cupboard and gave the children the freedom to pick any book to read, the only condition being that they had to finish their classwork first and only read in their free time. Initially there were some hitches, but gradually the children started reading them in the classroom in an organised manner. The number of books kept in the library started decreasing, which meant that the children were taking them home to read.

Now I realised I needed to observe which child was reading, whose interest was increasing and what the children with weak reading skills were doing. Books had been kept in the classroom for two to three months now, yet the children with weak reading skills were only looking at the pictures. When these children began to recognise and read words, I was encouraged to see that things were moving in the desired direction and I was right in thinking that if children get something interesting and new to read then they can overcome exam anxiety and enjoy reading.

The children were given a lot of freedom to read in the classroom throughout the year and they began to read better with the help of their classmates. When their reading speed improved a little, a Cloze test was conducted for the entire class to check their understanding. They were also given a maths paper with statement sums. Both the tests were planned to find out whether they were able to read with understanding and whether children could answer the questions based on that understanding. The results of these two tests were very positive, so it was clear that the children who had been unable to read with the help of their textbooks for four or five years had been successful in learning to read by their own efforts by reading books of their

choice. It was also clear that what they read they understood.

Because of the success of this experiment, a Book Corner has been created in all the classes of the school. Class teachers select the books according to the level of class and students' interests and get them issued from the library and keep them in their class, so that the children can use them when they get free time. These books are changed from time to time so that the children get a chance to read different types of books and get the opportunity to learn more. Children, gradually, started using the library for various programmes and competitions. This increased their interest in books and its impact began to show on their exam results.

After a few years I went to a government school to teach. where again children from grades 5 to 8 had very poor reading skills. There also I continued to help children to read books by talking to the librarian, dealing with problems and making books available to the children according to their level.

The idea of the reading corner is to help children to learn about the world and expand their knowledge outside textbooks and classrooms. Reading other books makes them realise that they can use this skill whenever they want to understand the world around them.

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Stepping Outside the Classroom: An Opportunity for Rich Learning

Saurav Shome and Archana Dwivedi



The real world exists outside the four walls of the classrooms. Despite knowing this fact, both schools as well as larger education system seem to constrain themselves by imprisoning the enterprise of educating children within the boundary of four walls. If the purpose of education is to prepare students for their future, then how can education remain captured within the four walls of the classroom (*Dewey, 1916*)? A liberating education must be authentic and relevant to the students' lives. It should value students' knowledge, place both teachers and students as co-learners in a context of problem posing pedagogy (*Freire, 1968*).

Taking students outside the classroom is often considered to be an additional activity or an extravagance for teachers or students or both. Additionally, instead of taking the centre stage in knowledge construction, these are treated as inert extensions of content taught in the classroom. The lacunae created by such an approach is evident in the teaching of many subjects. Learning Without Burden (*Gol, 1992*) categorically mentioned the alienating nature of India's classroom culture. The most recent Curriculum Framework 2005 (*NCF 2005*) recommends connecting the classroom to the outside world. It has suggested the inclusion of project work, survey, observation, data collection, thematic teaching, group work, different forms of assessment including self- and peer assessment as a part of regular pedagogy.

Although in the post-NCF 2005 scenario there has been an increase in the frequency of assigning projects in the school curriculum (*Shome & Natarajan, 2013*), there is a need to develop projects as meaningful learning experience for students (*Shome, 2013*) and intersperse this with other proposals in the project work (*Shome & Natarajan, 2013*). Taking students outside the classroom and integrating thematic teaching provides a rich context for learning.

In this article, we will present a narrative of some of the select teaching episodes of some topics in the subjects of Science and environmental studies carried out with the students of grade 3 to 7. We

will present the topics as a unit of narration. Under each unit, we will provide a brief outline of the motivation, the grade and the number of students, the way the topic is introduced, the teaching sequence, the nature of students' engagement in the work and learning from this exercise and the insights we gained for the future.

Waste collection and segregation

The core of waste management is collecting and segregating waste, which can be done in multiple ways: based on its use, source or origin, nature of degradation, materials, specific objects etc. The activity of waste collection and segregation at school level can be a true learning experience for students in several ways.

