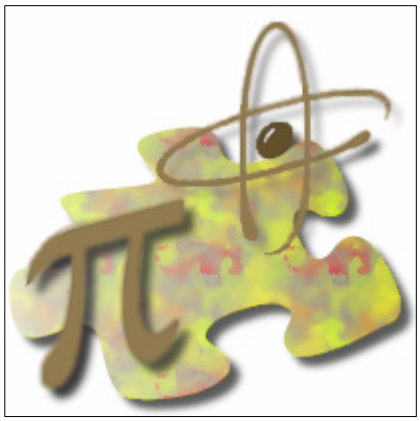

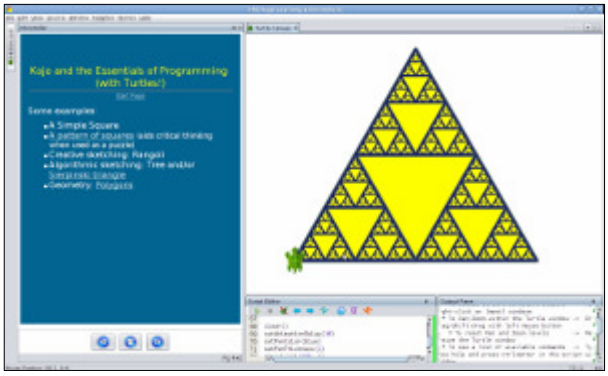

REACHA
ANNUAL REPORT
2010-11

CONTENTS

REACHA ANNUAL REPORT 2010-11

Introduction

Over the years REACHA has been engaged in human and community development initiatives over a very wide spectrum, as per its mandate. The focus has always been on reaching out, understanding issues and coming up with solutions that can be implemented practically and meaningfully in the best possible manner. The year 2010-11 was no different. Our focus on child development through learning by doing was carried on and various successful experiments were taken up. The prime focus this year was at the micro level – THE CHILD – and how activities could be designed that have direct impact on integrated growth and development of children. These activities and projects have been shared in detail in the Annexures, so that others too could use them appropriately. The same were also shared with other institutions as part of our efforts to replicate success and to promote community goodwill and develop likeminded allies in society. This way many more deserving and underprivileged sections of society benefited from our work

Our website – www.reacha.org continued to be accessed from across the globe and this further strengthened our belief that the site has now evolved as an online resource centre for us to take our work beyond physical borders.

The following were elected by consensus as the office bearers of the National Governing Board (NGB) of REACHA for the year 2010 - 11:

• Sri J.C.Pant (IAS Retd.)	Chairman
• Smt. Malati Sinha (IAS Retd.)	Vice-Chairman
• Sri V.P.Singh (IFS, Retd.)	Executive Director
• Capt. V.K.Pandey	Treasurer
• Dr. Pranav Pandya, Shantikunj, Haridwar (NGO)	Member
• Dr. S.L.Seth	Member
• Sri Laxmi Narain Modi	Member
• Sri Aakash Khandelwal, Beas Education Society, Amritsar	Member
• Sri A.S.Awasthi (IAS Retd.)	Member
• Sri Nikhil Pant	Member-Secretary

REACHA WORK 2010-11

Formal Membership:

As regards formal membership of REACHA, New Delhi, the total membership strength of the association stands at 39

CCE (Continuous & Comprehensive Evaluation) under CBSE:
Over the years REACHA has been in constant dialogue with the CBSE as regards sharing of its child centric learning by doing model. In this regard we shared with the Board a Project Based Learning (PBL) model for sharing with its affiliated schools as part of CCE. We proposed an Online Resource Centre to CBSE to implement this approach. **Refer Annexure 1**.

Kalpana Learning Centre at REACHA Pragya Sansthan, Dehra Dun:
The Kalpana Research and Learning Center (KRLC) is based on a few basic ideas:

- Nothing can be taught, but anything can be learned. So a teacher needs to be a guide and a mentor
- Children learn by doing, in environments that provide constructive feedback, and encourage mindful trial-and-error
- Children learn effectively when they can relate to what they are learning
- Self directed learning, in the form of play, is very powerful
- Given the above, the right kind of software can radically improve the way in which children are educated

At KRLC, children work in an interactive software supported environment wherein these ideas come alive. They get to:

- Learn computer programming, one of the core skills of the 21st century, using a modern object-functional programming language called Scala - which is great for both educational and industrial settings
- Learn Mathematics - with the help of the following activities:
    - Reviewing the fundamental concepts in their school Math curriculum
    - Applying these concepts within an interactive virtual environment - using computer programming
    - Doing experiments within a virtual Math laboratory
    - Creating their own personal Math projects
- Create Art and Music – using computer programming

With their activities at KRLC, children also:

