Capacity Building For Teachers

STRENGTHENING THE EDIFICE

Educational Initiatives (EI) believes that significantly improved student learning can happen only through systematic research into learning which includes assessment, as well as areas like misconception research. This working paper series will share learnings from various past and present EI projects as well as path-breaking work in these areas elsewhere in the world. Please write to us at assessment@ei-india.com for questions or comments.

Educational Initiatives Pvt. Ltd.
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WHY THIS IDEA HAS LARGER RELEVANCE

If a doctor, lawyer, or dentist had 40 people in his office at one time, all of whom had different needs, and some of whom didn’t want to be there and were causing trouble, and the doctor, lawyer, or dentist, without assistance, had to treat them all with professional excellence for nine months, then he might have some conception of the classroom teacher’s job. ~ Donald D. Quinn

Teachers have one of the most demanding vocations in the world and in order to fulfill their important roles with excellence, they need training, motivation as well as regular mental, emotional and spiritual rejuvenation. That educational systems the world over recognise the importance of the teacher is often evident by the resources spent on teacher capacity building. However, the issues often have been about building an effective model and mechanism that would develop and enhance the teachers’ capacity and provide them avenues for professional development.

The training needs of teachers in India’s government schools are truly daunting. The number of ‘untrained’ teachers not meeting the Right to Education Act’s (RtE) requirements is 5.48 lakh in Primary and 2.25 lakh in Upper Primary schools. This is in addition to the training needs of 13.3 lakh new teachers who need to be recruited in the next three years as per the needs. The pre-service training curriculum followed in the country is often outdated and does not develop teachers who can handle the challenges of their role innovatively. Given this scenario, the in-service teacher education and professional development is one of the greatest challenges in ensuring that RtE not only provides mere access to all children but also a quality education.

A government document reports the following lacunae in in-service teacher education and professional development -

- The current training approach is fragmented, often leading to a situation that teachers repeatedly attend the same training programme year after year. Consequently, training often does not lead to capacity enhancement or content enrichment, or result in enhancing motivation levels of teachers to bring about changes in classroom practices.
- The practice of developing an overall Training Plan, which delineates details of different training modules, does not exist, and needs to be introduced.
- Focus needs to be given to introduce and sustain interactive, participatory and democratic training methods/ processes.

This working paper explores a few innovative international examples and EI’s experiences in enhancing teacher capacity.

FOR AN EFFECTIVE TEACHER DEVELOPMENT PROGRAMME

For the teacher professional development programmes to be effective in improving the teacher’s classroom performance, the following must be ensured:

- Some accountability system by which the teacher accepts responsibility for the quality of student learning.
- Periodic Student and Teacher Assessment that evokes an emotional response that may help stakeholders to act on it. The assessments would provide data based inputs on progress and gaps.
- Targeted teacher trainings that focus on the actual learning gaps found in students (and also among teachers) and how to overcome them – the problem has to be understood first before the solution.
- Training modules that are well structured and include motivational workshops as well as building strength in content and pedagogy.
- The entire training approach to be one of moving the system from rote learning to learning with understanding.
- A training plan for the year that is made visible and transparent, so that teachers can apply and get selected based on their needs.
- A teacher professional development system built with teacher mentors and master trainers who are constantly updated in knowledge and skills.
- Research and development of innovative methods involving experts in the field to further the professional development of teachers.
- Capacity building methods that are participatory and develops a culture of shared learning.
- Use of technology to attain scale and provide individual attention to teacher needs.
TEACHER NEEDS ANALYSES FOR CAPACITY BUILDING

Needs Analyses essentially are methods that identify and determine the type of capacity that needs to be built in teachers. Teacher needs for capacity building could be established in the following ways:

1. **Student Assessment**: Assessment is an integral part of learning. It helps us determine whether our goals of curriculum are being met or not. Well designed assessment not only helps a learner demonstrate what she has learnt, but also enables the teachers to understand, "Are we teaching what we think we are teaching?" "Are students learning what they are supposed to be learning?" "Is there a way to teach the subject better, therefore promoting better learning?"