Through waste collection, students come into direct contact with waste, witness the severity of waste (e.g. plastic packets mixed with degraded vegetables), acknowledge the amount of waste produced by own actions, etc. These experiences can be triggers for students to take environmentally responsible decisions as they find themselves directly responsible for waste production. Similarly, segregation of waste leads to several learning opportunities such as the ability to classify a given mixture of materials based on their properties and future use.

In this activity, we had asked the students of grades 3 and 4 to clean the school playground by picking up waste and piling it up in one place. After a group discussion, students proposed segregation of material categorised as parts of plants, stone and soil, plastic-polythene, and metallic substances. The students then found ways of recycling all waste except plastic and polythene.

Teaching about plants and surroundings

A lesson on Trees in the grade 1 English textbook created an opportunity of integrating knowledge from students' environment. Students were familiar with trees as a part of their surroundings. When the lesson was taught and discussed in the classroom, it was realised that learning would be better if the students are taken from the classroom

and provided first-hand experience.

One way of introducing the parts of plants would be to draw and label them as given in the textbook. However, this is not a true representation of a tree. We gave authentic experiences to the students by taking them out and giving them the opportunity to understand, observe, and explore trees, noting the green leaves and branches. This led to personal observations on the differences between the textbook presentation and the actual experience. They further discovered that a tree had a hollow on the trunk and guessed that some animals would live inside it. One of the students exclaimed that an ant was climbing on the tree, while another student pointed out that it was not *climbing* but *crawling*, words which had been taught just then. They observed flowers at the bottom of the tree and that the roots were visible from the topsoil. It is not necessary that root will always be inside soil and out of our sight! Similarly, they noted a bird's nest in the tree. They were excited to find the similarities between class discussions and reality.

The responses from the students indicate that taking them out helped nurture their sense of appreciation towards nature and its diversity, especially the structure and essence of trees. The children were asked questions on their observations and they enthusiastically replied to the questions including those who were quiet in the class before going on the trip.

Study of vermicomposting

The study of vermicomposting is a part of understanding recycling. It is also included in the NCERT textbooks of grades 3 and 4. Students knew that the school maintains a vermicomposting pit, but they were unaware of the mechanism and the role of the earthworm in this process. Once the Hindi term *kechua khad* was introduced, the students replied that earthworms create compost. In the beginning, students knew very little about the earthworm, either its appearance, its use or its habitat. To provide better clarity about the role of the earthworm in vermicomposting we carried out an activity outside the classroom. First, students were given a one-page article on vermicomposting in Hindi and in English. When asked 'where will we find the earthworm?' all of them replied 'in the soil'. They were asked to form groups of four or five. Then each group was given a transparent plastic box and asked to collect soil from the field

removing big stones and pebbles. Interestingly, we did not find earthworms in the soil and therefore had to collect them from the vermicompost heap. Students observed the earthworms placed on the sack, first with the naked eye and later with a hand lens. Students reported that earthworms do not have eyes, ears, hands, and feet. They noted how an earthworm stretches its body while in locomotion. They concluded that the earthworm's body dried up when kept in a dry place or under the sun.

After the observation, the earthworms were weighed and kept in the boxes given to them at the start. The boxes were filled with grass and weeds and the students were asked to add more grass and banana peels regularly.

The activity continued for two months. Once the material from the boxes was removed, there were multiple earthworms and decayed material in the box. This observation gave us an opportunity to talk about how earthworms help reduce the material and play an environment-friendly role.

Water project

Two chapters of the EVS textbook of grades 3 and 4 were integrated as they had the common theme of water. We had prepared a worksheet based on the survey questions given in the chapters on water audit, use of water, estimation of volume of water, proposals to reduce water use and wastage, suggesting measures to preserve water and how we can reduce water wastage in school and at home.