1. Learn systematic and computational thinking
2. Learn creative and artistic thinking
3. Learn effective methods for problem solving
4. Learn teamwork
5. Learn how to learn new things
6. Learn proficient use of computers and constructive use of the Internet

The activities at KRLC are based on The Kojo Learning Environment, a free and open source desktop application that runs on Windows, Linux, and the Mac. Kojo is an exciting new development in the area of Interactive Educational Software, and builds upon decades of research on effective learning. Kojo is based on ideas derived from Logo, Processing, and the Geometer's Sketchpad. It is used worldwide.
Kojo has been developed by Lalit Pant, the founder of KRLC. More information about Kojo is available at :http://www.kogics.net/kojo

Kalpana for Adults

Most of the ideas about how children learn also apply to adults. At KRLC, classes for adults (of all ages) incorporate these ideas, and get participants to:

- Learn how to use Computers and the Internet effectively
- Practice systematic and creative thinking
- Exercise their brains, for continued mental sharpness!

Some of the topics covered are:

1. Fundamentals of Computer Hardware and Software
2. Using the Internet for communication and knowledge acquisition
3. Using productivity software (word-processor, spreadsheet, etc)
4. Basic computer programming

Other topics are decided based on the interests of the participants.

KRLC continued to work very closely with the Him Jyoti School girls, Dehradun. REACHA is grateful to the School management for giving us this opportunity to serve the young deserving students of this institution.

An update on Kojo -

1. Article by Martin Odersky: http://www.readwriteweb.com/archives/bringing_scalability_to_the_classrooms_of_the_hima.php (**refer Annexure 2**)
2. Interview with Phil Bagwell of EPFL, Switzerland: http://www.scala-lang.org/node/10714
3. Interview with Geertjan Wielenga of Sun/Oracle: http://netbeans.dzone.com/learn-scala-with-kojo
4. Kojo in America: http://www.youtube.com/user/dcbriccetti#g/c/C784DDEA72506602
5. Many education sites around the world now link to Kojo
6. Kojo has been downloaded in over 120 countries

Current Status - Stable Software Product with basic learning material

Next Phase (around one year) - Develop more comprehensive learning material (Computer Programming and Math) for grades 5-10. This material is being developed based on the experiences at the Kalpana Center. Continue incremental upgrades to software during this period

Initiating the "REACHA Play & Assembly Centre", at REACHA Pragya Sansthan, Dehradun:
This is part of REACHA's child-centric development activities in Uttarakhand and would be a centre for propagation of social values dedicated to promote selfless activities aimed at comprehensive human welfare.

Work with MBIIS, New Delhi:
REACHA continued to partner the school in the fields of child development – counseling, sports, PBL, CCE implementation etc.

A project – DEMOCRACY IN ACTION - was developed in partnership with the NGO – ADR (Association for Democratic Reforms), Delhi. This was implemented in Manava Bharati School, New Delhi. **Refer Annexure 3.** Children in the school actively participated and learnt the importance of electing only responsible honest candidates during elections. REACHA believes that if such PBL modules are appropriately plugged into school curricula, children will learn better and there would be genuine understanding of the real world.

Later in the year we found reflection of this in Anna Hazare's Anti Corruption movement. REACHA strongly believes that while an effective Lokpal Bill is needed, the real long term change will only happen if children develop and evolve into honest, compassionate human beings. For this our flagships SAMEER CLUB and MAITREYA CLUB are critical if the nation has to look at long term solutions, to not only transparency and accountability in public life, but sustainable development, in the long run that gives due regard to all. If every child develops as per her/his genius, this process helps in evolving into a vocation of personal choice for each child(which SAMEER CLUB explores and suggests) and the family & neighbourhood work in tandem and synergy, for welfare and security of each other (MAITREYA CLUB works towards this). We cannot have a happy, peaceful and contended society unless these steps are taken concertedly on a wide scale.

As part of Lifelong Learning for school teachers REACHA also develops subject papers. One on Math Teaching was shared with the school to help imprive math teaching in the classroom. **Refer Annexure 4.**

Sharing work with the Tech Mahindra Foundation (TMF):
TMF is a Section 25 Company that works in the areas of education, women's empowerment, vocational training and people with disabilities. REACHA shared its work with teachers of MCD

(Municipal Corporation of Delhi) during a 3 day training workshop at Naukuchiataal. **Refer Annexure 5.** MCD has more than1800 primary schools in Delhi where about 20,000 teachers teach about 10 lac children. The teachers were Shikshak Samman Awardes (SSA) identified by TMF. REACHA believes that these outstanding teachers would use our work to teach better and thus, hopefully more underprivileged children will benefit in these schools. The SSA teachers would gradually be trained as change agents in the system.