2. **Teacher Assessment**: Teachers in many cases are in need of specific feedback - which will provide them insights on where, what and how to improve their own abilities in order to function with effectiveness. Teacher assessments would identify common strengths or weaknesses among teachers, provide feedback to individual teachers on their strengths and weaknesses and improvement areas, and recommend interventions for improvement based on the above.

3. **Background questionnaires**: Along with teacher assessments, information can be collected through background questionnaires, where teachers can be asked to provide their perception of what they most require to effectively enhance their performance.

4. **Focus Group Meetings**: Focus group discussions with Teachers, Students, Parents and school management, can be carried out to identify needs for building capacity.

5. **Visioning Exercises**: These can be used to create vision and build a shared mission in a school. This enables identifying top priorities for the school. In this exercise the team gets to think creatively about their vision by visualising their dream school and articulating the qualities of students who would emerge from this school, and the qualities of teachers who would make this happen. This also enables the teachers to reflect on the profession of teaching.

6. **Class Room Observations**: are undertaken to understand interactions between the teacher and the class, the class environment, to capture how the tone is set at the beginning of the class, classroom management, lesson planning, any specific teacher activities, assignments, kinds of questions put forth to students, nonverbal behaviour of the teacher, and such other factors. These enable the identification of areas that the teacher is strong in and areas that need improvement.

The teacher needs as revealed by such methods could be used to develop targeted professional development programmes focussing on specific needs.

LESSONS FROM AROUND THE WORLD - FINLAND

The Finns won attention with their performances in Programme for International Student Assessment, or PISA in 2006 sponsored by the Organization for Economic Cooperation and Development, in which 57 countries participated. In this test, Finland's students were placed FIRST in science and near the top in math and reading. “An unofficial tally of Finland's combined scores puts it in first place overall”, says Andreas Schleicher, who directs the OECD's test. The gap between Finland's best- and worst-performing schools was the smallest of any country in the PISA testing.

The academic prowess of Finland's students has lured educators from more than 50 countries in recent years to learn the country’s secret. What they find is simple but not easy: well-trained teachers and responsible children. Early on, kids do a lot without adults hovering. And teachers create lessons to fit their students. Finnish teachers pick books and customize lessons as they shape students to national standards. "In most countries, education feels like a car factory. In Finland, the teachers are the entrepreneurs," says Mr. Schleicher, of the Paris based OECD, which began the international student test in 2000.

At the Norssi School, a model campus in Jyväskylä, in a city in central Finland, visitors and teacher trainees can peek at how it's done from a viewing balcony perched over a classroom. What they see is a relaxed, back-to-basics approach. The school is run like a teaching hospital, with about 800 teacher trainees each year. Graduate students work with kids while instructors evaluate from the sidelines. Teachers must hold master's degrees, and the profession is highly competitive: More than 40 people may apply for a single job. Their salaries are similar to those of U.S. teachers (not the best among professions), but they generally have more freedom.

Teachers and students address each other by first names. Students rarely get more than a half-hour of homework. Finnish educators believe they get better overall results by concentrating on weaker students rather than by pushing gifted students ahead of everyone else. The idea is that bright students can help average ones without harming their own progress. When students accidentally fall asleep in a class, teachers don’t disturb. While napping in class isn’t condoned, authorities say, "We just have to accept the fact that they're kids and they’re learning how to live." One explanation for the Finns' success is also their love of reading. Parents of newborns receive a government-paid gift pack that includes a picture book. Some libraries are attached to shopping malls, and a book bus travels to more remote neighbourhoods like a Good Humor truck.
Research Lessons, as Lewis describes them, are actual classroom lessons which share the following characteristics:

1. Research Lessons are planned for a long time.
2. Research Lessons are observed by other teachers.
3. Research Lessons are designed to bring to life a particular goal or vision of education.
4. Research Lessons are recorded.
5. Research Lessons are discussed.

In essence, the practice of lesson study involves a group of teachers carefully planning a lesson on a particular topic with the aim of bringing to life a particular goal or vision (for example, a student-centered classroom). These teachers actually conduct the lesson which is both observed by other teachers and recorded for future reference. This is followed by a seminar in which the teachers discuss, dissect and share the learnings from the experiment.

