Azim Premji University

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LearNing CURVe

Issue XX, August 2013

ASSESSMENT IN SCHOOL EDUCATION

Every student will be able to complete the puzzle, but the time taken for each student will differ. Assessment has to be linked to the learner's own abilities, which varies with every student.

WORDS TO SEARCH

1. SUMMATIVE
2. FORMATIVE
3. CONTINUOUS
4. COMPREHENSIVE
5. AUTHENTIC
6. COMPETENCY
7. LEARNER
8. GROWTH
9. CHANGE
10. DEVELOP
11. HOLISTIC
12. PROCESS
13. INTEGRATIVE
14. SKILL
15. ABILITY
16. CAPACITY
17. EVALUATE
18. PARTICIPATORY
19. FEEDBACK
20. APPRECIATE
21. ANALYSE
22. INQUIRE

WORD SEARCH PUZZLE

KEYWORDS IN ASSESSMENT

Start Time	Hr.	Min.	Sec.

End Time	Hr.	Min.	Sec.

E V I T A M M U S C N F O R M A T I V E
A K N Y T I C A P A C C A E F F D G E H
J P A N A L Y S E N T O A K C B G I H J
B M Q V T T S K H I E E B B L K K J O I
I W Y S I E N I A A T B Y E Z M L M L Y
C R X L C A F L J A V T A S X R O N I R
H D I O C E T L U Z G R O W T H O Q S O
D B R I J P O L G I N A F P E Q R Q T T
A P R F A P A Q U E L M K N J O P T I A
M F K N N V S X R S U O U N I T N O C P
P A K W E F A G J A U T H E N T I C I I
O W N I N Q U I R E V E F F X G Y H Z C
L M Z V Q T O R C S D S F E L Q U R V I
E B P A C H A N G E H K M T E W Z X A T
V Y U P T U N T C J E N S O Y D P H B R
E X I A M A P P R E C I A T E C B D X A
D R B G O D D Y C N E T E P M O C A E P
A D I G T N E V I S N E H E R P M O C F
I N T E G R A T I V E S G L Z Q T I V K

Turn overleaf to know how to play.
Solution on the last page

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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."

Word Search Puzzle - How to play

The puzzle has a list of words on the left side. Just find the given words in the jumbled letters and encircle them with a pen or pencil. The words can be found spelled - horizontally, vertically, diagonally, forward or backward and will always be in a straight line.

FROM THE EDITOR

Assessment has now become a very important part of Learning.

This statement might evoke some surprise – was assessment not always an important part of learning? Yes it was, but now it has assumed another dimension: the learner has a stake in her own assessment by participating in the process. Earlier, there was classroom teaching, then one went back and did homework, learnt what was taught (sometimes just by rote, hoping that things would one day become more intelligible!) and there were the bogies of tests, exams, marks, - and worst of all – even ranking. I can recall the system in my first school: a special assembly where names would be called according to rank and one had to go and stand – in front of the whole school.

That methodology was wonderful for the winners, humiliating for the losers, with the added disadvantage of labelling, fear and stress and, of course, practically no permanent learning being achieved. Most importantly, the intelligences one did possess could go unnoticed in the glare of the attributes one did not have, mainly a good memory.

Fortunately for all, there has been a sea change in assessment methodology and assessment has at last been linked to the learner's own abilities, which can be varied. The free size, hit and miss methods have been discarded for more intelligent forms of assessment and we have the twin benefits of formative and summative assessments which make the whole process participative and transparent.

With the introduction of Continuous and Comprehensive Evaluation (CCE) and the system of formative and summative assessments, the Central Board of Secondary Education (CBSE) and most other examining bodies have cast the net farther, with great success. These reforms have taken into account the skills that will be demanded of learners in later life because students are examined on learning from multiple sources, not just the textbook or what is said in classroom lectures. It has become more comprehensive and therefore more equitable.

Some vital aspects of learning, so evident today as to become commonplace, were in the past ignored. Two of these are – teaching is not completed until learning has taken place and the second, different learners have their own ways and speeds of learning which no single examination can possibly be comprehensive enough to test. The National Council of Educational Research and Training (NCERT) Sourcebook on CCE states that CCE should 'take care of the student's pace of learning in all aspects of personal growth' and that its essential principles are 'flexibility, functionality, accountability and economy.'

I think the keywords here are 'pace of learning' and 'personal growth'. Both these are unique to the individual and our examination system should, ideally, try to safeguard both. By dividing the academic year into semesters, the place of formative and summative assessments in the learning process has been entrenched – both are woven into the system and, further, learning progress is monitored rather than judged as was done in the past, often with deleterious results. Today, it has been generally recognised that learning occurs from different sources and in different ways and takes place in an equally varied way.

These reforms have been universally welcomed and teachers are now convinced of the merit of the new system. Formative assessment has ensured that judgement has been replaced by evaluation and is far less threatening and absolute than previous examination systems. The reader will see how unequivocally the contributors have accepted the new order and how flexible it has made their interactions with the students, both inside the classroom and outside of it. One can contrast the empathetic manner in which a teacher evaluates her class and encourages collaboration with the rigid binomial system of pass and fail that earlier threatened children, creating rivalry and competition.

In this issue, we have a range of articles recounting personal experiences of teaching with the goal of inclusive learning rather than a random attempt at throwing information at a mixed ability group, only some of whom could lick the system with others falling by the wayside. Teaching methodologies which recognise children as individuals and respect each child's contribution to the classroom's richness, which now seem a logical way of teaching, have ensured that every child learns at her own pace in an authentic way that ensures 'real life skills of observation, analysis, critical thinking and collaborative working' (NCERT Assessment Sourcebook). Readers will find that diverse aspects of assessment have been thoughtfully tried and objectivity is a key theme. Another important aspect of assessment, namely, reflectively constructed rubrics have been given a place in this issue.

Assessment and evaluation go hand in hand, though of course cause and effect are so closely intertwined that it is difficult to know where one ends and the other begins. It would be impossible and perhaps useless to have an educational system in which assessment was completely removed. But it can, and has become less of a bogey. Children need to know what they know, not what they don't, and practitioners need to know whether what they taught realised its goal. That has now become of primary importance in the new way of looking at testing and we at Learning Curve hope that the articles in this issue will throw light on the changes.

We look forward to your criticism – assessment, if you like! – at our attempts and help us grow.

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Bibliography: 1. NCERT Assessment Sourcebook, 2. National Curriculum Framework (2005)

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SECTION A

PERSPECTIVES

ASSESSMENT FOR EMPOWERMENT

Indira Vijaysimha

While thinking about the topic of assessment I recalled a story from the Ramayana as told by my grandmother. Since I am recalling this story from memory, allow me at the outset to apologize to scholars of the Ramayana if the way I remember the story does not quite find a match in literature. Without digressing further let me tell the story and then follow it up with why I feel it is relevant in the context of educational assessment.

In their search for the abducted queen Sita, a group of Vanaras reached the southern seashore. Across the sea was Sri Lanka, and in order to find Sita the sea had to be crossed. Gazing on the vast expanse of water, the Vanaras considered the possibility of leaping over the waters. Members of the Vanara group began to estimate their ability to undertake the task at hand. Some of them said they could leap quarter the distance and others said they could manage half the distance. Angad, the Vanara crown prince then stepped forward and boldly declared that he would be able to leap right across, but would not have the strength to return. As the Vanaras stood uncertain of their next course of action, their wise old advisor, Jambavan spoke to Hanuman and told him that he alone had the capacity to leap the ocean and also return with news about Sita. Hanuman proved equal to the task and many further events unfolded before Sita was brought back.

To my mind, this small sub-plot within the epic tale of Ramayana, can be seen as an example of how a wise use of assessment can serve as a tool for empowerment. The individual Vanaras were seriously engaged in self-assessment of their capacities and in general they seemed to be realistic in this as their claims were not challenged by Jambavan. However, in the case of Hanuman, who remained silent and unsure of his abilities, Jambavan was in a position to make a true assessment of his abilities and thus empower him to undertake the daunting task of crossing the ocean. How I wish that as classroom teachers we are expected to use assessment solely as a tool of empowerment – following in the steps of Jambavan!

However, most of us use assessment unthinkingly since it has become a naturalized and inevitable part of teaching. More often than not assessments are also used to evaluate students and grade them or sort them as being more able or less able in some given domains or some set of skills. In common parlance, assessment and evaluation are used synonymously indicating our general tendency as teachers to categorize students and label them. On many occasions the larger system requires teachers to do this and to clearly tell other stakeholders – parents, school boards, employers about the extent to which some desired knowledge or skill has been acquired by the pupils. A range of assessment and evaluation tools are routinely used by teachers and, although they are designed to test performance in specific areas the reports about these performances connote other meanings as well.

Students themselves tend to read a great deal more than warranted into performance assessment which is usually reported in the form of marks or grades. They tell themselves things like, “I am not good at mathematics!” instead of something like, “ I don’t seem to have understood

how to calculate compound interest" or , " I am the best in English", instead of "How could I make my essay interesting enough for my classmates to want to read it." or "I know all about this topic in science", instead of, "This is really interesting! I wonder if this is how it would work in…." The broad general conclusions that they draw from their test/exam grades are usually not focused or specific enough for them to take realistic actions to enhance their learning or improve their abilities in desired directions. Surprisingly teachers often come to similar conclusions about students based on test performances. This leads to students being labeled as high or low achievers according to perceptions that have little objective basis.

There is a fair amount or evidence from research suggesting that an emphasis on letter or number grades to assess students is counterproductive. Firstly, research indicates that "grade orientation" and "learning orientation" tend to pull in opposite directions and that students may end up using various shortcuts in order to get high grades instead of focusing on genuine learning. Secondly, grades tend to reduce students' preference for challenging tasks and thirdly, grades tend to reduce creativity.

There are more problems with grades – this time in terms of the reliability and validity of the grades awarded by teachers in the course of their classroom teaching. I worry all the time about the fairness with which I grade student work. No matter how much time I spend devising an "objective" set of criteria for grading, it ultimately boils down to my interpretation and subjective response to what the student has written. On the other hand a strictly objective type question paper does not allow me as a teacher to gauge the depth and quality of the students' engagement with ideas and their ability to persuade me of their point of view. Unlike, the wise Jambavan, I am never completely sure of my assessment about a students' work. I am acutely aware that it is quite possible that someone else may have assessed differently. I find myself picking up students' work and assessing it again a second time and feel vastly relieved that I have awarded the same grade this time too. How would the student assess her own work? Would she agree with my assessment? These are questions that rise up as I plod steadily through end semester correction work – a painful and inevitable part of every teacher's life I suppose. I envy Jambavan for in my mind's eye I see him indulgently looking on as the brave Vanaras self-assessed their individual abilities. Next I see him patiently helping Hanuman to arrive at a realistic and empowering assessment of his enormous capability. How happy the outcome! All the Vanaras surely cheered as Hanuman leaped across the ocean.

Yet, in the classroom I become aware of the tensions that assessment creates, even if it isn't meant to stratify students. Students seem to become distrustful of the teacher or even worse of their own abilities when they receive a low grade. "It's only this little essay/assignment/exam! It is not a comment on anything else. You are just as precious and valuable and wonderful as a person regardless of this stupid grade!" This is what I feel like telling the students and sometimes do tell them that. Grades create tensions between students too and then I feel like saying, "Hey, listen the purpose of learning is far greater than grades. Surely you can learn more from each other by cooperating instead of competing." Sometimes I think students understand this and at other times I think they get too focused on the grades and that diminishes their joy of learning.

Another difference between what Jambavan did and what we teachers often do comes to mind. Jambavan did not assess performance – there had not been any leaping exam for him to do that. Instead he assessed competence, based

on his observations and interactions with the Vanara braves. When the time came he used his assessment to enable and empower, not to dishearten and de-motivate.

Basil Bernstein, one of the most powerful theorizers about education distinguished between what he called the 'performance' and the 'competence' models of pedagogy. In the performance model the focus is on the specialization of subjects and skills and learning is structured in terms of selection, sequence and pace. The learner's performance is graded and stratified and evaluation is product based with emphasis on what is missing in the product. The pedagogy in the competence model is more learner focused, taking into account existing competences and prior experience and learning is based on enquiry through projects, a range of experiences, and sharing of experiences. Evaluation is process based, with the emphasis on the learner's progress.

As already mentioned research evidence clearly points us away from the type of grading and assessment practices associated with the performance model. In the Indian context, the NCF 2005 advocates a shift away from the performance model and towards the competence model as does the RTE act which talks of child-centered pedagogy. Such a model will necessarily involve a different set of assessment practices and a much greater autonomy for teachers and institutions.