TMF partners more than 50 NGOs across the country. REACHA shared its ideas and work with many of these during the year. We shall continue to do the same in coming years

Squash Development Programme (SDP)

SDP continued to work in close partnership with the Delhi Development Authority (DDA) and schools. Children of Manava Bharati India International School regularly visited DDA Siri Fort Sports Complex three times a week to learn and play squash.

Over the last 3 years more than 300 children have been introduced to the great game of Squash as part of SDP. Many of these children have begun taking further coaching at DDA Complexes through professional coaches.

It has been also observed that children who play a sport in an organized manner also study better. This has added value to the CCE assessment of these children as part of their co-scholastic development under CBSE.

Exemption U/S 80G of the Income Tax Act

REACHA was given lifetime exemption after a detailed audit and assessment by the IT department. This is an important certification and indicates recognition of our standards of financial propriety. We are grateful to Shri RC Mital, Supreme Court Advocate, for contributing his valuable time to assist REACHA in relation to IT & general legal matters. Hopefully, we would be able to generate more donations for REACHA's future work with the help of our members, specially so through the distribution of the book of memoirs of the Chairman, **"Pandit Sriram Sharma Acharya As I Knew Him…Memoirs of a Civil Servant",** published by REACHA last year.

FINANCES

- There was a balance of Rs 7,532.50 in the Savings Bank Account of REACHA with Canara Bank, Diplomatic Enclave, at the close of the financial year 2010-11
- There was a balance of Rs.4,089.89 in the Savings Bank Account of REACHA with Canara Bank, Malviya Nagar, at the close of the financial year 2010-11
- There was a balance of Rs.4,947.00 in the Savings Bank Account of REACHA with Canara Bank, Dehra Dun, at the close of the financial year 2010-11
- There was a balance of Rs.14,587.06 in the Savings Bank Account of REACHA with Axis Bank at Malviya Nagar, at the close of the Financial Year 2010-11

- There was a balance of Rs. 10,68,350.02 in the Savings Bank Account of REACHA with Axis Bank at Malviya Nagar, at the close of the Financial Year 2010-11. This is a jointly operated account (Treasurer & Member Secretary)
- The Receipt and Payment Statement, Balance Sheet and Income & Expenditure Statement for the year ending 31st March 2011 are enclosed as Annexure

We thank Manava Bharati School for facilitating our accounts to be audited by the school Chartered Accountant.

Donations:

- Distribution of the book of memoirs authored by the Chairman - Rs. 1,16,290.00
- Sri Lalit Pant donated a sum of Rs. 75,000.00
- Sri Nikhil Pant donated a sum of Rs. 75,000.00
- Smt. H. Misra donated Rs 11,000.00
- Others - 35, 613.00

Investments are as follows:

Sl.No.	Certificate No. & Value Date	Amount of Investment	Maturity Date	Maturity Amount	Remarks
1.	10/05/2008	1,08,814.00	09/04/2011	1,40,010.00	KDR with Canara Bank
2.	11/12/2007	2,00,000	10/11/2011	2,57,460.00	KDR with Canara Bank

I would like to thank the Members of REACHA, office bearers of the NGB and all our well-wishers for their whole-hearted co-operation and support throughout the year.

J.C.PANT
Chairman
REACHA

ANNEXURE 1
CBSE ONLINE RESOURCE CENTER (ORC) FOR CCE:
A CONCEPT NOTE

- Introduction of CCE since 2009 has been a **challenge for school systems**
- CCE lays emphasis on **holistic child development** through Scholastic and Co-scholastic Areas and Co-scholastic Activities
- CCE needs to have a compelling **activity based component -** through interesting **learning by doing modules -** for it to be sustainable, fun and enjoyable to children. This should complement the conventional classroom teaching-learning process as part of the Formative Assessment (FA)
- **PBL or Project Based Learning** is an important activity based delivery mechanism of CCE - to make our school education relate to the **real world outside the classroom**
- PBL would **form part of the wide array of FA tools** prescribed by CBSE for CCE
- PBL inculcates **problem solving life skills in children**
- These **Projects are collaborative** (as far as possible) involving multiple stakeholders – children, teachers, schools, parents, institutions, government, NGO's and conscientious corporate houses as part of their CSR
- **Design of these Projects** is based on **curriculum mapping**, so that they fit into the **CCE scheme of things**
- Delivery of PBL modules is most effective through **people's participation** – in school this implies **SMC - Student Management Committee**. An SMC represents groups of students within a class/section bound by commonality of interest/activity/subject
- Each SMC maintains an **anecdotal records** register and a **single project file per academic session.** Class, subject and activity teachers function as facilitators and mentors. These documents help in the FA process and will be used by class/subject/activity teachers for relevant entries into the students Report Card
- **PBL themes** are based on **two broad delivery modules**:
    - **Through <u>Subject SMCs</u> (caters to Part 1 & 2 of CCE Report Card Assessments)**
    - **Through <u>Activity SMCs</u> (caters to part 3 & 2 of CCE Report Card Assessments)**