Students filled the worksheets given to them on conducting audit, survey (eg number of taps, leaking taps) and carried out measurements (eg number of spoonfuls of water required to fill a mug). They questioned relevant people for instance those who looked after the toilets. We found that students who were disinterested and reluctant in classroom activities participated actively in this task and completed the worksheet.

Learning about biodiversity

Teaching and learning about biodiversity, most importantly, the sensitivity and appreciation of biodiversity can be generated only by contact with nature. Keeping this in mind, we have integrated stepping outside the classroom as an integral part of consolidating learning in the classroom. Here we will present how we have introduced following topics to our students.

Bird watching

As this is part of the NCERT textbooks of grades 3 and 4, students were provided bird cards and asked to spot the birds in the school. Students were also asked to observe nests of different birds and their eggs found in the surroundings and make reports based on observation. Later, students made birds' nests and eggs based on their observations.

Surveying plants

While teaching about different kinds of plants and parts of plants, we carried out a project-based learning pedagogy with the students of grade 6. Students surveyed the school compound and carried out a species count as well as population count for different species of plants, measured their length, estimated strength, noted structure of plants and parts of plants, presence of flower, fruits, seeds, classified different plants (e.g. herbs, shrubs, tree, monocot, dicot etc.) as well as different parts of plants (e.g. based on leaf venation and margin). We also collected a large number of plant samples, discovered the relationship between leaf venation, root pattern, and type of cotyledon etc. With a similar intention, a short activity was conducted with students of grade 5 on exploring different parts of the plants and classifying them.

Observing fungi

While introducing different organism in the science class of grade 7, students were taken out to the grounds to spot different types of fungi. Five kinds were discovered. They were guided to observe the visible structure of the fungi.

Surveying Insects

Knowing about insects is crucial in developing environmental awareness as insects occupy a crucial role in the food chain and maintain balance in the eco-system in multiple ways, such as pollination. Students identified different types of insects found in the school campus and the number of insects of each type observed in the different locations of the

school.

Identifying and removing invasive species

Uncontrolled growth of invasive species is a major environmental problem for human beings. It is important to gain knowledge about identifying invasive species and develop awareness about their actions to mitigate their spread. Students of grades 5 to 8 were taken to the ground and asked to uproot three invasive kinds of plants in the school ground and asked to segregate the plants. Students pointed out the dominant species existing in abundance. We also discussed that these plants are not eaten by cattle and talked about features of the plants which allow them to dominate other plants.

Learning and the way forward

We have observed that taking students out of the classroom provides a rich context for learning. Students take interest in the process and learn in the process. The NCERT textbooks as well as NCF 2005 asks for such methods to be adopted in the classroom. The textbook representation of the content about the world does not directly correspond to the real world. Taking students outside the classroom gives them a real sense, situates them in a real context and helps to facilitate their learning. Students could relate their observation with textbook content and get more detailed knowledge.

We realise that to carry out such work it is important to prepare well-thought-out teaching plans, integrating different content and skills with either printed worksheets or written data collection formats. Flexible school timetables and long duration class periods of one hour or more, with elements of writing and data collection, tabulation, and analysis are important. We have also found that it is important to bridge the connection between processes inside and outside the classroom as supporting each other rather than as isolated experiences.

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Beyond Four Walls: An Example of Project-Based Learning

Shubhra Mishra, Dinesh Bartwal,
Narender Kothiyal and Virendra Negi



The National Curriculum Framework 2005, more popularly known as the NCF 2005 (NCERT, 2005) endorses a constructivist approach towards teaching and learning. The document suggests conducting projects which follow thematic and subject-integrated teaching. Though there has been an increase in project practices in the post-NCF 2005 scenario, it still remains only a half-hearted implementation of the proposal. Other papers (Shome, 2013). Shome and Natarajan (2013) have proposed a model of project-based teaching in response to the proposals made by NCF 2005.

Project-based teaching includes real world contexts, authentic problems, authentic assessments, group work by students and a culmination of students' work in a tangible form, preferably in front of an external audience (Thomas, 2000). Interestingly, recognising systemic issues NCF 2005 asks for making the school timetable flexible and responsive to students' learning needs, scope for co-teaching and collaboration among teachers of the same, or even different, subjects and whole school support in the process (NCERT, 2005).