The move away from performance assessment through award of number or letter grades does not mean that teachers need to give up the process of gathering information about student's abilities and competences and of communicating that information. Rather, possibilities for more meaningful and constructive forms of assessment open up. These include narratives (written comments), portfolios (carefully chosen collections of students' writings and projects that demonstrate their interests, achievement, and improvement over time), student-led parent-teacher conferences, exhibitions and other opportunities for students to show what they can do. If I remember my grandmother's telling of the Ramayana correctly, she told us that Jambavan spoke to Hanuman about his past adventures and exploits and thus was able to provide an authentic assessment of his competence in a way that built Hanuman's self-confidence.

Am I using the story to conclude that we should go back to some ancient, mythical practices? I assure that I am not advocating for any such thing – the story serves as a convenient peg from which to hang some important ideas about education and assessment. Stories have a curious power to serve as productive metaphors, but that is the subject for another essay to be written some other time!

"It's only this little essay/ assignment/exam! It is not a comment on anything else. You are just as precious and valuable and wonderful as a person regardless of this stupid grade!"

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ASSESSMENT FOR LEARNING

Meghna N. Kumar, Vishnuteerth Agnihotri and Rahul Venuraj

Traditionally, assessment at the school level has been rote-based, with very little focus on understanding or application of concepts. We find this to be true, especially in India, based on our analysis of school papers. Questions such as 'What is photosynthesis? Explain with the help of a neat and labelled diagram.' are commonly found in school papers, and do not distinguish between a student who has understood the concept and a student who has simply memorized facts. Unsurprisingly, when you ask a person about what they learnt in school, a very common answer is ''Well, I've forgotten most of it…"

An obvious reason for the prevalence of such assessments is that they are easier to build and score. Another reason is that rote-based assessments may have served the needs of the system in the past. However, they are completely inadequate for the skills needed in today's world. We need to create critical thinkers who are able to address the challenges of a rapidly-changing world. Real learning, i.e., conceptual understanding and the ability to apply and analyse information drives innovation – a crucial need in our society. There is, thus, a disconnect between what is needed in the world today, and what our system of education is geared towards producing.

Assessments that are comprehensive, focusing on key ideas that form the foundation of learning, are essential to changing how concepts are handled in the classroom. Moreover, it is universally accepted that learners will acquire a skill sooner, if given frequent feedback about what they have done, while they are doing it. Imagine that you're teaching a child how to swim – the natural method of teaching would involve constant monitoring and giving feedback necessary for her to learn to swim. The notion of instructing a child on how to move her arms and legs on day 1 and then directly checking whether she has learnt to swim on day 7 may seem quite bizarre. Yet, this is what occurs in our classrooms. The constructive loop of instruction, evaluation and feedback never seems to occur, as most assessments take place at the end of a unit, not while the unit is being taught.

Formative assessment, or assessment for learning, is where real-time feedback from students is used to modify instruction in the classroom and can help teachers understand exactly what the students are learning, so that an adequate response can be given immediately. Currently, formative assessments are often done in the form of field trips, quizzes, essays, projects, etc. While these are important, their end goal must be to reveal evidence of true learning. For example, if students are given the task of building a magnetic toy, they should also be required to give a documented explanation of how the magnets interact, as well as the reasons for such observations. Without the latter part of the task, students may fail to integrate what they have learnt with their observations or practical experience. In many cases, the activity is done for the sake of doing something new, rather than to seek information about what the student has learnt. While fun is vital to the process of learning, such tasks fail to help either the teacher or the student in the entire process.

An ideal formative assessment should have a set of granular, engaging questions that search for true learning within a concept. It should give the teacher a clear view of how learning is progressing, with details of specific areas that need more focus. The first challenge in building such assessments is that they need time, effort and expertise. For instance, in the topic of Light, making a list of key ideas allows us to distinguish the ideas that reflect true understanding versus the information that may not really affect how students learn (shown in Figure 1).

Key ideas that should definitely be tested
Light travels in a straight line.
A beam of light can be reflected using objects.
We see objects when light reflects off objects and enters our eyes.
Important to know, but not essential to test
Light is composed of different wavelengths.
The Sun is a source of light.

Figure 1: List of key ideas

However, in spite of having this list, the ability to make discerning questions should not be taken for granted. For example, when we compare the two questions shown in Figure 2, we can see that item (i) fails to check for understanding while item (ii) can glean information about how students think and is very helpful. (Do note that item (i) is actually faulty - all the answers can be correct!)

(i) What do we need in order to see an object?
A. source of light
B. an object
C. eyes
D. all of the above

(ii) Rachna is in a room that has been made COMPLETELY DARK. No light enters the room. Will she be able to see her hand in front of her?
A. No, because light has to enter her eyes for her to see her hand.
B. No, but she can see objects that are either black or a shade of gray.
C. Yes, because her eyes will get adjusted to the total darkness after a few minutes.
D. Yes, because light from her eyes will fall on her hand and reflect back to her eyes.

Figure 2: Comparison of two items on the same idea

The second challenge is that feedback from formative assessment should be available to the teacher as soon as possible, with the least possible effort, so that it can be used to drive instruction and close the loop efficiently. In most cases, given the high student-teacher ratio and multiple responsibilities of a teacher, there is not enough time to do this satisfactorily when done manually, especially with open-ended questions. Well-designed multiple choice questions (MCQs) supply a neat solution, which can be scaled up to high student-teacher ratios.

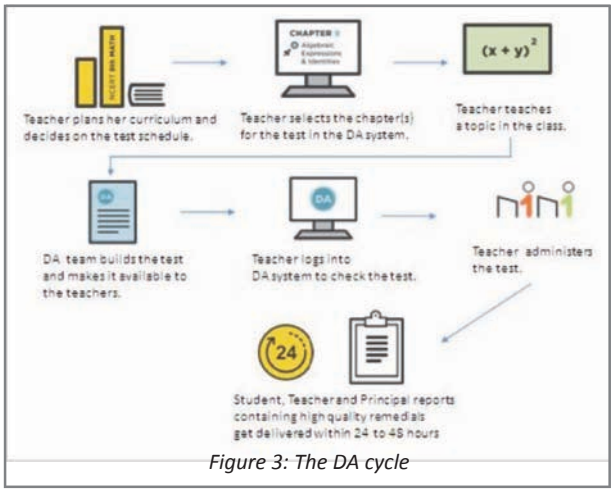


Figure 3: The DA cycle

One of our offerings, Detailed Assessment (DA) tackles both the challenges of formative assessments by using a set of sound, relevant and granular questions within a particular topic and providing feedback on the test within a short span of time, shown in Figure 3. Consider the following scenario: A teacher decides to conduct a test on fractions on Monday, while she teaches the unit. She continues teaching on Tuesday, and by Wednesday, she has detailed reports on how her students are doing within the unit, which allows her to make changes to her method of instruction, if needed. The administration and analysis takes place within 3 days, with the teacher having to spend only about an hour or two of her time. If done manually, an equivalent exercise would easily take a minimum of about 3 days of her time!

Part of a test on fractions and decimals for class 7, is shown in Figure 4. The questions are designed and put together in such a way as to

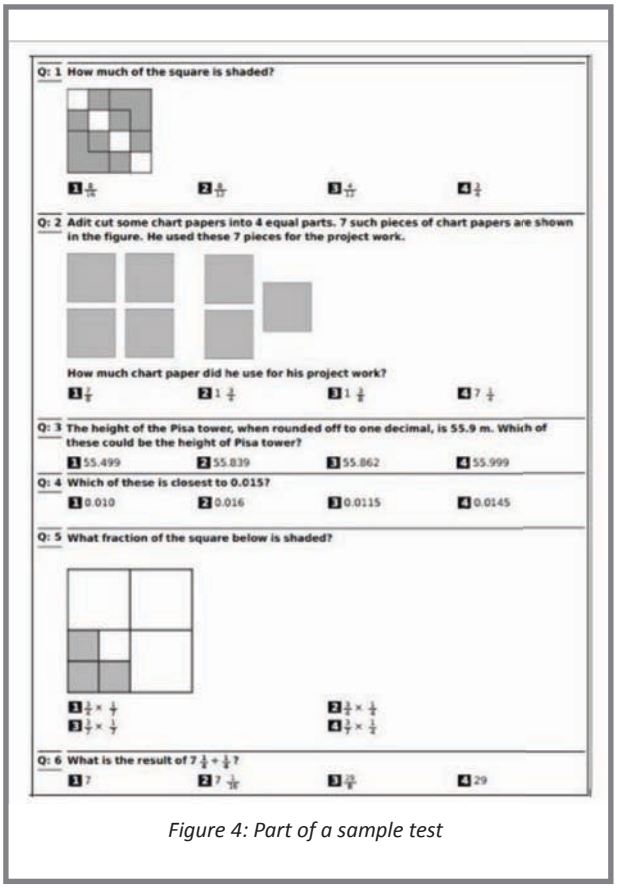


Figure 4: Part of a sample test

reveal important information about how students have learnt and internalized concepts linked to fractions and decimals.

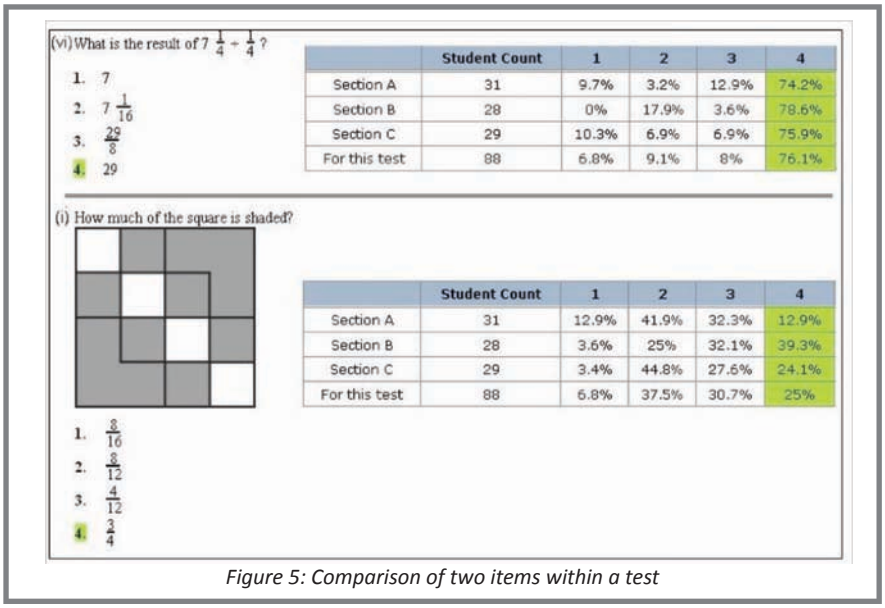
The reports contain information in various forms –Figure 5 shows the student responses for two specific items from this particular paper. We find that a whopping 76% of the students have chosen the correct answer in item (vi), which checks whether students are able to manipulate fractions using a standard procedure. Contrast this with the performance on item (i), which checks for a deeper understanding of fractions - only 25% of the total students have chosen the correct answer. This insight lets a teacher know that the students from this particular class need help in understanding the fundamental meaning of a fraction. Using such examples, we often find that students are comfortable with procedural questions, and yet, may not truly understand what they're doing.

The general class performance on the test, shown in Figure 6 also helps a teacher gauge overall levels of learning within her class.

Such information can help the teacher get a quick idea of where her class stands, but when checked in tandem with the detailed analysis, it can act as a powerful tool for a teacher. The detailed analysis also includes a misconception report for some questions as shown in Fig. 7.

The conveniently short time frame within which such tests and reports are made available to the teacher empower and enable her to devote more time to teaching within the classroom. However, the true strength of DA lies in the quality of questions being tested. While DA has harnessed technology to the benefit of the system, it is quite the opposite of dumping trivial and unhelpful questions on to tablets or computers. The questions and reports of DA are leading to changes in the way topics are being taught in classrooms. Some teachers have shared personal accounts of how the questions helped them understand some concepts better, thus aiding them in planning their instruction. Additionally, DA is effecting change at a more systemic level – e.g., a school in Mumbai decided to change their curriculum based on our analysis to one with a higher focus on conceptual understanding. A similar instance occurred in a state board school, when we analysed their curriculum prior to the DA program, and found that their textbooks emphasized greatly on unnecessary facts, leaving little space for key ideas within various concepts. Based on the initial DA analysis, this school agreed to change their textbooks to a national level textbook closely aligned to the National Curriculum Framework, which has resulted in more time for the students to absorb concepts, rather than memorize facts.

Teachers and school principals have accepted that well-designed assessments can play a role as important as that of the curriculum or lesson plans.