Let's look at each individually:

<u>Through Subject SMC: these PBL modules will tackle:</u>

i. **Scholastic Areas (Part 1: Academic Performance) –**
    - **1A - Subjects** like Math, Science, SSt, Languages etc
    - **1B - Work Experience, Art Education, Physical & Health Education**

ii. **Co-Scholastic Areas: (Part 2)**

a. **2A - Life Skills** (thinking, emotional & social skills)
b. **2B - Attitudes & Values** (attitude towards – teachers, school mates, school programmes, environment; value system)

An example of a Subject SMC delivery module is the **Project – Democracy in Action**. Refer http://samvedna.wikidot.com/adr-india. Here each **Subject SMC project is subject-**

convergent, involving relevant inputs from all subject teachers in a given class/section. Similarly, there would be other projects designed where subjects come into contact with the real world.

Some examples of **Subject SMC** delivery modules could be:

i. Energy Conservation to combat climate change
ii. Heritage Conservation to instill a sense of pride for our country's history and culture
iii. Water Conservation to save every drop
iv. Sustainable urbanization etc

Through Activity SMC: these PBL modules will tackle:

- **Co-Scholastic Activities (Part 3) –**

1. **3A – Literary & Creative Skills, Scientific Skills, Aesthetic & Performing Arts, Clubs (Eco, Health, Computer, Wellness etc)**
2. **3B – Sports, NCC, Gymnastics etc**

- **Co-Scholastic Areas: (Part 2)**
- **2A - Life Skills** (thinking, emotional & social skills)
- **2B - Attitudes & Values** (attitude towards – teachers, school mates, school programmes, environment; value system)

Some examples of **Activity SMC** delivery modules could be:

1. Developing critical thinking, scientific, creative, and aesthetic skills - with the help of rich and interactive software environments and computers. These skills will enable a better understanding of theoretical and real world phenomena. Refer the Kalpana Clubs (http://wiki.kogics.net/sf:kalpana)
2. Application of ICT to bridge the digital divide. Refer Project Samvedna (www.samvedna.wikidot.com)
3. Getting children to do Scratch – a programme developed by the MIT Media Labs – www.scratch.mit.edu. Scratch is a programming language that makes it easy to create your own interactive stories, animations, games, music, and art -- and share your creations on the web. As young people create and share Scratch projects, they learn important mathematical and computational ideas, while also learning to think creatively, reason systematically, and work collaboratively.
4. Securing our neighborhoods
5. Campus maintenance
6. School security
7. In-campus environment conservation
8. Library & academics
9. Sports and physical fitness etc

As a Subject or Activity SMC delivers a PBL module, Co-Scholastic Areas – 2A & 2B – Life Skills, Attitudes & Values come into play and are appropriately assessed

- **Grading/Assessment as part of FA within an Academic Session** as a result of observation of behavior of each child working through both types of SMC's by –

  - Class Teacher
  - Subject Teacher
  - Activity Teacher
  - Self & peer
  - A person (even a discerning Parent - not of any child in that class) trained by REACHA
- SMC's have been **effectively demonstrated by schools** after training by REACHA. A presentation on this may be downloaded from - http://www.reacha.org/local--files/reacha-and-new-cbse-approach/SMC.pdf
- PBL modules to be presented to CBSE schools through an **Online Resource Center (ORC)** designed and managed by REACHA in partnership with CBSE. This would be an ICT initiative
- ORC to function as a **hub for sharing knowledge and best practices** amongst all stakeholders. It will harbour PBL modules, project uploads, forums run by mentors, resource website links, case studies of best practices etc and cater to classes V – XII. Third party participation is welcome as long as their modules are within CCE parameters
- ORC to be a **collaboration between CBSE and REACHA**. Other resource organisations, corporates keen to support PBL modules as part of CSR etc may also partner this initiative
- CBSE to identify 8-10 schools in Delhi which can evolve as **Resource Centers (RC)** in the first year. REACHA will train these schools during the first year through quarterly workshops.
- The **RC's will work in tandem with the ORC** and also help in augmenting/updating it based on relevant online rights provided to them
- REACHA to assist CBSE in conducting relevant **teacher training workshops** - to start with at the RC schools. Later, these training modules will also be uploaded at the ORC for appropriate scaling up
- Over the next 2-3 years we can have 30-35 RC schools in Delhi. These would help **scale up nationally**, each RC school linking up to a nodal state level RC
- Appropriate **ICT tools to be used** to train teachers nationwide - audio/video conferencing, wiki's, blogs etc
- **Project requirements**:
  - 1 No. Project Director
  - 2 Nos. Project Managers in the first year
  - Workshop HR as per need
  - Internet/bandwidth/ICT support from CBSE
  - REACHA will share its Intellectual Property with CBSE at a not-for-profit basis. It will design, maintain and manage the ORC
  - All workshops to be conducted jointly
  - All manpower/training cost to be borne by CBSE as per Govt norms