Keeping in mind the policy directives and looking for ensuring deep learning among students, during the academic year 2018-19 we planned and executed thematic projects with students from grades 3 to 8. The projects followed several elements of project-based teaching proposed by Shome and Natarajan (2013) and Thomas (2000). These include working with problems of the real world, with real world data and content, learning core concepts of the syllabus while carrying out projects, opportunity of group work among students, whole-class projects, authentic assessments, integration of subjects, bringing in components of investigation and problem-solving, collaboration among teachers of different subjects, daily planning of teaching units, flexible timetables and extended classroom period timings. The scheme includes tangible outcomes in the form of models, presentation, experimental designs etc prepared by students. All this was to be displayed in front of an external audience at school

in a *Baal Shodh Mela*. In this article, we will present our engagements with the students of grades 5 and 7.

Making of a school model

With twenty seven students of grade 5 we integrated three chapters of the NCERT mathematics textbook, namely, maps, solid objects and projections, area and perimeter. The idea was derived from a project-based teaching unit developed by Shome, Shastri, Khunyakari, and Natarajan (2011). Their work elaborates grade 6 students' engagement of drawing, designing and making scaled play item models for a children's park proposed on a ground of a given dimension.

In the first session, we had a discussion on sketches and maps with examples. Students were briefed on their tasks, asked to make a sketch of the school compound, including classrooms and construct a scaled model of the school compound.

Groups of two students each were formed. Each group surveyed the school compound, went to different locations and worked on making the sketch of the school. On the first day, only four groups could do the task, but on the second day, students repeated the work and nearly ten groups completed the task. The groups which were unable to complete were merged with the groups which had completed their task and so could help them to finish their pending work.

After that, groups of four students each were made and each group measured the dimension of classrooms, verandas, open space, pavements,

connecting roads etc. The scale was negotiated, finally assuming that 1 ft = 1 cm.

After the area was measured, a discussion on calculating area and perimeter based on textbook content followed. Students calculated the area and perimeter of the classrooms they had measured. Based on the dimensions recorded, students made a scaled model of the classroom building, including the windows and doors of the room, as well as veranda and garden area.

During the entire process, students worked in groups outside the classroom, helping and motivating each other and giving contextual answers to the questions in the textbook. The result was that when the model was completed, the students were very happy.

In this experiment, students learned how to make sketches, measure the area and perimeter of rectangular surfaces, creating 2D and 3D shapes, helping each other and presenting their work to a larger group and an external audience.

To facilitate the process, there had to be several steps in classroom management. For example: grouping the students to ensure mixed ability groups, dynamic classroom structuring including sitting arrangements, scheduling of class time and changing the timetable as required and extending the duration of the period from forty five minutes to five hours. It also meant that teachers and students had to arrange the required materials.

Initially, it was difficult for the students to comprehend the idea of making sketches with the right orientation and direction and then modelling the classrooms which had more than four sides with walls that were not at right angles to each other. It was difficult for the teacher to engage students who had finished their work earlier than the others. On the other hand, some of the students took longer than the given time.

The project was mainly conceptualised and carried out by the second author of this article. However, other colleagues also helped in the process. At the later stage, one of the groups was guided by another colleague.

Water audit

For grade 7, we chose the theme of water as it was included in the geography and science NCERT textbooks. The teaching unit was planned to

integrate chapters from mathematics - fractions, area, perimeter, volume, percentage, graph plotting and cross-section of solid objects - while carrying out the project. The project included elements from both inside and outside the classroom.

Discussion in the classroom started with the use of water in our lives and listing areas of use. Students surveyed the newspaper and listed out water related issues. Then they recorded the use of water in school and measured the amount of water utilised in each category.

Now, eight groups of three members each were formed and each of the groups was asked to measure water use under six heads. Table 1 shows the amount of water calculated by students under each head.