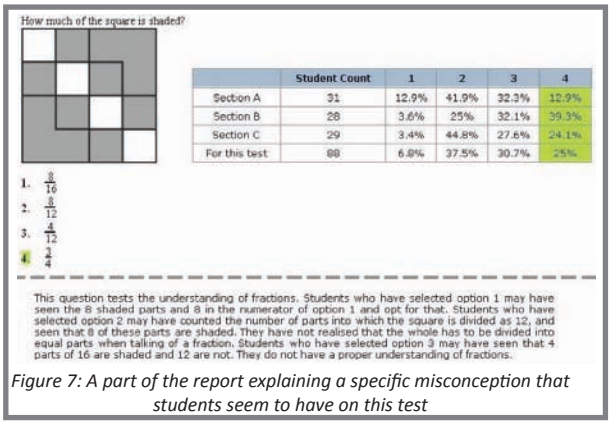
	Student Count	1	2	3	4
Section A	31	9.7%	3.2%	12.9%	74.2%
Section B	28	0%	17.9%	3.6%	78.6%
Section C	29	10.3%	6.9%	6.9%	75.9%
For this test	88	6.8%	9.1%	8%	76.1%

	Student Count	1	2	3	4
Section A	31	12.9%	41.9%	32.3%	12.9%
Section B	28	3.6%	25%	32.1%	39.3%
Section C	29	3.4%	44.8%	27.6%	24.1%
For this test	88	6.8%	37.5%	30.7%	25%

Figure 5: Comparison of two items within a test

	Question No.	1	2	3			Average
Understanding fractions	% of students answering correctly	24	55	34			38
		4	5	6	7	8	
Operations on fractions	% of students answering correctly	69	59	76	17	14	47
		9	10	11			
Word problems involving operations on fractions	% of students answering correctly	66	34	62			54
		12	13	14			
Understanding decimals	% of students answering correctly	52	28	3			28
		15	16	17	18	19	
Operations on decimals	% of students answering correctly	55	24	59	17	10	33
		20	21	22	23		
Recurring decimals and rounding off decimals	% of students answering correctly	72	83	24	31		53

Figure 6: Overall performance of the class on various sections of the test



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Section B	28	3.6%	25%	32.1%	39.3%
Section C	29	3.4%	44.8%	27.6%	24.1%
For this test	88	6.8%	37.5%	30.7%	25%

Figure 7: A part of the report explaining a specific misconception that students seem to have on this test

We need to ensure that assessments are being used to the best possible extent by incorporating them within the classroom in a seamless manner, with a shorter cycle of administration, which keeps alive the focus on assessing conceptual understanding throughout the year, rather than being an exercise that occurs only twice or thrice in the entire year.

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WHAT IS THIS THING CALLED ASSESSMENT?

Sujatha Rao

In 1976, A F Chalmers first published a book intriguingly titled 'What is this thing called Science'. In that book, he attempted to introduce to readers modern views about the nature of science. As Chalmers explained aspects of scientific thinking such as experimentation, falsification, Kuhn's paradigm and the Bayesian approach, it became evident very quickly that the nature of enquiry into "scientific" knowledge is, if anything, singularly complex. We find ourselves in quite the same boat when we begin to unpack this thing called "Assessment" – singularly complex and often reduced to a singular notion.

What is assessment in education? It can be simply defined as a process of making a judgement about an individual or an educational programme through careful examination of evidence. Assessments are important as evaluation tools because they can help answer fundamental questions about educational processes and their outcomes – what are we teaching in classrooms, how are students engaging with learning materials, what knowledge is transacted in school settings, how do students internalize and apply these learnings, how are students developing as concerned and informed citizens of the world? Assessments can be formative evaluations, the continuous on-going part of day-to-day teaching where teachers modify their activities with students; they can be summative evaluations helping teachers identify and evaluate what a student has learnt at the end of the year; and they can also be authentic in that they seek to evaluate how students apply learning over time. Seen from that perspective, assessments are a continuous process of evaluating educational processes holistically.

The formative, summative and authentic aspects of assessment hint both at its holistic nature as well as the complexity of the evaluation space within education. Unfortunately, the development of large formal systems of education, along with the institutional and organisational settings in which schooling occurs, have served to simplify assessments to a much more narrow and instrumental notion of student learning.

As countries around the world began to spend more on public school systems, greater calls for accountability for that expenditure began to emerge. This call for accountability was particularly loud under notions of 'new public management' (Ferlie Ashburner, Fitzgerald and Peetigrew, 1996) that demanded schools be accountable for student performance. This led to education boards seeking to control (Rowan, 1990) the process of schooling through standardisation - standard curriculum, standardised teacher training programs, standard text books, and even standard teaching-learning materials. The central notion of this control strategy was that through standardisation of inputs, standardised outputs or outcomes would emerge – in this case, evidence of student performance and learning in schools.

The standardisation of these input measures helped policy makers, education boards and curriculum developers also develop standardised tests at various levels of the schooling process – for particular subjects, in particular classes or

grades, thereby enabling evaluation of teaching and learning to happen at both individual and collective levels. For example, an individual student in the fifth standard would sit for the standardised test in mathematics with all the other students in her class and with students in the fifth standard across the state and the country. Not only could her individual performance in the subject be evaluated against curriculum guidelines set for the fifth standard in mathematics, her performance could also be evaluated against her other classmates, with students across the country sitting for the same class five test and internationally with students in other countries in the same class. Consequently, poor performing students, poor performing classes, poor performing schools and poor performing nations could all be evaluated simultaneously. Therefore, teachers could be made accountable for poor performing classes, principals and school boards could be made accountable for poor performing schools, district boards/education departments could be made accountable for poor performing districts and states and finally national educational bodies could be made accountable for poor performing nations. The appeal of the standardisation and control strategies were clear and logical. With such pressures for accountability, quality education would emerge.

The impact of such measures is of course quite contrary to such expectations and starkly evident to us today. The standardisation drive has resulted in a lack of teacher autonomy in the classroom and has made the individual learner invisible in the education system. It has led to the inability of students to follow their own pace of learning and to the introduction of de-contextualised curriculum that have little meaning to the lived experiences of the student. This has also resulted in an almost singular focus on completing the curriculum and teaching to tests, often purely summative assessments, resulting in rote learning and students living under constant stress of examinations. The result has been students feeling increasingly alienated at and from schools. Further, private institutions focusing on "tutoring" students for excellence in examinations have also edged out the non-school space and time of the child leaving her as little more than a body moving from one institution to the other in the quest to perform well in tests and examinations. For all its much touted attempts at bringing about accountability to the public system of education, the control strategy has yielded nothing more than a dysfunctional system, with poorly motivated and trained teachers, contextually irrelevant curricula and deeply disinterested and burdened students.

So where does that leave us with the notion of assessments? Perhaps a reconceptualising of assessment becomes essential –as a way of evaluating fundamental questions about education and as a means of evaluating those educational processes that either enable or hinder students from participating in meaningful learning. Let me explain this further. At the heart of assessments should be the relentless probing of the most fundamental outcome of any educational system – the opportunity for students to engage in meaningful learning. Assessments should evaluate the structure and functioning of all the processes that go into either enabling or inhibiting students from engaging in such learning. For example, a student's ability to access a school needs to be assessed. But access here needs to move beyond the availability of a school within proximity of habitations. Assessment of access should include evaluating a child's home life and the opportunity and encouragement that the child has to go to school, the availability of transport to reach school, the ability of the child/parent to pay for public transport to reach school, the ability of the family to send children to school – all of these have to be evaluated.

Once access to school is evaluated, access to schooling needs to be assessed. Assessments should include evaluation of school climate, the physical environment of the school, the socio-emotional space created in schools for meaningful learning, the availability of contextually relevant and meaningful curriculum in a language accessible to students, the motivation and commitment levels of teachers and the autonomy of teachers to work with students individually, the ability of students to participate in self-paced learning, the level of community and parental participation, and the opportunity that students have to apply their learning outside of school . Meaningful assessment of these factors helps identify those processes that foster a healthy learning environment in schools and those that act as barriers for effective learning leading to authentic assessment of children (Puckett and Black, 1994).

How can such changes in the concept of assessment occur? First, policy measures that bring about examination reform are essential. Such policy measures are necessary if assessment and teaching need to move beyond 'teaching to tests' and continuous evaluation of student learning is to occur. We could take a leaf from other countries such as the Nordic nations who have for years restrained from testing students class after class. Instead, they have focused on teacher professional development and child centered teaching in classrooms and the evaluation of these practices. Despite refraining from class room based testing of students, children from Finland perform exceptionally well in international tests such as PISA. Policy measures that focus on the continuous professional development of teachers need to be introduced in our country to help strengthen core processes of teaching and learning in schools. Second, institutions that provide academic support to schools in our country should be strengthened and they should help schools assess factors most important to the delivery of quality education. Third, we need a social change in the concept of education – to move it beyond rote learning and performance in tests to an acceptance of education as building the core capabilities of human beings. Fourth, we need appropriate tools to evaluate schools holistically and effort would need to be made to develop, test, evaluate and implement these tools across the country.

Evaluation mechanisms are necessary to judge quality of education. However, the singular focus of assessment as learning outcomes judged through tests and exams have led policy makers to neglect an assessment of the holistic purpose and meaning of education and the processes that make this possible. What is this thing called assessment can be answered when we ask three fundamental questions: what is assessment for, who is it for and what does it measure? If we are able to clearly and coherently link answers to these questions with the aims and purposes of education, assessment becomes meaningful. Else it remains nothing more than a supervisory regulation of children's performance in tests as proxy measures for quality education.

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ASSESSMENT, MEASUREMENT AND EVALUATION

Bhavani Raghunandan

There has been so much said and written about assessments that anything more written about it will be superfluous. Nevertheless an attempt shall be made at giving the topic a different perspective. Needless to say that assessment is part of the 25% that most teachers detest about teaching. But it happens to be an integral part of the teaching learning process and any educational system or process.

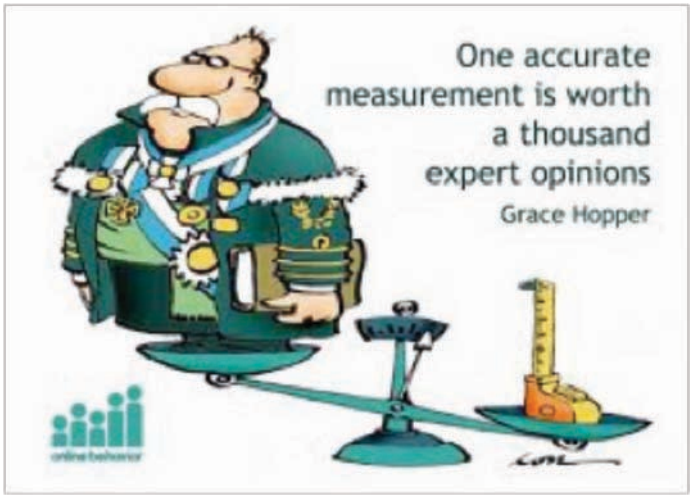
I found Dr Bob Kizlik's article in ADPRIMA very interesting-he starts by quoting 'anything that is not understood in more than one way is not understood at all'. So he goes on to say that most of us would find it difficult to explain what we mean when we say 'understand'. It is very often inferred from responses to MCQs, problem solving tests etc. Yet a year or less after solving these tests most students forget even the fundamental concepts of what they thought they had 'understood'.

So it occurred to me that measurement, assessment and evaluation which form the bases of the teaching learning process needs to be 'understood' correctly and in more than one way.

Among the many definitions that I have been reading there are some that appealed to me which I shall share with you.

Measurement is the process by which attributes are determined—it is only a process of collecting information.

This data needs to be processed to make meaning out of it.



Assessment is a process by which the information collected is related to a known goal or objective for which it is designed.

What can be assessed are knowledge , skills and attitudes including behavior and aptitudes. Knowledge is traditionally gauged with the help of tests of various kinds. Dr Bob says that there is an underlying assumption that there is a relation between what he/she does in relation to what he / she knows. What one has understood is more difficult to assess and is complex. However skills are easier to assess and they can be improved with practice while understanding cannot.

The university of Toronto defines it as the process of gathering information from a variety of sources that accurately reflects how well a student is achieving the curriculum expectations.

It follows that a diagnostic assessment is used at the beginning to determine a starting point for teaching, the formative assessment is done throughout the teaching of a lesson to give feedback to the students for improvement—it

has to be built in to the lesson plan and design with the learning outcomes in mind and the summative assessment is at the end of a lesson to gauge how much a student has learned.

Evaluation is the most complex term to understand. It is a 'value' given to the learning based on some criteria, merit and worth according to the teacher and the expected learning outcomes of the lesson .