- **ORC to be launched through a Schools' Seminar** – to be attended by Principals & 2 teachers each from the proposed 10 RC schools
- This concept note presents a **broad outline of the vision behind the ORC**. The precise details of how this maps to projects that can be run at schools on a day by day basis - will be determined based on inputs from the CCE experts at CBSE, and from the staff of participating schools.
- The ORC will be a **central location that will display the latest CCE related thinking at CBSE**. New information and guidelines from CBSE will be made available for viewing by schools within hours of the receipt of this information by REACHA

ANNEXURE 2

The Kojo interview

ReadWriteWeb

Bringing Scalability to the Classrooms of the Himalayas

By Martin Odersky / October 13, 2011 3:00 PM / 0 Comments

About 18 months ago, I came across Lalit Pant, the brain behind the Kojo *(http://kogics.net/sf:kojo)* desktop learning environment, working as a volunteer math teacher at the Himiyota School in India. Lalit, like myself, is a programmer and I discovered we have similar goals: making computer-programming fun, simple and easy to learn. What I really enjoy is that Lalit has committed his time to doing this for children.

Lalit spent the first six years of his career as a software engineer in India, most of them at TCS , then in the US for about 11 years, working at a startup in Pittsburgh, and subsequently at Sterling Commerce in Dallas. Increasingly unhappy with where his life was going, and eager to apply his experiences to accomplish something more meaningful, Lalit moved back to India with his wife and children to become a teacher.

Martin Odersky is Chairman and Chief Architect of Typesafe and creator of the open source Scala programming language; this post was co-authored by Lalit Pant, the creator of Kojo .

A Shared Vision

"A little while after arriving in India I started teaching at Himjyoti school. It was a super experience; working with under-privileged but very bright girls was tremendously satisfying and rewarding," recalls Lalit. "I found I really enjoyed teaching!"

However, like me, Lalit was dissatisfied with traditional approaches to teaching math and science. He found many of the accepted methods to be dry, abstract, and counter-intuitive for many children. He explains that there were major elements missing from the education process, like interactivity, creativity, and the ability to work at your own pace. Being a math teacher who also loved computer programming, Lalit decided to create an environment where learning could be fun- so Kojo was born.

Making Math and Programming Fun

Kojo is a Scala-based learning environment in which children study mathematics using computer programming while practicing logical and creative thinking. With Kojo, students get to play with math, science, art, and music in an interactive hands-on way.

"Over the past year and a half multiple batches of girls at Himjyoti School have been learning Math with me on Kojo, each group for about 3-4 months," says Lalit. "We first focus on the core Turtle commands, skipping any formal language training. The girls get to think of Kojo as an environment where they can control a turtle. They become familiar with a few basic commands, and then they just code. They create art, they solve puzzles, they do some geometry-based sketches, they compose music. At the end of the day, they have used the computer as a tool to play with ideas, and practice logical and creative thinking. They learn about the programming language naturally."

Lalit discovered the students soon sharpen their skills and progress well beyond the turtles-only point. The enthusiasts want to start writing Kojo stories, tutorial or teaching worksheets for other students follow while using Kojo. These too are written in Scala--and results have indicated that the girls really get it! "The girls are tremendously enthusiastic about Kojo. When the summer vacation arrived they pestered me to make them Kojo CDs to take back to their villages, so that they could install and continue to use it at their village school."

When I asked why Lalit chose Scala as the programming language for Kojo, he says it's pretty simple- "Scala works well because it's a language with a low entry floor for beginners and a high ceiling for students to grow." In practice, kids find it easy to just start programming in Scala and use only the features they need. Since beginners start with a very small and simple subset of the language and progress to a level of desired proficiency, there's a lot of room for them to go as far as they like.

Over the years, I have had the pleasure of watching Scala gain traction on a broad scale--from social media sites like Twitter and LinkedIn, increased adoption in the financial services

sector, and even NASA utilizing Scala's power as they deploy rockets into space. But for Lalit and me, education is where it all begins. When we enable children to program naturally, embracing writing code with enthusiasm and creativity, they will grow beyond the stereotypes of dry, abstract, and intimidating programming. We strive to create the motivating environment that prepares and sharpens their minds for tomorrow's challenges, building the web frameworks and applications of the future.