As an example, Catherine Lewis describes in detail a research lesson on levers from the Komae School No 7 – a normal public school. The vision that was being implemented in this lesson was “letting students value friendship and yet build their own perspectives and ways of thinking.” In this context, the teachers chose to “introduce levers in a way that really motivates the student’s desire to learn, and that encourages and emboldens them to develop their own perspectives.”

In the process of planning the lesson, the teachers share various ways in which they have taught the lesson before and discuss which ways will help them reach their goal. They decide to challenge students by asking them to lift a 100 kg bag of sand, and then group the students with similar ideas together to put their thoughts into practice. The teachers have never tried this before, and wish to find out if this will help promote individual thinking.

On the day of the lesson, many teachers from the school observe: while the plan is put into action, teachers take note of how it goes, and record student interactions, questions, etc. After the lesson, a colloquium is organized where the teachers who planned and conducted the session speak about their experience and then open the forum for discussion. In this process, the lesson gets discussed in detail, and different points of view about what students learnt get shared.

Catherine Lewis has made an insightful analysis of the impact of such research lessons in Japan. She lists down nine ways in which research lessons have an impact. Four of these ways are very relevant to the Indian context:

1. **Individual Professional Development**: The feedback obtained from observers in a research lesson is a very valuable tool for professional development. Often, young teachers struggle with problems in the classroom that their more experienced colleagues can quickly help them with. The practice of observation and feedback provides an effective way of professional development. Coming from other teachers, this input is likely to be much more effective.

2. **Teachers learning to see children**: A tremendous impact of Research Lessons is that teachers start to understand how their students think and behave in a classroom. Such an understanding helps developing parameters by which a teacher can judge the status of her class. In Japanese research lessons, data is often collected on student eagerness, student interaction, even aspects like moments of surprise in the students or excitement as evidenced by shining eyes! *This understanding is probably the most critical aspect of teaching for understanding and has been largely treated as unimportant in Indian schools*. Research lessons help the teacher build this understanding steadily through observation and discussion.

3. **Spread of new content and approaches**: Research lessons allow for ideas and approaches to be quickly shared among teachers. School principals who have agonized over the fact that staff room interactions are rarely about teaching will notice that research lessons provide an invigorating forum for sharing and discussing ideas and teaching methods.

4. **Honouring the Central Role of Teachers**: Finally, research lessons put the teacher at the centre of school education, honouring and emphasizing their primary role in ensuring that students learn. While textbooks are useful guides to teaching, the teacher is the best person to judge how much her students are learning and what she needs to do to improve it. Research lessons help focus resources for improvement at the point where they have the most impact: the teachers.

Every principal who has tried implementing a change in teaching culture and methods (to enable students to learn with understanding) knows just how difficult it can be. With the pressures of teaching in a school, comes a natural resistance to new and alien ideas. And yet, it is this resistance that the leader must overcome to create the Art of Transformation. Lesson Study is an interesting paradigm that seems to have a lot of relevance to the Indian situation. It focuses on improving the very aspects that trouble us the most. The original article is available at [www.lessonresearch.net/aera2000.pdf](http://www.lessonresearch.net/aera2000.pdf), in which Dr. Lewis further analyses conditions which help Research Lessons flower.
EI’s EXPERIENCE IN BUILDING TEACHER CAPACITY

Educational Initiatives, for many years, has been focussed on building Teacher capacity through student and teacher assessments, training workshops and teacher observation programmes. These are undertaken for both private and public school systems in India, Bhutan and Middle East.

The focus of these activities has been to bring about a paradigm shift in the way students learn and the teacher approaches teaching - to move the system from one of ‘rote learning’ to ‘learning with understanding’. This means that teachers themselves should have deeper conceptual understanding of the content they are expected to teach and are geared to teaching for understanding. The workshops provided by EI are taken by school heads, teachers, state department’s resource personnel such as officials from SSA, SCERTs, DIETs, Block and cluster resource persons.