Assessments as mentioned earlier have ideally to be built into the lesson design and plan. Unfortunately we notice the following issues in our system

a. The learning outcomes /expectations are not clearly thought out.

b. Therefore the assessment pattern is not part of the lesson design

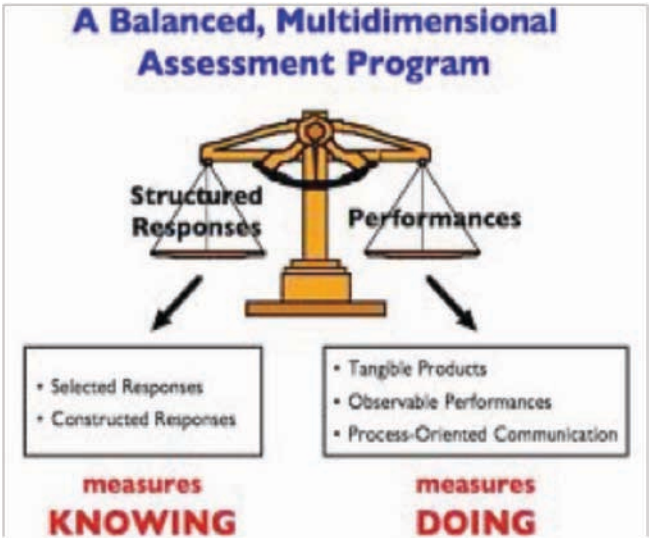
c. Assessment itself is not well designed

d. Therefore there is often no validity- the test is not testing what it is meant to test

e. There is no reliability as comprehension of the words used in questioning varies

f. Not enough time is spent on auditing the assessment

g. The assessors are not sufficiently trained



We very subconsciously justify these with lot of 'reasons'

a. We are dealing with large numbers

b. There are so many 'lessons' to be taught

c. We are prisoners of time

d. We are dealing with students with diverse abilities and backgrounds

While it is a 'yes' to all of these—one of the solutions could be to spend more of 'our time' planning lessons, including valid assessment designs which test the learning outcomes that also need to be planned before the lesson is taught. Unfortunately we seem to have an idea that the 'spare' time in school, the short weekends and the vacations are 'our time', all of which is to do things which are 'relaxing' and what we have always wanted to do—all the while wanting to be labeled "professionals"! This needs to be examined.

Research reveals some interesting facts :

a. Students are assessed on matters which are easy to assess them on so there is over emphasis on memory

b. Students focus on topics which are assessed at the expense of those which capture their interest

c. Good performance does not mean that the student has 'understood' the concepts

d. Students concentrate on assessments that are graded. Grading drives learning

e. 'Successful' students spend more energy in class getting clues as to what topics are going to be assessed than actual study.

These are points that every teacher has actually observed and knows from experience. We also know that we are guilty of some of these ourselves knowingly or unknowingly. We have all said while teaching- "this assignment will carry 'x' marks –or this mark will be taken into account for the report card—this is going to be

graded etc". We have very often said –"now pay attention to this-it is a very important concept, a sure question for the exams"! We also sometimes set a paper depending on the time available to correct it. We are also capable of setting an easy if we were to be assessed/ evaluated by the results we produce or if we want the class to feel good before a summative exam.

Coming back to the first of the issues—large numbers. When there is an assessment of a large group a few things get left out in the assessments

a. Testing of specific skills – as there is no time for individual observation/ measurements of the skill

b. Lack of time for individual feedback

c. Discussion after formative assessments for effective learning to occur

Some of the possibilities that we could examine are

a. One could divide the class –one group performing the task required to demonstrate the skill which the teacher could observe, while the other could take up a writing assignment which could be assessed later-or say in a practical class in science-one teacher taking a viva the other observing practical skills

b. After an assessment we could make a list of categories of mistakes students have made and announce it to the class, and later call specific students to the table and tell them some specific points they need to pay attention to.

c. As for dealing with mixed ability groups –turn it to everyone's advantage by using peer assessments , but first give clear guide lines for assessing

Let me clarify that with experience, many teachers do some or all of these so this is not to imply that it is a new idea.

In order to make assessment efficient and effective for large groups or masses we could make testing standardized. This will take care of the routine knowledge and these tests can also be administered by any one. The answers can also be analysed by anyone as the answers are unambiguous . These can be in the form of Multiple Choice Questions, short one-word answers, fill in the blanks, match the following etc.

But when it comes to skill testing like reading skills we tend to get a little confused. Earlier we went by just experience—today even these have been researched and analysed and rubrics have been developed to expand on what we mean when we say 'he is "good" at reading or writing or arithmetic. So it is easy for even an inexperienced teacher to understand what is meant by 'good' in reading and grade the student using a common standard. This makes for reliable testing for large groups.

Rubrics are multi dimensional sets of scoring guidelines that provide consistency in assessments. They provide a specific measurement system for each task.

- Rubrics make assessment more efficient and quick and removes vague subjectivity
- The parents understand what the grades mean
- They demystify grades—(should formative assessments be graded at all is yet another issue!)
- Student can see what to look for to succeed and can do self assessment
- Teachers' expectations are made clear to the student and parent

These also have their draw backs- in large groups the data entry takes a long time. Teachers do not get to use discretion—assessments are done as per rules. As Hattie J says in one of her articles, Expert teachers guide learning by identifying the ability, experience and background of their

student , monitoring their learning and providing feedback to them. Moreover, they have an affective connection to their students and the content they teach."

Their assessments are done based on all of these—somewhat self referenced rather than norm or criterion referenced. They assess the learning of a student based on how much he could do earlier versus what he can do now and based on his individual competency. Rubrics remove that 'discretion' from these natural teachers.

All said and done we in India have to work around these issues. How best we can do it is the challenge – but assess we must. We are in transition-the various Examination Boards have been working on different systems like Continuous Comprehensive Evaluation and such like trying to find some system that will suit the needs of our country and I am sure that if we are looking for it we will find it.

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ASSESSMENT, LEARNING AND THE CURRICULAR LADDER

Rajni Divya Kumar

I home schooled our son, Neel, for a year between Montessori and class one. A combination of factors led us to do this; Neel's allergies, his unhappy experience of schooling, and we couldn't find a school we liked nearby. Also having been a teacher for 10 years in an alternative school I found myself thinking why not give home schooling a try.

Home schooling Neel turned out to be very different from teaching a class in a school.

In school, my mandate was to cover a certain amount of ground, which was the agreed -upon curriculum. My job was to locate students on the curricular ladder (of conceptual knowledge, skills, ways of investigating the world etc.) and help them move up rung by rung. I needed to ensure that there was active learning and that whatever we were doing contributed to the overall well-being of the child. I used observation, conversation, written work and testing, to figure out where each child was on that ladder. There were divergences in what children learnt, but on the whole we kept our sights on the curricular ladder.

With Neel, I was primarily concerned with whether he was learning actively. I was not much concerned that he was learning equally in all directions. Rigor could be achieved by offering him experiences that built on his initiatives and enthusiasm. My intuitive sense was that patchiness and unevenness in the learning of subject matter could be addressed, if necessary, later on. What seems very difficult to unlearn is a notion of oneself as "bad" at something, the sense of hopelessness and "stuck-ness" children develop with a particular subject or domain.

Learning at Home

So my approach was mainly to see what interested him. There were things that he clearly wanted to do. He pored over animal books, which developed into questions of how animals are different from each other. He found a book which described each phylum with many pictures of animals in each group and he wanted me to explain how each phylum was different from another. This led to two directions. One was towards evolution, which went way back into the origins of the earth, tectonic plate shifting, volcanoes and dinosaurs. I guessed he was going to enjoy studying how animals adapted to different environments. I located David Attenborough's "The Living Planet" on Youtube. He was riveted. Meanwhile his father was taking him bird-watching on the weekends.

Sometimes I initiated readings, asked questions, and taught him number games. Some of these would engage his attention, especially when we tried to count up to large numbers, first in tens, then in hundreds and then in thousands. Word building was not a great hit. We would do some maths in the contexts of shopping and cooking, growth charts, medicine doses, car distances and speeds.

He hardly wrote that entire year. He had had a very bad time with writing in school. Though an enthusiastic and vocal learner, the fine motor control required for writing had not developed adequately. His teachers had insisted he write and we had coaxed him at home. On hindsight, this had been a mistake. He had simply not been ready to write, it was not within his zone of proximal development, so to speak. He had spent huge amounts of time doing something that

was too difficult for him, rather than spending it learning something which would have made him feel capable and energised.

But that year he read a lot. He was reading books meant for older children. This was also because he had large amounts of unstructured time, with access to books, and his neighbourhood friends were unavailable because they were in school.

If assessment means trying to find out where the child is vis-à-vis a predetermined quantum of curriculum, then I did not assess my son. The Latin root of assessment is "assidere" which means "to sit with" or "to sit beside". In this conception of assessment it seems to mean meeting the child where he is. Often the dialogue is the assessment. It is walking along with him on his journey of learning, understanding how he is thinking and figuring things out, what excites him, what frustrates him, extending his learning, teaching him things when he asks for them or seems to need them. My job was really to begin from his questions and curiosity and offer him experiences that from which we could build disciplinary ways of organising knowledge and investigating the world.

There were many surprising moments too, where I was the learner. We were discussing shapes, we were trying to see how a square could be cut into 2 triangles. Neel was asking, "Can you make a circle from a square?" I said that I didn't know how one could do that. Then he said, "Yes, we can. Take our dining table; it is a square with 4 corners cut off. Now if we keep cutting the corners and then again the new corners that are formed, and if we go on doing this, then the table will start becoming a circle!" Now that is clearly the kind of thinking involved in calculus.

The curriculum, a ladder or a network?

I remember a day when Neel (about 7 years old then) came back from school with some homework that involved addition of three digit numbers. He could add 3 digit numbers with his Montessori bead kit. But the worksheet seemed to require him to add the numbers the regular way, with the symbols for carrying over. Now Neel can already add 2 digit numbers in his mind, sometimes by decomposing, sometimes by regrouping, sometimes in other ways. He doesn't use the same strategy every single time, and I think for him, that's partly the fun of it. He can always tell you how he did it. Algorithms don't excite him. I'm sure there are some children his age, who like the predictability, the efficiency and the reproducibility of algorithms. They are excited by the power of algorithms. But Neel struggled with the sums. I could see him getting more and more frustrated, then he said, "I can't do this, I know how to do it already, it's too simple, it's boring." Then after a while, he said, "I'm no good at maths".

I understood the situation like this. He knew that it could be done by the algorithm but he was not ready to work with it yet. But then why did he make this leap and say, "I'm no good at math." What was happening here?

I said, "Let's do something you like in maths. What do you want to do?" He said the older class was doing averages. He wanted to find out the average age of everyone in the house. And so we had an enjoyable time doing that. I asked him what he thought an average was. He explained it to me. Then he seemed to have figured out we have to add up everyone's ages, and apportion the resulting number to the total number of people. This was no problem because all ages of people in the house were single or double digits.

Now why did he decide he was no good at maths? Is it because somewhere in our schooling system, there is a subtle message that following the prescribed route to learning something, climbing the curricular ladder, is the single way to learn? Now perhaps it is true that some things require previous knowledge/understanding, for instance it would be hard to argue that children can learn multiplication without a notion of addition. But does multiplication need a prior knowledge of subtraction? Why then do so many teachers and textbooks conceive of the curriculum as so much

of a ladder? Can we not think of the curriculum as a network with many beginning points and many pathways?

Now I have no doubt that Neel will figure out 3 digit carryover addition eventually. But he may not, if he begins to believe that it is more important than averages, or has to be figured out before he can get to averages. Why is it, that what the child can do and what he is already learning, does not matter as much as what he ought to be learning. And what does this message do, to his notion of himself as a capable learner?

I suppose one's notions of assessment flow from one's conception of the curriculum and of how children learn. Is learning a methodical step-by-step process, like climbing a ladder with evenly spaced steps? What children will learn seems to be quite mysterious, they can make leaps. The same child, who leaps, can also struggle with skills and learning, which other children are whizzing through. What I realised through home schooling is that when we force fit children into a lock step learning pace, "batch- process" them so to speak, we may miss out on what they are really learning because we are so pre-occupied with what they should be learning.

Now all of this raises some questions for our consideration.

1. What is my vision of the curriculum ladder like? Is it a single route, a wall built brick on brick, of concepts and skills? Or is my vision of the curriculum more of a network, or a map, with many entry points and many routes (with some sections that are ladder-like)?

2. Hence is my vision of assessment, to mark off the height where the child is, on that ladder? Or is my vision of assessment a dialogue which helps me choose learning experiences that feeds into the questions, excitement and initiatives of children.