Photo of Himalayan students by Steve Evans (http://www.flickr.com/photos/babasteve/446318380/) | Haridwar photo by McKay Savage (http://www.flickr.com/photos/56796376@N00/2085710183)

ANNEXURE 3

POA for Subject-wise SMC (Student Management Committee) formation at MBIIS

Project – Democracy in Action - - FA3 and FA4

Handout to all teachers from Class V to Class X

- Reference sites:
  - www.myneta.info
  - www.adrindia.org
  - District Admin sites of Bihar Government as per need
- **Class Teachers/Subject teachers from Class V – X**:
  - Divide your classes into SMC's. Divide total strength by number of subjects to get the number of students per SMC. For example – if Class VIIA has 45 students and there are 6 subjects being taught, then number of students per SMC = 45/6 = 7 (3 extra students can be adjusted suitably in the 6 SMC's
  - 6 SMC's to become:
    - Math SMC – with Math teacher as the Mentor Teacher (MT)
    - English SMC - with English teacher as the Mentor Teacher (MT)
    - Hindi SMC - with Hindi teacher as the Mentor Teacher (MT)
    - Sanskrit SMC - with Sanskrit teacher as the Mentor Teacher (MT)
    - SST SMC - with SST teachers as the Mentor Teacher (MT)
    - Science SMC - with Science teacher/s as the Mentor Teacher (MT)
  - Each SMC to have a President & a Secretary. Responsible girls and boys to be identified by the Class Teacher
  - Subject trachers to ensure that students having genuine interest in their subject become members of their subject SMC
  - **Functions of SMC's**:
    - Each SMC to have a Register/File to document/keep anecdotal records of all:
      - SMC Minutes of Meetings (MoM)
      - Action Taken Reports (ATR)
      - Activities
      - Self & Peer Assessments etc
    - SMC meetings to occur during normal subject periods
    - Each Subject SMC members become the volunteers to assist the concerned subject teacher to deliver the subject part of the project in the entire class. Thus, the Math SMC students will help the math teacher to deliver the math part of the **Democracy in Action** project in the entire class
  - **Delivery of Project** - **Democracy in Action – Focus – Bihar Elections 2010**
    - All SMC's are asked to browse the reference sites for 2-3 days just to get an idea of the raw material that will be used

- Each SMC identifies a district from the link http://myneta.info/bih2010/. There are 38 districts to chose from
- Each SMC will now be doing the entire project on that district for FA3/4
- Suppose this district is Nalanda. The project then for each SMC will be:
    - Visit http://myneta.info/bih2010/index.php?action=show_constituencies&state_id=27 – the link to the list of Nalanda candidates
    - Identify a constituency from the list. Say it is Rajgir
    - Visit the list of candidates from Rajgir at http://myneta.info/bih2010/index.php?action=show_candidates&constituency_id=173
    - Pick any one of them. Say it is Arun Kumar Chaudhary
    - Visit Arun Kumar Chaudhary's details at http://myneta.info/bih2010/candidate.php?candidate_id=2204 and study them use this info
    - Also visit the Nalanda Distt Administration site at http://nalanda.bih.nic.in/. Gather info on various aspects like – Health, IT/Technology, Culture, Geography etc
    - Also browse other internet sites on Nalanda and find out more info about the district
    - Use all of above to develop your project on Nalanda District that is going for State Elections in 2010
- Project features on Nalanda for each SMC will have:
    - Math part –
        - pie charts, graphs etc on candidate Arun Kumar Chaudhary
        - graphs etc on district statistics from http://nalanda.bih.nic.in/dist_glance.html
    - SST part –
        - Geography, History & Culture of Nalanda
    - Science part –
        - Refer the relevant links at the Nalanda site, like:
            - http://nalanda.bih.nic.in/IT%20initiatives.html for IT initiatives
            - http://nalanda.bih.nic.in/health.html for health info etc
    - Hindi/Eng/Sanskrit part –
            - Report preparation on Nalanda district and its candidates
            - Exploring more about Nalanda and expressing that through essays, letters, skits, poetry etc

        - Making quizzes and crosswords on Nalanda and its candidates
    - Subject teachers need to further apply their minds to **explore creative understanding of Nalanda district** (for example) as it gears up for elections. We must emphasize the importance of
        - the current Bihar Elections 2010,
        - aspects of good governance in a democracy,
        - how it is important to be well informed about candidates and the general development in that constituency etc
        - geography, culture, economics, scientific dev etc of the districts in the country and how these get influenced by our choice of the right candidate
    - Each subject SMC will also be helping its concerned MT to deliver the project in the entire class. Thus, Math SMC will assist the math teacher to deliver the math part of project within all SMC's in that class
    - Each SMC will be maintaining the following to showcase its project:
        - A File/Register for records/Minutes/Anecdotal info of action/activities
        - A project file where the Nalanda Project is depicted
        - A wiki website to showcase this project online
  - All this info/handout also available online at http://samvedna.wikidot.com/adr-india for teachers and students to download. All are requested to refer this link for future interactions too besides classroom activities
  - Online Forum discussions at http://samvedna.wikidot.com/forum/t-285603/adr-india. To participate, teachers and students need to first enroll at http://samvedna.wikidot.com/system:join
- **Project Timelines**:
  - Subject SMC formation in each class/section – 30 November 2010
  - Identification of President/Secretary – 5 December 2010
  - Identification of Project district in Bihar – 10 December 2010
  - Record/File preparation – ongoing
  - Final Files and Records – 31 January 2011
  - Wiki website – Jan/Feb 2011
- Partnering organizations:
  - Manava Bharati India International School (http://www.manavabharati.net/)
  - ADR India (http://www.adrindia.org/)
  - REACHA (http://www.reacha.org/)