The workshops are addressed to enrich teachers’ academic knowledge and pedagogical methods in subject areas, to move the schools to a skill based curriculum to focus on learning with understanding, for teachers and state personnel to understand the performance data and identify the learning gaps, for teachers to understand assessments and design good questions, to differentiate between mechanical and conceptual learning, and to probe student misconceptions through student interviews, to name a few.

A Teacher and Principals workshop in Bhutan on ‘Learning with understanding’.

A Pre Assessment Analysis workshop for state officials and educators on the Student Learning Study carried out by EI for 19 states of India.

FEEDBACK FROM PARTICIPANTS

- The sessions helped us to understand the importance of data interpretation in enhancing the learning levels in children. It raised some interesting questions sparking off a healthy debate on issues.
- It helped us to understand how to discern a good question from ambiguous one. The session laid adequate emphasis on the importance of scientific approach towards question paper setting.
- Officials from DIET, SSA, Dept of Education, and Teachers, Government of Andhra Pradesh, AP Randomised Evaluation Project

- The presentation made was eye-opener. State team can work on the data received to improve quality and other initiatives.
- The process of presentation is extremely helpful. This kind of an assessment verifies our understanding of student learning levels
- Today there was a presentation on the findings of assessment of class 3-8. Common errors were found among students in Maths and Language and were discussed one by one. A method of teaching young children in an interesting way was discussed (referring to mindspark). This academic work is appreciated.
- Officials from Rajiv Gandhi Shiksha Mission and SCERT, Chhattisgarh, Test of Student Learning Project

- Resourceful facilitators. Enriching session with full of information. Informative, I have learnt many more new things from this fruitful two day workshop. Hope many more sessions (workshop) like this in the near future.
- Understanding benchmarking and its implications is useful for remedial classes in the schools.
- The sessions were very practical. The participants got the opportunity to think through the ASSL and TNA results. They gained insights into misconceptions. Most of all, they could get hands on practice in planning for improvement
- Officials and Teachers from Dept. of School Education, Bhutan Board of Examinations, Education Ministry, Bhutan

- The structure, design and presentation of the ‘Understanding by Design’ session in the Skill Based Curriculum workshop were excellent. The 2 days of the workshop were extremely proactive, refreshing and energizing!
- Ms. Simran Mrinmaye, Principal, Gurukul School, Pune

- A very enriching experience for all teachers! Very interactive sessions. A very innovative and a wonderful workshop.
- Mrs. Ambuj Sharma, Vice Principal, Jain International School, Bangalore
Today’s students need to know not only the basic reading and arithmetic skills, but also skills that will allow them to face a world that is continually changing. They must be able to think critically, to analyse, and to make inferences. “Are we sure that our students are acquiring these?” Participants in the workshop understand the need for assessment, the role assessment plays in understanding student learning, the link between assessment and instruction, different types of assessment and the criteria for a scientifically designed assessment.

Well designed assessments are built using good questions. A good question is one that challenges and stimulates a child to think deeply and to apply concepts learnt. The ability to ask questions that make students think – both at the time of instruction and assessment, is the hallmark of a good teacher. A good question, correctly framed, can help a teacher understand the thought processes of students and how well a child has internalized a concept or mastered a skill. The types of questions teachers ask influence what and how students study, read, practice, etc. The questions teachers ask should match what the students are expected to learn. That is, assessment should be linked to the goals of a unit, and should be used by the teacher for feedback.

Teachers in this workshop develop an understanding of good questions and get hands-on experience in identifying issues with different questions used in day to day practise. They also learn to differentiate between ‘rote learning’ and ‘learning for understanding’ and how the questions they ask in the class enable promoting deeper understanding in the students.

Students, teachers and educational planners often have to take decisions without being supported by analysis of authentic data on student learning. However, data from a large scale, scientifically designed and well-administered test can be extremely reliable and authentic in developing insights about the status of student learning, their common errors and misconceptions. Participants in this workshop learn to explore data from assessments and classroom tests for understanding how well students learn and hence the teaching process.