3. Is our conception of the ladder curriculum merely an efficient way of organising learning for large numbers of students, or is it fundamental to how we think learning should take place?

4. If it is not fundamental, is there a different way of organising the curriculum that begins from children's questions and extends their thinking, skills, knowledge and ways of investigating the world, instead of focussing on even "coverage" in all directions?

5. Perhaps we can't think of organising the curriculum in any other way for the kinds of numbers we have in our classes. In this case is it not our bounden duty to inform our students that the ladder we have chosen is only for the sake of convenience? Is it not vital that children realise that there are many other entry points and alternate routes for learning. Wouldn't this take away the sting of failure, and legitimise other beginning points and routes (at least theoretically)?

I would propose that using the class 10 exam as a reason to opt for even "coverage" in all directions is a poor argument. In my opinion as a parent and a teacher, I would guess that someone who has taken initiatives in his learning, who has learnt to co-chart his own course, who can read, write and reason, is well prepared to learn anything in class 8. But perhaps what will also help us think through such questions is to return to the big one, "What is learning or education for?"

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SOMETHING TO PONDER ABOUT

Gita Bhalla

Assessments are closely related to observation. It is imperative for each teacher that along with her other skills, she learns to train her eye so that she has the practiced skill of a doctor. This observation is kept purely scientific. It is also known as phenomenological observation where one observes facts without mixing it up with opinion, feelings, previous knowledge, concepts etc. Observing how a child walks, talks, holds a pencil, picks up a fruit to eat, the size of his head, the structure of his body builds a picture of the child and gives you a story, far more important and accurate than any assessment will do.

When a teacher or parent looks at a child with loving interest, many questions get answered. You build a relationship first and then you make a perception. The mechanical or impersonal is kept at bay and you get many answers when you ask in your heart, who are you, what can I do for you and what do you bring for me. This is especially true in children on the autism spectrum where no assessment is quite enough to give you all the answers.

Then you begin to understand, both, the typical and the typological forms of the child.

What happens with this introspection is that we look at things as they are instead of jumping to conclusions.

When I enter a classroom, instead of finding children who are approached with what's wrong kind of look, to one which says how can I tell if this child were approached differently, like with supportive patience from my side, how would he do?

In fact, done the other way round, establishing an assessment score, slotting the child into a box can be dangerous at the most and misleading in the least. Children have shown to not cooperate on bad days and sometimes the performance varies with unfamiliarity of the material used.

Watch the doughnut, not the hole:
All children with disabilities have some developmental area which is not age appropriate. Like a child with cerebral palsy may have lags in the physical domain, but his social needs, his cognitive abilities and his sense of self may be like that of his normal peers. How damaging then is it to, provide him with a curriculum and interaction which is watered down or suited to a much younger child. So all children, are children first and the disability a part of them. This is something we must never forget in our attempt to define them.

Labels: An expert Susan Hall says, "Labels are dangerous when they replace a persons humanity and individuality, but they are invaluable when they provide the precise terminology to decide who needs what, when, where, why and how!"

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THROUGH A LENS OF EQUITY

Gurbachan Singh and Nisha Butoliya

Assessment! When I was a child, it meant examination that comes at the end of three months/ six months and then at the end of a session. I knew that I can't play during examination time and need to learn what was taught for the last three months. I was aware that once the examination is over, I can again be a free bird! I still remember the joy we had at the end of the last paper of terminal examination. We used to come home dancing, playing 'holi' with ink and making airplanes of our question papers!

Examination is seen as the end of learning – we can happily forget what was 'learnt'. How does it matter, if I forget everything after writing my exams? There is complete isolation of learning in schools with the real life. What matters is the performance in examination.

Examinations create a kind of anxiety, fear and trauma among children, which I think most of us have experienced during the whole course of formal education, even at graduate and postgraduate levels. There are numerous examples of students committing suicide due to examination stress or poor performance. In 2009, 2010 students committed suicide across India due to failures in examination (http://ncrb.nic.in/CD-ADSI2009/suicides-09.pdf).

What could be worse than this?

Students, who are always anxious because of examinations and afraid of results, would hardly be able to see the worth of doing / learning something for the pleasure of it and we can think about the repercussions for the future society. What kind of society will these students make?

The children who fail, drop out of the schools. It is not just about one time failure but repeated labeling of children as 'failures' (or donkey or similar other labels).

One who does not 'perform' has to sit on a donkey's table

Children read this as 'I can't do anything good in school'. Children fail, not because they are incapable but because they do not have any interest in what is done in schools. And slowly they lose confidence in their own selves.

Teaching happens, but learning doesn't. The whole process, beginning with morning assembly, sometimes becomes so detached for learners that they 'disobey' teachers and carry out their conversations or engage in activities which the school authorities find unacceptable. These children then are excluded from the school processes.

A separate line of 'disobedient' children. (An example of exclusion)

(Teacher is talking about Karl Marx., students of classes I to IV are among the audience. In the picture we see a separate line of students who were not listening to him.)

Malpractice during examinations is an indicator of how children look at examination – where I must perform, there is no other opportunity and if there is another opportunity, that comes with some stigma. The school and the larger society look at failure as a sign of a student being incapable of doing anything in life. By taking one kind of test only once, we run the risk of spoiling children's self-esteem; especially children at the adolescent stage who can't take distrust and disrespect.

Today we have Continuous and Comprehensive Evaluation (CCE). I see a lot of meaning in it, especially for children. CCE has two kinds of advantages – the first is about the 'education perspective' behind it. Assessment is carried out to smoothen the process of learning. Learning is seen as a process of construction of knowledge where a child is constantly involved. He/she makes new meanings for himself/ herself by assessing the facts/processes vis-à-vis his/her own context and understanding. A teacher plays a role of a facilitator who in collaboration with a child assesses the present stage in child development and creates environment of learning and of success for individual child. Assessment is not only of the child, but also of the resources, teaching practices and overall classroom environment with the yardstick of child's context. The classroom has to be a vibrant space which calls for participation from all.

The second advantage, which I'm going to discuss at length, is about 'equity'. Now, children are free from the burden of memorizing and tension of reproducing 'as it is' in the examination, fears of labels like 'budhdhu' and stress of 'examination days'. I also see a lot of opportunity for children based on their performance in a particular area rather than based on the biases of teachers - if X scores well in academics, he would also be a good monitor and would also run well. I wonder, if the children who scored well, continuously showed 'good performance' due to their teachers' confidence in them and the children who scored less repeatedly failed because they sensed that their teacher had no confidence in them and they have no place in the classroom. This is where I am convinced about the advantages/efficacy of CCE. Now every learner has to be assessed comprehensively and opportunities of success have to be created by the teacher. No learner feels excluded because he/she is not 'performing' in tests, rather, everyone feels satisfied that he/she is good at 'something' which is equally important.

If we look at classroom processes with a lens of equity, we feel disappointed. Children, usually have no say in what gets taught in school and what kinds of activities are available. For some children, the processes at school are relatively smooth, because the kind of exposure they get at home is very similar to the school culture. But, if we consider children from tribal areas, disadvantaged background, we find that they remain completely alienated – the language they speak at home has no place in school, the activities they carry out for earning their bread and butter have no mention in books, food items that they eat are nowhere near the picture of balanced diet presented in classroom, members of the school community maintain a 'distance' because their clothes are dirty and so on. Then these children are expected to perform based on the prescribed curriculum. How does one rationalize this process of assessment?

CCE helps to STOP people from labeling children. A child is an individual with a lot of strengths to be identified. One question paper CANNOT assess child's abilities. Development and learning in child DOES NOT require any certificate, at least

at the elementary level. The system needs it to take administrative decisions and the load of 'pass / fail' is put on little children. CCE does not mean frequent tests.

CCE is not just about exams and evaluation. It changes the whole paradigm of evaluation and how 'learning processes' and 'child' are viewed. Implementing CCE means –

- Looking at every child as an individual with their own individuality, their basic nature – some are shy, some introvert, some outspoken. Here being shy or extrovert is ones' own personality. It has nothing to do with success or no success in life or usefulness in society.
- Ability to identify individual strengths. Understanding children in our classroom is vital to the teaching learning process and also for the development and learning among children. One time and one kind (paper-pencil) of testing is not useful here. What we need is a comprehensive approach towards understanding child's abilities. Understanding his/her background, context, her strengths as a learner etc.
- A child's performance is compared with himself/herself. Every child comes with certain context and has certain conditions at home. This leads to children with similar abilities performing differently. Hence comparing with oneself is a good way to assess learning.
- Performance is seen as a continuum. Every child is at different points.
- Assessment to assess where a child is and for providing individualized opportunities of learning. Assessment is seen as an integral part of learning process.
- Being sensitive to learners. Sensitivity towards a child's background, listening to his/her words carefully, showing trust and respect. – These are essential conditions of learning and performing.

These processes of CCE would help in bringing children to school. Opportunity for all – no body is excluded because they have certain language at home, because they have a certain culture.

It will also address the quality issue – since the number of children coming to school and remaining in school would increase, one has to increase the benchmark of quality. This will further influence the whole teaching learning process.

This discussion is not to show CCE as a magic wand. The objective is to look at CCE as paradigm shift in our understanding about child, development and learning. Looking at this whole issue with a lens of Equity may help us to rationalize the importance of Continuous and Comprehensive evaluation.

School education needs to be sensitive about the impact of labels and failures or low performance in examinations among children. Understanding about the aim of school education – it is not to just promote or retain children. Generally, schools focus more on who has got good ranks, the children with poor performance get no attention – nobody thinks about them.

I hope we create a system for learning and not for filtering.

(We would like to thank our colleagues, Jitendra Sharma and Debasish Nandy who gave us useful inputs towards putting together the article)

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EDUCATIONAL ASSESSMENT AND INTERVENTION

G Shankar

Since education has been commoditized, there are two different worlds of the haves and have-nots in education. The quality of education in government schools is still very poor and new assessment- based books have been introduced which are not compatible with the delivery system. The 'haves' in the existing system of education live in an age of information overload. As there is so much to learn, many parents and educators try to give children a head start by introducing them to advanced concepts early on. To put children on fast-forward is to risk turning them off to their natural desire to learn and, instead, increases the risk of their becoming anxious, depressed and unhappy. The schools meant for the 'haves' exert pressure through high-powered curricula and parents feel the need to keep children running, lest they fall off the treadmill.

A system to measure the learning achievement of children aims at motivating and inspiring teachers and schools to develop processes in a sustained manner. It is to capture the holistic objective of a school environment and in-school processes that enable all the children to acquire the relevant expected competencies in a manner relevant to their day-to-day applications.

In the Indian education system 'evaluation' is associated with examination, tension and anxiety. New approaches to curricula fail, if they do not combat the deep-rooted system of examination. This deep-rooted system hinders the natural flow of knowledge in a joyful learning environment. To overcome these barriers of education, reliable and ongoing information must be available to:

- Identify academic and behavioral needs of individual students
- Inform the problem-solving process
- Design and modify instruction to meet student needs
- Evaluate the effectiveness of instruction at different levels, of the system (e.g., classroom, school, district)

An efficient system that streamlines increasingly limited resources, however, is still paramount. Therefore, school assessment uses a tiered system of assessments that increase in frequency and intensity as greater needs are revealed. Timely, reliable assessments indicate which students are falling behind in critical skills or which students need their learning accelerated, as well as allow teachers to design instruction that responds to the learning needs. By regularly assessing students' progress in learning and behaviour, teachers can identify which students need more help, which are likely to make good progress without extra help, and which students need their learning accelerated.

An effective assessment plan has four main objectives:

1. To identify students at the beginning of the year who are at-risk or who are experiencing difficulties and who may need extra instruction or intensive interventions if they are to progress toward grade-level standards by the end of the year, as well as students who have reached benchmarks and who need to be challenged.

2. To monitor students' progress during the year to determine whether at-risk students are making adequate progress in critical skills and to identify

any students who may be falling behind or need to be challenged.

3. To inform instructional planning in order to meet the most critical needs of individual students.

4. To evaluate whether the instruction or intervention provided is powerful enough to help all students achieve grade-level standards by the end of each year.

The four objectives outlined above can be achieved through four types of assessments during the school year: 1) screening, 2) progress monitoring, 3) diagnostic, and 4) outcome. They correspond roughly to the four objectives above, but all can contribute in helping plan effective instruction and interventions.

Screening Assessments: Screening assessments are quick and efficient measures of overall ability and critical skills known to be strong indicators that predict student performance. Administered to all students as an initial baseline, these assessments help to identify students who do not meet or who exceed grade level expectations. Results can be used as a starting point for instruction or to indicate a need for further evaluation.