ANNEXURE 4

MBIIS – LIFELONG LEARNING PROGRAMME FOR TEACHERS - MAY 2011

How can we encourage math teachers to teach better – by understanding the way a child's brain processes math learning?

We often see little kids open up a toy due their sheer inquisitiveness. Some are later able to reconstruct it while others may care not to try. Some try but do not succeed fully.

What is common to all three here - the excitement to play with a new toy and the desire to open it up!! The ones who are able to reconstruct it might initially just stumble upon it but later this could become a habit - or so it might appear.

When a math teacher solves a problem herself and then reaches out to children and explains the concept, the process involved is often lost. The child is more likely to 'rote' learn the method rather than understand the real concepts. This teacher is assisting the formation of 'muscle or motor memory' in the child's brain. The child is likely to memorize the steps explained and her motor memory triggers problem solving the moment she sees a problem of this type.

Contrary to this is 'declarative or relational memory' that is created by the hippocampus. This memory is created when the 'process' involved in solving this same question is explained by the teacher. For this to happen she thinks aloud, de-constructs the problem (very much like the little kid who opens up the toy) and shares with her children how her brain is processing information. Once children grasp this - all are likely to succeed since human brains function alike – their relational memory begins to form as regards understanding this concept. After this each child should be given the chance to attempt a similar problem her own way. When this opportunity is given the child's brain will work to access the 'process' from the declarative memory space in the brain where it has been stored….and will most likely be able to solve the math problem. Also – implementation of this process in the form of steps for problem solving might still be different for different children – and this should always be encouraged by the teacher. Once this begins to happen more frequently the fear of the subject will go away and math learning should become fun.

A critical role of the hippocampus during formation of declarative or relational memory is 'linking.' If math concepts can also be appropriately linked – say from one chapter to another within algebra, arithmetic or geometry – more effective would be the storing/access of the 'right process of problem solving' within a child's brain. Teachers need to lay special importance on this aspect while they teach.

The more this approach to math teaching is reinforced the more likely it is that math learning would become fun and exciting for kids. Teachers need to be encouraged to work towards

this declarative memory formation for each new concept they teach in class.

Today, ICT based math models can also often help us further de-construct the problem solving process. Therefore, the probability of a child enjoying math go up with the use of innovative and appropriate software - many of which are open source. However, these need to be implemented in class after adequate analysis and testing – to be able to meaningfully complement ongoing teaching – learning and not be a substitute for them.

Annexure 5

LEARNING BY DOING --- AN APPROACH TO CHILD DEVELOPMENT

TMF SESSION AT NAUKUCHIATAAL WITH MCD TEACHERS – 25 JUNE 2011

1. **Learning by Doing ---** An effective approach to child development (5-10mins)
2. **Sharing the NDPL Energy Club & Safe India Projects --- A Case Study –** (2-3 hours/as per time allotted)
    - Concept of self audit of energy consumption & safety at home, in school & the neighbourhood -- sharing the project formats
    - Sharing of energy club reports submitted to Tata Power ---- as reference/resource material to design lesson plans etc
    - Slideshow of the programme/pictures + videos etc --- as reference material to give a visual idea to the MCD teachers
    - How MCD teachers...in groups... can prepare lesson plans/projects for their students with this resource material. This will actually transpire in the session. These may be transacted in classes as part of CCE's Formative Assessment. Each teacher will have concrete projects in hand by the end of the session
    - Teachers can inculcate desired moral values in their students while doing these CCE projects in class
    - In the process --- they can also identify the hidden talents of every child --- and document these ---- as part of CCE
    - Teachers will be encouraged to practice *'subject convergence'* --- all subjects will be linked to the projects --- math, science, EVS/SST etc --- so that a single project integrates all subjects and appropriate assessment can be made. This helps the child to think, learn and apply knowledge holistically in an integrated manner
3. **CCE approach of CBSE & how these projects/case studies relate to it (part of the above 2-3 hours): -** Since MCD is still in the process of formulating its approach to CCE, the linkages to the current CBSE approach are merely indicative:
    - **Scholastic** - subject related (how math & science will be applied for energy conservation; communication skills/languages for Safe India etc)
    - **Co-scholastic Areas**:

- *Life skills* - thinking, social & emotional (can the child be encouraged to think innovative ways of saving energy...engage with the society/neighbourhood and get emotionally charged about doing this for 'mother earth')
- *Attitudes & values* - attitude towards teachers, school mates, school programmes, environment; value & ethics (can these projects inculcate these values & attitudes towards people around the child?)