Participants develop an action plan that will benefit three areas: (1) to understand better the progress of the class as a whole, (2) to conduct direct and authentic assessment activities that are applied back to their own classes to improve student learning, and (3) to give clear feedback to the student and all stakeholders to take corrective action.

Teacher Effectiveness Enhancement Programme (TEEP) is designed to help teachers understand their strengths and weaknesses in a ‘in situ’ classroom situation. In this programme, trained and experienced teacher faculties visit classrooms of select schools and carry out teacher observations on ‘a class in progress’ in a ‘business as usual’ scenario. Experts also study other materials like notebooks, lesson plans, test papers, and TLMs in a non-threatening and supportive manner. Teachers are evaluated on all these aspects and suggestions provided for improvement. Experts also carry out demo lessons to provide role models for teachers. The approach completely avoids the ‘lecturing’ / ‘telling’ mode, and is based entirely on work in the classroom. The visiting faculty from EI provide ideas for the problems the teacher faces in delivering quality instruction in the classroom. Workshops on subject content and pedagogical methods are conducted for the teachers to enhance their classroom effectiveness.
ACADEMIC ENRICHMENT PROGRAMME (AEP)

The focus is on holistic improvement of student and teacher performance in schools. Quality benchmarking for the school is conducted as a first step, to provide basis for improving school effectiveness, followed by Teacher Training Interventions through the academic year. Modifying teaching approaches in English, Maths, Science and Social Studies of Classes 1 to 7 is the focus. Teachers make this change using a framework known as “Understanding by Design”. The programme includes sessions clarifying the new approach, making worksheets and assessments to suit the new approach, demo lessons, giving feedback for improvement after extensive observation of teachers in the classroom, etc.

Provides a valuable opportunity for the school fraternity to gain a clear, impartial evaluation and analysis of the school’s strengths and weaknesses – leading to the most important question ‘How effective is our school and what can be done to improve further?’

SKILL BASED CURRICULUM WORKSHOP

The workshop gives schools an exposure to Skill-based curriculum and assessment. It helps schools move up the existing systems and procedures from a fact based, rote-oriented curriculum to a skill-based curriculum, provides teachers with actual hands-on experience implementing a skill based approach and helps them inculcate the learning into their daily work through appropriate activities, worksheets and other related elements. Teachers design curriculum units and assessment tools that focus on student understanding, proposing a set of design standards that achieve quality control in curriculum planning. The learning for teachers would be how to focus on the ‘enduring understandings’ of each lesson / unit / subject they teach, and therefore, provide for ‘real’ understanding in students (as opposed to ‘apparent’ understanding). The term "enduring" refers to acquiring a deep understanding of big ideas, abstract concepts, and essential questions within key curricular areas that students will revisit throughout their school career. The model trains the teachers to recognise these and differentiate them from the important knowledge including facts, processes, and methods. The approach makes the learning process more interactive and student-centred.

SUBJECT WORKSHOPS

Subject workshops help teachers understand the learning objectives of specific subjects like language, maths and science. The workshops motivate teachers to reflect on the importance of making the learning applicable and closer to real life context. Many creative ideas are shared to develop low cost and simple teaching aids. The workshop serves as a platform for teachers to explore various tools through discussion, case studies and information from around the world. The session details of the workshops are given below:

<table>
<thead>
<tr>
<th>Language Workshop</th>
<th>Science Workshop</th>
<th>Maths Workshop</th>
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</thead>
<tbody>
<tr>
<td>Facilitating Language Acquisition</td>
<td>Understanding Science</td>
<td>Making Maths Meaningful</td>
</tr>
<tr>
<td>Exploring and Planning Reading and Writing Skills with Activities</td>
<td>Assessing Science Learning</td>
<td>Assessing Student Learning</td>
</tr>
<tr>
<td>Importance of Grammar</td>
<td>Misconceptions in Science</td>
<td>Identifying Common Errors</td>
</tr>
<tr>
<td>Appreciating Poetry</td>
<td>Science Simplified: Use of Teaching Aids in the Classroom</td>
<td>Handling Difficult Topics</td>
</tr>
<tr>
<td>Integration of Subjects in Language Learning</td>
<td>The Window to Tomorrow: Staying abreast with scientific research</td>
<td>Hands-on Mathematics</td>
</tr>
</tbody>
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TECHNOLOGY SOLUTIONS TO CAPACITY BUILDING