Progress Monitoring Assessments: Progress monitoring assessments are also brief, but are given periodically to determine whether students are making adequate progress. Progress monitoring assessment data should be collected, evaluated, and used on an ongoing basis for the following purposes:

- Determine rate of a student's progress
- Provide information on the effectiveness of instruction and to modify the intervention if necessary
- Identify the need for additional information
- Analyze and interpret gaps between benchmarks and achievement.

Diagnostic Assessments: While relatively lengthy, diagnostic assessments provide an in-depth, reliable assessment of targeted skills. Their major purpose is to provide information for planning more effective instruction and interventions. Diagnostic assessments should be given when there is a clear expectation that they will offer new or more reliable information about a child's academic or behavioural needs that can be used to help plan more powerful instruction or interventions.

If schools are implementing screening, progress monitoring, and outcome assessments in a reliable and valid way, the need for additional testing, using formal diagnostic instruments, should be reduced. Because they are time-consuming and expensive, complete diagnostic tests should be administered far less frequently than the other assessments. However, specific subtests from diagnostic instruments might be used to provide information in areas not assessed by screening, progress monitoring, or outcome assessments. School leaders should continually ask if the value of the information to teachers from formal diagnostic tests in planning instruction merits the time spent administering such tests.

Outcome Assessments: Given at the end of the school year, outcome tests are frequently group-administered tests of important outcomes (e.g., CSAP). Outcome assessments are often used for school, district and or state reporting purposes. These tests are important because they give school leaders and teachers feedback about the overall effectiveness of their instructional program. As part of an effective assessment plan, outcome assessments should be administered at the end of every year.

The Present Scenario of Assessment

The present system of assessment and evaluation for school education in India is exam based. Therefore, it focuses only on cognitive learning outcomes and in the process co-curricular domains are neglected, even though

co-curricular areas are an equally important and significant part of child development. Even in curricular areas the focus is on rote learning and memorization, characterized by a neglect of higher mental abilities such as critical thinking, problem solving and creative ability.

In India, The National Curriculum Framework – 2005, developed on the basis of 21 position papers has looked into every aspect of school education. The document states that examinations require systemic reforms in the context of evaluation and assessment. The high failure rates, increasing number of school drop outs, unhealthy competition, stress, nervous breakdowns and suicides among learners make it imperative for Indian educationists to look into the evaluation system of the country which is at present examination oriented.

The need of the hour is to prepare our young learners as innovative problem-solvers and not as rote-learners. However, the present system of examination is inflexible. It is based on a 'one-size-fits-all' principle, wherein the individuality and creativity of the learner are not taken into account. There is a failure to measure the real potential of the learners, and the marks awarded to the students are raw marks which do not give a real picture of the learners. The pattern followed in the school leaving exams known as board exams, is adhered to even in schools and the emphasis is on scores thereby defeating the whole purpose of education. This backlash effect of examination has taken its toll on the pedagogical principles of teaching and learning.

To correct this distortion, National Curriculum Framework 2005 has proposed some guiding principles for school education, which are

- connecting knowledge to life outside the school,
- ensuring that learning is shifted away from rote methods,
- enriching the curriculum to provide for overall development of children rather than remain textbook centric,
- making examinations more flexible and integrated into classroom life and,
- nurturing an over-riding identity informed by caring concerns within the democratic polity of the country.

These guiding principles show a major shift in the approach towards teaching and learning, as compared to the traditional methods i.e. a shift from behaviorism to constructivism. The new approach to teaching is learner-centered and the process of assessment also aims at enhancing the learning capabilities of the learner by taking cognizance of their overall progress. This shift in approach in itself requires a major change in assessment tools and techniques as well.

National Curriculum Framework, 2005 has proposed a shift in the approach towards teaching and learning, from the earlier behaviorist approach to the constructivist approach. Under the behaviorist approach the student's achievement was determined on the basis of memory, as a result of which, the meta-cognitive skills such as critical thinking; reasoning ability and problem solving were totally neglected.

Constructivism, on the other hand, believes that learning is an active process in which meaning is developed on the basis of experience, and that learning should be situated in realistic situations, should promote social interactions and use authentic learning materials/tasks. In a constructivist class students are encouraged to take the initiative in the process of learning. Students are encouraged to ask questions, interact freely and develop independent thinking. This in turn helps them develop critical thinking and problem solving attitudes. As a part of this approach, students are asked open-ended and extrapolatory questions and their ideas are given due recognition.

Group work and pair work are encouraged because sharing of ideas helps in conceptual clarity and language learning. The constructivist approach is based on the premise that all human beings construct their own knowledge and that given the right opportunity and environment, learners will be able to construct their own knowledge. This new approach to teaching demands corresponding changes in assessment in school as well.

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ASSESSMENT IN SCHOOL EDUCATION: THEN AND NOW

Prem Lata Bhatt

Assessment plays the very vital role in school life of a child. It is the process for determining whether a child has a disability and needs special education and related services. It's the first step in developing an educational program that will help the child learn. A full and individual initial assessment must be done before the initial provision of any special education or related services to a child with a disability, and students must be reevaluated at least once every three years.

Actually, assessment involves gathering information from a variety of sources about a child's functioning and development in all areas of suspected disability, including information provided by the parent. The assessment may look at cognitive, behavioral, physical, and developmental factors, as well as other areas. All this information is used to determine the child's educational needs.

A full and individual educational assessment in school serves many important purposes like as:-

1. Identification: Assessment in school education can identify children who have delays or learning problems and may need special education and related services as a result. It gives a unique view to teacher as well as student for their improvement and bright future. A learner can identify very easily on the basis of their performance during school

2. Eligibility: Assessment determines whether your child is a child with a disability under the Individuals with Disabilities Education Act (IDEA) and qualifies for special education and related services.

3. Planning an Individualized Education Program (IEP): School assessment provides information that can help to the school to develop an appropriate IEP for child.

4. Instructional strategies: Assessment can help determine what strategies may be most effective in helping a child's learning.

5. Measuring progress: School assessment establishes a baseline for measuring your child's educational progress.

Now-a-days the system of assessment in school is going to change with the reference of NCF-2005, Right to Education Act and Continuous and Comprehensive Evaluation. The assessment process in school establishes a foundation for developing an appropriate educational program for children. When we visualized the traditional evaluation system we find that this system is not the most effective in terms of resulting in actual learning and has many disadvantages that are actually counterproductive to real learning. The traditional assessment system focuses entirely on intellectual and ignores experiential learning.

Some of the major characteristics of traditional assessment system were:

1. came at the end of session in the form of exam.

2. based on subject & class

3. common question paper for all students of same grade

4. created tension & put pressure upon student

5. promoted "go for tuition" style

Actually, assessment is as old as education itself. It is the very last phase of teaching and learning.

Traditionally, the assessment has been the very tough exercise, fearful enough for students. However, with changing times, the procedure of conventional examination has changed.

Now, the modern concept of assessment in school is quite progressive and scientific. Educationists have introduced a new term CCE (continuous and comprehensive evaluation) in the light of various educational policy documents because the NCERT discussion paper (2000) on National Curriculum Framework for School Education has outlined the role of evaluation in raising standard of attainment as stated below .

The main purpose of evaluation as envisaged by the Education Commission (1964-66) and reiterated in NPE, 1986, is to help determine and gradually raise standards of attainment at state and national levels. Evaluation should therefore be constructed as a powerful instrument for improving the quality of education in general and that of improving teaching learning in particular. One of the main ingredients of quality education is the quality of learners' achievements which should be effectively realized through feedback mechanism to be employed for the benefit of learners, teachers and parents. Now-a-days, evaluation is practiced as a mandatory requirement of the system which is accomplished through end-of--year examinations and some tests, etc. during the year. In order to have proper evaluation of learners' progress, examinations alone should not be relied upon. Other modes of assessment such as observation during individual and group tasks, sociogram and peer ratings etc. may be put to use. The outcomes of this evaluation convey the achievement of student at particular times as revealed through the testing devices put to use This exercise is done more as a ritual rather than as a device of specific feedback for learners, teachers and parents. Corrective measures particularly in terms of remedial instructions are a rare phenomenon. In order to derive full advantage of examination and evaluation the outcomes need to be interpreted in the following manner:

1. by the learner to know his/her strength and weakness and get inspiration to make up the deficiency at the earliest.

2. by the teacher to have an assessment of students performance on one hand and assessment of the efficacy the teaching learning strategy employed by him/her. This should be analyzed with a view to providing differential treatments to different categories of learners so that students may be engaged as under:-

a. bright ones may be engaged in goal directed learning through enrichment program.

b. average ones may be involved in peer learning by assigning specific tasks in small groups

c. the weaker ones may be diagnosed properly and remedial teaching may be organized before embarking upon new teaching units

The aforesaid practice of evaluation will constitute part of periodic and comprehensive evaluation and may help learners attain mastery of competencies, basic skills, desirable attitude and values which may help them to settle in life and become good and contributing citizens of the country. Necessary steps may be taken to reduce the element of rote memorization of information from books to application of the learned concepts, skills and competencies in particular situation. Besides, textbooks, instructional materials will have to be re-oriented towards this goal; teachers will have to be motivated and empowered to undertake such tasks in right earnest. Need for a serious monitoring mechanism cannot be undermined.

So, we find that the new system of assessment indicates towards "Assessment for Learning" whereas the traditional system of assessment indicates towards "Assessment of Learning" because Assessment for learning happens

while learning is still underway. These are the assessments that we conduct throughout teaching and learning to diagnose student needs, plan our next step in instruction, provide students with feedback they can use to improve the quality of their work, and help students see and feel in control of their journey to Success. Each one reveals to students increments of achievement and how to do better the next time. On these occasions, the grading system is laid aside. Assessment of learning are those assessments that happen after learning is supposed to have occurred to determine if it did. They are used to make statements of student learning status at a point in time to those outside the classroom, as when making student referrals or making decisions about programs. State assessment, local standardized tests, and college admission tests represent external examinations that do this. But we also conduct assessment of learning within classroom when we gather evidence to determine a student's report card grade. Unit final exams and important projects often serve this purpose.

Apart from above given information some major variation between traditional assessment and current assessment for assessment users are-

Assessment User	Assessment Now	Assessment Then
Students	Am I improving over time? Do I know what it means to succeed? What should I do next? What help do I need?	Am I succeeding at the level that I should be? Am I capable of success? How am I doing in relationship to my classmates? Is the learning worth the effort?
Teachers	What does this student need? What do these students need? What are student strengths to build on? How should I group my students? Am I going too fast? Too slow? Too far? Not far enough?	What grade do I put on the report card? What students need to be referred for special service? What will teachers tell parents?
Parents	What can we do at home to support learning? Is my child learning new things?	Is my child keeping up? Is this teacher doing a good job? Is this a good school?
Principal		Is instruction producing results? Are our students ready for the workplace or the next step in learning? How shall we allocate building resources to achieve success?
Superintendent		Are our programs of Instruction producing desired results? Is each building producing results? Which schools need additional resources? How shall we allocate district resources to achieve success?

Assessment User	Assessment Now	Assessment Then
State Department of Education		Are programs across the state producing results? Are individual districts producing results? Who is working adequate yearly progress and is not? How shall we allocate district resources to achieve success?
Citizens		Are our students achieving in ways that prepare them to become productive workers and citizens?

Finally, we can say that previous assessment methods in schools were a traditional way to think of formative uses of assessment while current assessment in schools goes beyond that.

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DEVELOPMENTS IN ASSESSMENT: A PERSPECTIVE

K R Sharma

These days there has been a lot of debate in schools over Continuous and Comprehensive Evaluation (CCE). Earlier methods of assessment have been considered by some to be ineffective and that the entire procedure has got entangled in a system of examination upon which everything depends. The earlier systems of assessments were not able to show students in what ways their learning had been instrumental in changing attitudes. Nor were they able to indicate to guardians what their children knew or did not know.

Today, assessment has taken a different turn. So far, it has been able to display only what a child did not know. Exams have not been able to show the extent of a child's knowledge and how far she has progressed. This is totally contrary to principles of child psychology. Somehow, there is a popular idea that an examination's value lies in the degree of fear it can create in a child's mind. This is the idea that has taken root in popular imagination. However, the picture has now changed. We are now at a juncture where we are looking at assessment differently.

The goals of the National Curriculum Framework (NCF) 2005 are there in front of us. The NCF has taken note of the fact that assessment has so far been based on apprehension when it should not be so. The aim of assessment should not be to repress a child through these methods. To assign to children labels such as 'stupid and slow' or 'bright and clever' and thereby put them down, contradicts the basic tenets of education.

While the RTE, on one hand, wants every child to be brought under the umbrella of education, on the other hand, it talks about Class 5 examinations as being remedial. It wants to completely root out old practices and create an educational system which adds strength to children's learning capacities. The RTE specifically states that emphasis must be laid on the holistic growth of children by nurturing both their mental and physical attributes by maximizing their knowledge and understanding.