- **Co-Scholastic Activities**:
  - *Skills* - literary & creative, scientific, aesthetic & performing arts, clubs (eco, health, computer etc) --- (can the child be encouraged to make/create/design art, banners, charts, street plays around the themes of energy conservation & safe neighbourhood)
  - *Health & physical education* - sports & games etc --- (we can also relate 'energy' to human energy & fitness....and thereby inculcate good/balanced diet, proper sleep etc). Also, we can encourage teachers on occasion to play with children in the school ground --- while showing them the attributes of solar energy --- this also reminds me of Giju bhai's experiments with sports/games)

4. ***Maitreya ke mere prayog* – (5 to 10mins**) – how these projects formed part of my experiments with children
5. **An overview of the TMF Wiki site** (**15 mins**)--- this will help in relevant follow ups etc
6. **Conclusion (5 mins)** ---- teachers could use these projects (designed in the session) or get ideas to develop their own creative/innovative ones based on themes that are relevant to the child & the world around. An imp conclusion would be that every teacher will be encouraged to explore *'linkages'* between themes & subjects and motivate every child to participate. So, a lot of *lateral thinking* would be one of the outcomes from this session for MCD teachers. Considering the background of children in these schools, the suggestion would be to devise projects/plans that can be

delivered in the school itself --- and implemented under direct teacher guidance. This would be part of CCE.

A few sample projects developed by teachers are listed in the next page

Group - IV Class IV.

Members :- Inderpreet Kaur, Savita, Balram, Neelam

Theme :- Save Energy.

Aims and Objectives of the Project. **FA-I**

1. Sensitise students, Parents and neighbourhood about electricity saving.
2. To find out which electricity appliances are used carelessly resulting in wastage of electricity.
3. Giving alternate ways of electricity conservation.

FA-II

- ✱ Poster Making
- ✱ Slogan writing
- ✱ Brainstorming session
- ✱ Pamphlet designing

FA-III

✱ 5 homes visit and count the appliances acc. to -

Name of appliance	No. of appliance	Wattage	No. of hours used

- ✱ Awareness rally
- ✱ Nukar Natak

FA-IV

- ✱ comparison and compiling of data of 5 houses
- ✱ Presentation in the form of report and Oath boar

Oath board

I will not over charge my mobile. . I will use CFL. Thank

ऊर्जा संरक्षण कक्षा - पञ्चम

कक्षा पाँच में बच्चों को ऊर्जा संरक्षण के विषय में बात की जायेगी और उनसे बिजली को बचाने के लिए क्या-क्या उपाय वो स्वयं कर सकते है और क्या-2 ऐसी बातें हो सकती है जिससे ऊर्जा का संरक्षण हो सके।

Formative Assessment – I इसके तहत छात्रों से अपने घर में लगे बिजली के विभिन्न उपकरणों को गिनना, उनका कितने समय के लिए उपयोग किया जाता है आदि बातों को नोट कर के लायेंगे। साथ ऐसा कौन सा उपकरण है जो फिजूल में ऊर्जा बर्बाद करता है।

Formative Assessment – II छात्रों को पता लगाना होगा कि घर में लगी ट्यूब लाईट कितनी है और कितने वाट की, बल्ब कितने वाट के, पंखे कि ऊर्जा लेते है, फ्रिज, show lights आदि कितनी w ऊर्जा लेते है। साथ ही छात्रों को Parents की उपस्थिती में मीटर रिडिंग किस प्रकार देखी जाती है

Formative Assessment – III इसमें छात्रों को ऊर्जा संरक्षण से संबंधित चार्ट बनाना, अपने पड़ोसियों को समझाना समूह स्तर पर रैली निकालना, बैनर बनाकर समझाना व ऊर्जा के विषय में लोगों को सामान्य बातें बताना।

F. A. IV → F.A IV में छात्रों को कक्षा के स्तर पर भाषण प्रतियोगिता, ऊर्जा संरक्षण संबंधी चित्रकला प्रतियोगिता आयोजित करना, सामान्य ज्ञान प्रतियोगिता करना आदि विभिन्न प्रकार की गतिविधि की जा सकती है

Annexure 6
REACHA ACCOUNTS