Group number	Area of water usage	Amount of water used in litres per day
Group 1	Mid-day meal	115
Group 2	Watering of plants	1192
Group 3	Drinking water	70
Group 4	Water used in the toilet	776
Group 5	School cleaning	304
Group 6, 7, 8	Usage in other areas	5

Table 1

In the following sections we will give brief accounts of strategies followed by students in calculating water consumption and usage.

(Water was measured and calculated with a one litre mug).

Midday meal

Students went to the kitchen and recorded different areas of water usage in cooking the mid-day meal and measured the water usage in the following areas:

washing *dal* (4 l), rice (7 l), and vegetables (6 l)

boiling the *dal* and vegetables (13 l) and rice (25 l)

washing utensils (60 l)

washing plates (550 l)

To calculate water consumption for washing plates, the group selected four students of each class and asked them to wash the plates in the same basin. Then they calculated the volume of the water collected in the basin to arrive at the total water consumption by 140 members.

Watering the plants

Students surveyed the amount of time required to water the plants and rate of water coming out of the pipe. A bucket of 15 litres filled up in two minutes. So the result was 1192 litres of water were being used for watering the plants.

Drinking water

The group took a 15 litre watercan with four students of each class asked to drink the water from that can only. The frequency of drinking was also noted with the members recording the data at the site for three consecutive days. It was found that thirty two students consumed sixteen litres of water. For 140 members, the water required is about seventy litres.

Water usage in toilets

For this, students measured the water capacity of the tank, filled the tank with water and measured the water let out with each use. This amounted to 676 litres used in the toilet for flushing and washing. Students discussed with the support staff responsible for taking care of the toilet space and found that 70 litres are used for washing the floor and 30 litres are used for washing basins.

Usage in cleaning the school

Here students worked with the staff responsible for the cleaning of the school. They also took part in the cleaning to have a better idea of water usage and found that total water used was 304 litres. This included cleaning of entrance (30 l), cleaning of drain (60 l), washing bedsheet (32 l), towels (12 l), MDM hall (150 l) and basin area (20 l).

Usage in other areas

Students explored the different areas of water use. To do this they asked teachers, support and administrative staff for details of the amount of

water used to carry out science experiments (0.06 l), art and craft sessions (0.03 l), making tea (3 l), cleaning of waste bin (1.8 l). The total consumption came to about 5 litres.

Students collected all the data, made a graphical representation of water usage, compared the water usage in different areas and had a classroom discussion. To do this, students worked in groups, discussed and designed and devised ways to collect and measure data, collect and got an idea of water use in different areas.

In this project students also carried out an investigation into the properties of water and made a model of the water cycle. Reading and writing were an indispensable part in the project. Students could relate to the real-world context while understanding the content of the textbook and the relevance of knowing mathematical concept like measurement of volume, finding out percentage, and plotting graph etc.

Unlike the grade 5 project, we often used three hours or more each day for conducting the project. There were at least two teachers (the third and fourth authors of this article) always with the students. Often, three teachers and one or more teacher educators supported the teachers and students.

The project was very intensive in many ways. It involved three or more teachers at a time with twenty five students and much time was invested in it. The teachers in charge of the project found it very challenging to guide the students. Seemingly easy questions, like amount of water used in the toilet every day, were found to be difficult to calculate or measure.

The way forward

It was the first time that a project of this nature, involving the whole school, was attempted. The teachers in charge found it a great learning experience, though it was energy intensive and time-consuming. However, to manage such a large project requires a great degree of planning and school support. We plan to make it a project-based learning unit on the same topic along with appropriate assessment tools.

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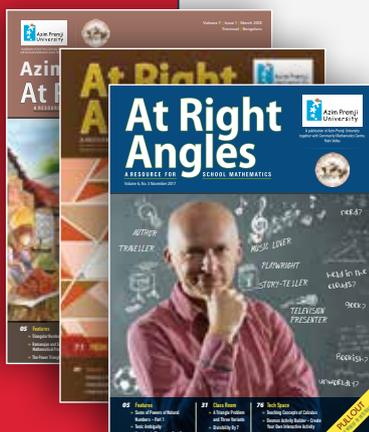


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