Technology solutions enable providing access to professional development activities for a large number of teachers at their convenience. These could be

- **‘e-teacher’**: The idea is to create a bank of videos of good teachers teaching at least basic and key topics and make them widely available so that they can be used by a large number of school teachers.
- **‘Video Teacher Observation’**: Schools can be provided with low-cost video cameras and teachers are required to video-record their sessions – say one every fortnight and send it to an expert, this may be an almost equally effective solution (except for the face to face observation and feedback)
Teachers being the all-important pillars in the education system, it is important to attract the best possible people into the profession and then support them to function effectively. This support would be primarily through channels such as –

- Quality training (both pre-service and in-service)
- Curricular support
- Detailed individual teacher observation and feedback
- Detailed understanding of teacher needs both for instruction and other needs through diagnostic assessments.

The teacher who is indeed wise does not bid you to enter the house of his wisdom but rather leads you to the threshold of your mind. - Khalil Gibran

We are an educational research organization that focuses on learning research through assessments. EI has been started by a group of IIM Ahmedabad alumni with first-hand experience of setting up and running educational institutions. It has been formed with a mission to work towards qualitative improvement in India’s educational system and our vision is “A world where children everywhere are ‘Learning with Understanding’”.

PROJECTS OF EI:

Andhra Pradesh Randomised Evaluation Study (2004 onwards): Done in partnership with Harvard University, Azim Premji Foundation, World Bank and the Government of Andhra Pradesh, this is a longitudinal study across 8-9 years and covers currently 100,000 elementary school kids and measures the impact of various inputs (e.g., block grants, additional teachers) with outcome-based teacher incentives.

Assessment of Student Learning in Sarva Shiksha Abhiyan – RGSM, Chhattisgarh (2008 onwards): The test was developed in Hindi and administered to approximately 3 lakh students in about 1900 schools in 16 districts in Chhattisgarh states. The tests have already been conducted for students of class 3 to 8 for Language and Maths and the report submitted to RGSM.

Municipal School Benchmarking Study (2004-2007): Supported by ICICI Bank, this study assessed learning in 35,000 municipal school students from class 2, 4 and 6 across the 6 biggest towns in five states- Gujarat, Andhra Pradesh, Rajasthan, Chhattisgarh and Uttarakhand.

UNICEF Learning Assessment Study for Quality Education (2005-2006): assessed mathematics and language acquisition among primary school children in the UNICEF quality package schools in 13 states of India. The tests were standardised across 9 languages and involved very intricate development cycle involving language experts from all over India.

Teacher Needs Assessment (2008 onwards): is a census study that has been initiated by the Royal Education Council, Government of Bhutan. In this project all teachers of Bhutan are assessed for their general ability, competence in subject knowledge and pedagogical practices.

Bhutan Annual Status Student Learning Study (2008-2009): This study was done in partnership with Royal Education Council and Ministry of Education Bhutan. Nearly 34000 students in classes 4, 6 and 8 are tested for learning in Language, Maths and Science in 424 schools.

Ei’s Products and Learning Solutions:

ASSET: is an objective-type, multiple-choice test for students of Classes 3 to 10. It is a scientifically designed, skill based assessment developed in India for Indian schools. It assesses students’ level of proficiency in the skills and concepts underlying the school syllabus and provides them feedback about their strengths and weaknesses. Know more about ASSET at www.ei-india.com

Mindspark: is a computer based self-learning programme that helps the child improve her skills. It allows each student to follow a learning path that is based on her need. Mindspark is currently available for Maths for classes 1-10 in English version. Mindspark can be accessed at www.mindspark.in.

Rural Mindspark: Hindi version is currently available on demand for some Maths modules. Contact Ei to know more about other language versions and modules.

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