If we are really interested in increasing the capabilities of children, then we have to prepare teachers for the change. An institution can be called capable of imparting education only if the students are able – and show they are able – to gain knowledge. Teachers must be given opportunities to learn and constantly update their knowledge. The government has created multiple ways by which teachers and students can remain abreast of the latest trends – Sarva Shiksha Abhiyan, Zilla Education Authorities, Cluster Resource Centres (CRC), to name a few. Heads of schools are in contact with all these agencies.

The underlying principle of CCE is that all stress and tension should be removed from testing and teachers should get opportunities to evaluate their children on varied criteria.

The question arises: how can a teacher be sure that he or she has assessed all the aspects of a child's learning and, therefore, progressing? CCE also raises another question – if a child cannot be deemed as having failed, what is the goal of the educational system? Why should they go through the system if their progress cannot be evaluated? This question has given rise to the view that

learning is only possible if it is followed up with assessment. This view is not wholly right: learning is only possible in nurturing atmospheres, rather than in stressful ones. There is also another argument put forth and that is, if students do not become familiar with the examination system in school, how will they face competitive examinations in later life?

The idea of continuous evaluation is that it is an on-going process which enables the teacher to keep a check on not only what has been taught but also on what has been learnt. This provides feedback to teachers to make sure that learning has taken place at the conceptual stage. Emphasis has to be placed on concept learning within the classroom itself. For example, it is important to know whether reading and writing skills have been learnt early as these two are the very skills which are the foundation of further learning. It is therefore very important for a teacher to be sure of her students' skills. Teachers of the higher classes will have to make sure they are able to gauge their students by ensuring that practicals accompanying science classes adequately amplify concepts taught and making sure that children have understood them. Testing should reveal whether children have understood concepts and this will in turn show if they have been presented too early in a child's maturity cycle. Testing should be a holistic examination of whatever happens in the classroom. Another important aspect of learning is the level of discussions that take place in a classroom.

Present day learning has become too exam oriented and the testing methodologies do not fully assess the learner. All examinations seem to have a uniform methodology, regardless of whether, say, the subject is science or language. We will have to suit the examination with the subject as the NCF recommends. As far as language (Hindi) is concerned, appropriate assessment methods have to be designed. For example, it is not appropriate to judge reading with a written exam or writing task. Teachers will have to evaluate children's reading standards when they read in class. The methodology of making sure that every child gets a chance to read has to be ensured – a difficult task when some schools have 50-60 students in each class. One suggestion is to check reading standards by creating weekly or fortnightly tests for different groups and check their progress. The progress in writing skills can be checked by creating portfolios for each child in which could be kept samples of individual writing or drawing. Written work in notebooks is another means by which a child's work can be recorded.

A criticism of CCE is that it takes up a lot of the teacher's time. It has to be understood that CCE is part and parcel of the classroom activity and if done together with the lesson, will be become an easier process. All in all, the teaching –learning experience is a vital one that should not be derailed at any point.

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SECTION B

INSIDE THE CLASSROOM

STIMULI FOR ASSESSMENT

S Indumathi and Neeraja Raghavan

Researchers have been asking questions about questions for nearly a century. A plethora of papers can be found on the subject of questioning and assessment. In their work with teachers, David A. Shiman and Robert J. Nash have reported that the questions teachers usually ask seem to fall into three broad categories: factual, conceptual and contextual.

To conceive an educative question requires thought: to formulate it requires labour; and to pose it, tact.

Dillon "Teaching and the Art of Questioning."

In this article, we wanted to question the common assumption that assessment tools are best designed keeping textual matter as the base. In addition, we wanted to investigate if the text of one subject could lend itself to assessment of another. If this is possible, we felt, the barriers between disciplines would melt away, and the learning outcomes of a lesson in one subject could well span others.

So we set out to design assessment tools, which have been described in the next two pages. Interestingly, these, too, would also fall under the same three categories described by Shiman and Nash, but what we have explored is whether:

- **Textual matter of one subject lends itself to assessment in various other subjects as well**
- **Assessment can be carried out with material other than text.**

The first exploration uses food packets or information on the food cartons to test different **subjects**, and is pitched at class 8 level. Can a food carton lend itself to the learning of subjects like History, Physics, Language and Maths? We think so - and we show some examples here!

The second exercise is based on a paragraph from some EVS content of class 5. We have tried to compose a set of questions that test various **skills** like estimation, measurement, observation, drawing, analytical thinking, etc.

While these are merely illustrative, we submit that it would be an interesting exercise for teachers to either attempt to create such questions or - better still - ask students to come up with various questions on similar content. It is our contention that such an exercise, if sustained, could well bring about a shift in the way that each subject's text is read and everyday materials are viewed by both teachers and students. No doubt, the exercise would demand reading and referencing if one is to do justice to all the questions. But then – isn't that what learning is all about?

Note: The authors do not intend to subscribe to any particular brand here or recommend any processed food. The images used are for the purpose of discussion on assessment, teaching and learning.

Class VIII

Language:

What did you have for breakfast today? Write out a recipe for it.

If you were to advertise it, what kind of a caption would you use for it? (in 3-4 words.)

Write a letter to your friend convincing him/her not to drink Pepsi

Maths:

Calculate the percentage and ratio of fats, proteins and carbohydrates from the given table and draw a pie chart.

Value for 100 g

Saturated fatty acids	1.2 g
Mono Unsaturated fatty acids	1.0g
Poly Unsaturated fatty acids	0.3 g
Sugar	34.7g
Fibre	5.0g
Other carbohydrates	43.1g
Protein	9.0g
Other components (vitamins, minerals)	5.7g

Compare the surface area of 1 litre Tropicana tetra pack before and after if it is opened out fully.

History

Trace the history of the food packaging industry.

Talk to your grandparents and find out the methods of food preservation and storage that were adopted by them.

Biology:

Why do we need Iron and Calcium as a part of our diet?

'Best before 9 months'- Why do you think any food should be consumed before the specified time?

Which of these products come from living creatures?

Which of these products are seeds? Flowers? Fruits?

Physics:

What determines whether a product is sold by weight or by volume?

What is the difference between weight and mass?

Chemistry:

Why are some food substances packed in tin containers?

How would one select the material of construction of a food container?

What are some types of sugars?

Environmental Studies:

Draw up a waste disposal plan for your food packets and suggest these to people in your neighbourhood.

Take two or three packed containers. Find out where they are manufactured. Is this close to your place? If not, think about transportation of food to your place and how that may affect the environment. Can you think of alternative sources of foods that are more readily available in your neighbourhood?

References:

Questioning: Another View David A. Shiman and Robert J. Nash Peabody Journal of Education, Vol. 51, No. 4, Issues and Trends in American Education (Jul., 1974), pp. 246-253

Class V

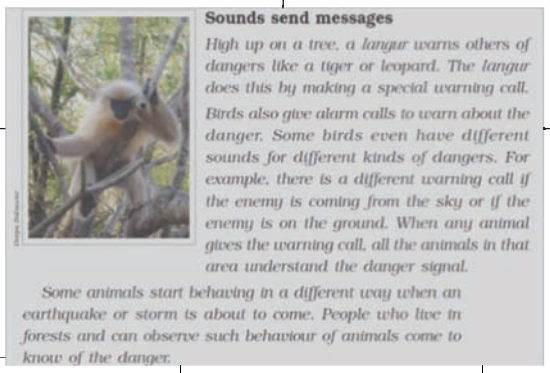
Drawing Skills:
Draw a langur, a leopard and a tiger.

Comparison & Classification Skill:
- What are the similarities between these animals?
- In what way are they different from each other?
- Group these animals into two groups: LOUD and SOFT
- Again, group these animals into PREY and PREDATOR.

Reading & Referencing Skill:
- Which are the words you don't know the meaning of? List them and look them up in the dictionary.
- Which are the key words in this text? Why do you think these are key words?
- Which of the three animals (langur, tiger and leopard) has the loudest roar?
- Find out the names of as many animals as you can which make loud noises, and which are not heard so loudly.

Language/Writing Skill:
- Observe if insects or your pets behave differently before a rainstorm and note down any differences that you observe.
- Close your eyes and listen carefully to all the sounds around you. Now open your eyes and list them all.
- List the sounds that you heard from the sky.
- List those you heard from the ground.
- List those that you heard from somewhere in between the sky and the ground.
- List the loudest sounds.
- List the softest sounds.

Language/Writing Skill:
- Describe each of the sounds you heard. Use words, sentences or phrases.
- Link your words, sentences or phrases to create a poem.
- Suppose a langur, a tiger and a leopard were stranded on an island. Invent a story about how they learnt to live together on that island.



Sounds send messages

High up on a tree, a langur warns others of dangers like a tiger or leopard. The langur does this by making a special warning call.

Birds also give alarm calls to warn about the danger. Some birds even have different sounds for different kinds of dangers. For example, there is a different warning call if the enemy is coming from the sky or if the enemy is on the ground. When any animal gives the warning call, all the animals in that area understand the danger signal.

Some animals start behaving in a different way when an earthquake or storm is about to come. People who live in forests and can observe such behaviour of animals come to know of the danger.

Source:
Class V EVS Textbook, NCERT

Reasoning Skills:
- Why do you think a tiger or a leopard is a danger to a langur?
- Who or what is a danger to you?

Analytical Skill:
- With which sounds were you able to guess distances well?
- Why do you think it didn't work with other sounds?
- Why do you think some animals start behaving differently when an earth-quake or storm is about to come?

Estimation/measurement Skills:
- Stand near your favourite tree. Listen to the calling birds with closed eyes. How far away do you think the bird that you hear is from you? Make a guess.
- Now open your eyes and verify the distance of the calling bird from you. (You can estimate the distance in the number of footsteps it takes you to get to the bird.)
- Practice this exercise with other sounds.

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"WHO'S THE TOPPER IN YOUR CLASS?"

PHILOSOPHIES OF LEARNING AND ASSESSMENT AT CFL, BANGALORE

Venkatesh Onkar

Amy Chua's 2011 book, *Battle Hymn of the Tiger Mother*, raised outraged protest in the US when it was published. The book is about a culture or style of parenting (the author, a law professor at a prestigious American university, calls it the "Chinese" style) which consists of pushing your children to achieve perfection in a field by insisting on hours of work a day, not giving them any choice in their interests or work patterns. The author's two daughters are musical prodigies, and they spend several hours a day practising the piano and the violin. This is also a style of parenting that demands straight As in all subjects, complete respect and obedience to parental authority, and an utter dedication to "excellence" in all aspects of daily life.

The author contrasts the "Chinese" style of parenting with the "Western" style. This latter is characterised by parents who praise their children for getting Bs ("I'm really proud of you!You tried hard! ") and who do not insist upon an ethic of hard work (we now begin to see the seeds of the outrage that the book evoked!). Western parents are also afraid of hurting children's self esteem by telling them that they did not perform up to expectations. The Western way, the author tells us, is based on assuming the fragility of the child in the face of assessment and critique, while the Chinese way, which is to offer brutally honest critical assessment, assumes strength, and also assumes that the child will use the criticism to improve. Interestingly for our context, the author characterises other immigrant cultures, including "Indian" and "Pakistani," as very similar to the "Chinese" way.

Battle Hymn of the Tiger Mother is a wonderfully funny, ironic and (often) tongue-in-cheek read. The main theme of the book, as I had mentioned, is about different cultures of parenting. But what stands out in Chua's description of both cultures are very powerful assumptions regarding (i) learning and assessment, both in the school and in the home, and (ii) how assessment feeds back to the child to impact further learning. For all the irony and humour and power of the book, it does very very little to question these assumptions.

I teach at a small non-formal school, Centre For Learning (CFL), near Bangalore. Many of our assumptions about learning and assessment are somewhat different from those of the author of *Battle Hymn*! I will try to articulate our ideas about learning and assessing (both formal and informal), and the reasons we follow the ideas and practices we do.

Classes at CFL are small in number, typically fewer than ten students in a class. Students get feedback during class time (and homework time—we are a residential school) from the teacher regarding their understanding of a concept, or of the manner in which they have attempted an assignment. Students also express the difficulties they have in understanding particular concepts, and teachers respond to these specific difficulties. Teachers are in contact with parents regarding how the child is doing in school, across many dimensions: intellectual, emotional and physical. At the end of the year, in addition to the more-or-less continuous feedback described above, each student gets a comprehensive written report for all subjects and activities in school.

Some of our features of assessment are a little different from those of other schools. For instance, we do not have tests or exams until the tenth grade, when students appear for board exams and have to practise for them. Our reports tend to be more qualitative and in-depth than quantitative. People who hear of this are then curious as to how the student is actually assessed and how teachers judge progress. This is a point I will try to clarify later on.

A very central philosophical notion of the school, indeed one might say its driving idea, is that what we call "learning" is not just subject-based or "activity" (meaning "extra-curricular")-based. The field of what we can call "learning" is very wide, and could also encompass, for instance, learning about our attitudes to various situations. Do I resist particular kinds of activities, such as hard physical work? What happens when I notice such a resistance? Is it always fixed in intensity or duration or is there space for it to dissolve and for me to plunge into the activity? Learning could be about our particular emotional responses to particular situations; is a child habitually frightened of mathematics? How can we help her see the roots and reasons for her fear? Is there anything in the learning environment that needs to be altered? Very crucially, learning could be about the ways in which we relate to each other, both adults and students. Do we have very fixed pictures about our peers? In what ways do we reach out to others? What are the power structures, the patterns of inclusion and exclusion, in our groups? Such learning is not cumulative, in the sense that learning about mathematics is; it is more to do with being sensitive to these emotional currents in the present moment. Thus we as teachers do not look at students only from the "subject" point of view; we also consider the emotional well being of the student (and the adult). Many of these aspects I have described above can also find their way into an overall assessment of the child, both on a daily basis and at the end of the year. Of course "assessing" emotional well-being is quite different from assessing progress in physics or history!

Having set out the background to our educational philosophy, perhaps I could begin with the reasons why we do not administer tests and exams at CFL. Such an explanation needs to begin with some of the limitations of the testing process, conventionally understood.

Whatever the testing styles, however comprehensive tests may or may not be, test results need to be interpreted carefully. Certainly, a mark does reveal something. But what it reveals will reflect the structure and content of the test itself, rather than a fixed, intrinsic quality of "intelligence" in the student. An exam testing rote learning merely tests that. A complex IIT entrance exam may test the student's ability to manipulate equations, but may not reveal much about his or her understanding of the conceptual depth of physics or mathematics. Each educational environment seems to have its own climate, its own understanding, of intelligence, and a cumulative series of tests builds up a cumulative picture of the student's "intelligence", thoroughly and narrowly circumscribed by the assumptions of the testing system itself. And we are not even getting into the fact that there are so many kinds of abilities that standard testing may not even be able to assess, such as the ability to deal with complex real life situations. Just to accept grades as a clear indication of "intelligence" is obviously a narrow view, and this is one reason to be wary of the conventional testing process. (All of this obviously does not preclude the fact that well thought out tests that stress conceptual understanding and open ended thinking can clearly reveal understanding and also can guide the teacher in improving the student's understanding)

Then why not just go with the best testing material currently available: the "good" tests that are

open-ended, creative and so on? Why exclude tests and exams altogether? One answer is that giving tests and exams and grades inevitable opens up a minefield: students begin comparing their performance with that of others, and this has various implications, both for their learning and for their emotional well-being.

It seems a very ingrained assumption in our educational culture that only through comparison can we assess. Comparison gives us a target to aim for ("You can be as smart as she is"); it is assumed to be a major motivational factor in the lives of students.

We often see students motivated by beating the competition, but such students seem more interested in getting ahead than in actually understanding the subject deeply or appreciating its beauty. As a teacher, my goal is definitely the latter: to help students enjoy schooling, to help them see the depth and power of a discipline, which will (hopefully) motivate them to explore the subject for themselves, come up with new questions, new ways of looking at a problem and so on. It is this intellectual curiosity and emotional engagement that is the promise of an educational endeavour and that will build creative and mature responses to the world around us. To narrow this potential down to a mark and a ranking system seems such a wasted opportunity.

Students are not, in my view, really motivated by competition and comparison. For the few who come out "on top," there are thousands for whom the whole experience of education is demoralizing and ridden with anxiety. The impact of such a mind-frame on learning must surely be tremendous. We need to begin questioning the competitive approach at a very deep level in order to be able to impact the lives of students on the ground. Fortunately, excellent research has been done in the areas of cooperative learning and other alternatives to rigid and individualistic ranking systems (please see the reference at the end of this article). Whether we are able to implement these alternatives at a societal level is of course another question.

Comparative assessment in a classroom by a teacher is often casual: "See how well he's working! Can you work like he does?" Often explicit rewards and punishments are tied into class performance (the role of reward and punishment on student learning is obviously a vast and problematic area, too big to go into here. Suffice it to say that students seem on the surface motivated by reward and punishment but in reality the situation is far more complex). It seems to make sense to us at CFL to avoid such comparative references: not in a rule-bound, obsessive way, or as a "motto," but simply with the awareness of the impact of such a culture of comparison on the overall learning environment as well as on the intellectual and emotional well being of a particular student. Written reports too do not contain comparative evaluation, for the same reason.

Of course, students will compare themselves with each other whether or not we give tests. They may, for instance, compare their relative speed of working, or on the number of tick marks on a particular assignment! Simply removing exams does not seem to remove this very powerful drive to feel better (or worse) about oneself by looking at another. As educators, we can point out this drive to students, discuss its impact, and help them to look at the roots of emotional security and insecurity as expressed in the need to find self-validation through comparison. More importantly, as educators, we need not institutionalise comparison, with all the fear and anxiety that it brings, as a motivational factor in our system. Children learn, and learn well, even without exams and tests.

All of the above are ideas and possibilities within school frameworks. The debate takes a very different shape for other contexts such as entry

examinations for college (though many of the points above may still be applicable).

At CFL, as I mentioned earlier, we do not administer tests and exams until the tenth grade (when children have to prepare for board exams). How then can we actually assess children's performance? Since there are clear curricular goals (drawn up fairly widely, to accommodate a range of abilities), each piece of work that the child does is itself a pointer to her level of overall understanding. The skill of the teacher thus lies in seeing what the child needs to be practising or what lacunae are present in her understanding and then to take further measures. The homework the child does may be quite closely linked to these factors, and the intervention of the teacher in fine tuning homework generally yields results. Multi-disciplinary project work (which the students at CFL routinely engage with) in one sense complicates narrow assessment but may reveal many dimensions of a child's understanding, again depending on the skill of the teacher in formulating criteria and learning outcomes in the first place.

A "report" on the child at CFL will thus not just be a grade on a card, or the dreaded "can do better/fair/poor," but a qualitative description of where the child stands according to various criteria, some clearly defined (the uses of the comma, two digit multiplication) and others somewhat more intangible (the ability to write richly descriptive pieces, or the ability to "see into" a math problem). Even the "intangible" criteria are often broken down and assessed by rubrics that the teacher body has discussed and agreed upon together. Of course, the report will only highlight essential features as judged by the teacher, which may be a subjective call (a general criticism of qualitative reporting anyway, which needs further exploration).

The teacher's assessment of the student's learning can be deepened by the self assessment of the student herself, again based on skilful criteria that educators can draw up. Simple questions that we can ask children in an English class, for example: Was your essay divided into paragraphs? Was each paragraph about a separate and clear point? Did the sentences within a paragraph flow smoothly, or did they jump around? Did you give examples to illustrate your main idea? Students' self assessment often indicates something clear about their capacity to learn, and this is tremendously valuable in the way a teacher assesses a student's learning. Such self assessment often finds its way into the report a teacher writes for a student.

Small class sizes (we have typically less than ten children per class) may facilitate some of the above processes. Certainly it is difficult to write qualitative reports for each child as numbers per class go up. I wonder whether it is possible to retain an overall curricular assessment of the child's progress, both in an ongoing manner as well as a final assessment, rather than making the test/exam model and the marks themselves the hallmark of understanding. In theory, is it possible to create rubrics of assessment that do not exclusively rely on examinations, even for larger classes in the Indian context? To me, this seems to be one of the most challenging (and most fruitful) area of investigation in the Indian educational context.

Earlier in this article, I described one of the keystones of the educational philosophy of the school, which can be briefly summarised as "learning about oneself." As a colleague of mine put it, we try to understand everything that is normally brushed under the carpet in educational contexts. If a student is afraid or distracted in a classroom, we need to understand why, and we can only begin to understand in an dialogue with the student. We see this kind of learning about oneself as undertaken as an important human activity, rather than just a trick to help the child

learn academics better or succeed at a project!

Thus a subject report will also include some perceptions on the part of the teacher as to the "emotional temperature" of the student. What are her motivational levels? Is she just anxious to please the teacher or can she patiently understand the demands of the subject? Is she easily distracted? Are peer dynamics playing havoc with her emotions? How can we loosen the grip of this powerful force (again, not so she can concentrate better in class, but because having a sense of inner freedom is important in itself)? Is she emotionally well, or unhappy?

While these perceptions are necessarily somewhat subjective, they are not totally so. Teachers usually read each others' reports, and the perceptions of one teacher may be modified in the light of a colleague's experience with the student. Teachers frequently discuss students' state of being, sometimes on a daily basis. In this sense, report writing at CFL is a collective enterprise, not completely subject to individual idiosyncrasy.

I have tried to give a sense of the philosophy and practise of assessment at CFL. It is important to us teachers that such a process is not based on a blueprint but rather upon our questions about education and well-being, and upon our very close observations of students. A report is also not intended as a final document, frozen in stone, on the student's life situation. Rather, it may be viewed as the beginning of a conversation with the student, the parents, and among the teachers themselves, on the shifting complex reality that is the student in school.

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Mukunda, Kamala: What Did You Ask At School Today? HarperCollins Publishers

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REPORT CARDS WITHOUT MARKS!

Umashanker Periodi

It was a pleasant surprise to receive the first report card of our child from from Centre for Learning (CFL). First of all it did not have any Marks. It was like a letter - warm and affectionate letter from our daughter's teachers. It was, not a single letter but, a bunch of narratives from all the concerned teachers. For us, it was very new because both our daughters were till then studying in a typical government school in our village.

We, as a family, enjoyed reading these letters. It had different sections. What we liked most is the way it described our daughters. It gave all that we knew about them and to our excitement it also gave us those aspects of our children that we did not know. It also gave us such a lot of insights on their behavior, thinking, moods and living.

The structure – to understand and develop

The structure of the report is very interesting. First there is the coordinators report which has two parts. The first part is about the whole class, the group of students. It gives us a general sense of what this group went through this year. *"The Parijathas year tends to be one of the most structured in the child's life at CFL"* It moves forward saying that the academic subjects and the IGCSE exams take large chunk of the time giving very less time for other things in school. It gives a roundup of what the academic program was and in a gist gives us what non-academic experience of the group was. It gives us a feeling of how the group has gelled, what they did well, what they neglected or when *"they were tired of each other".* It gives us very minute details of the group dynamics and feelings. The report has this to say about the group dynamics -- *"It came as a surprise for me that even at such young age many of them feel that certain movements in life like hurt and sorrow are inevitable and there is nothing much that can be done about it and discussing is a waste of time."*

The second part of the coordinators' report speaks about our individual child in a broader sense. *"she is a very thoughtful participant in dialogue classes and often has a very keen observation to share"……"theatre is something she can seriously consider perusing"*

It finishes with this paragraph …. *"her major challenge is to shrug off the sense of low-esteem and move on to really putting a lot of energy to her learning in the years to come. I look forward to having her as a senior school student and interacting with her for 3 more years"*

After this we have reports of each teacher who has engaged with the child. In this report there are two parts. The first part gives us what the curriculum was, how it was dealt and what text and resources were used. The second part gives a feeling of how the child has done in that subject. It gives very specific inputs like, *"cheerful and quite she has been an involved participant in the class…….i wish she was more pro-active about asking for help whenever she needed it" "Her ideas are original but, not always clear."* It is very systematically written with different side headings like work style, ideas and content, choice of words and fluency and examination preparation. On the work style the sentence, *"I also feel her weekends need more structuring and I am not sure if she is organizing her time well to work. She needs to plan better before writing"*

made us, think, relook and change the way we spent our weekends.

When it comes to helping the child the report is very specific *"…. I think we need to help her acquire better study skills. Simple points such as asking for clarification, making notes for her own understanding, reviewing for memory ……. I don't feel she has been very proactive in these areas…….. Very clearly she has the ability to work on these."* It can also capture very complex dynamics like *"… her conceptual grasp as well as her understanding of the skills required in the course has steadily grown over the months …… I would say there is a disparity between her participation in class and her written work. The former is very minimal while the latter is quite rich and sophisticated in terms of both content and analysis. "*

The report concludes thus - *"She seems to have a relatively peaceful year with no major emotional ups and down. It was very heartening to see her certainty about returning to school in spite of confusion amongst her classmates"*

Dialogue – the prime mover

We have never felt that the report is just a printed report judging our child. It is child friendly and the entire effort is to understand the child and help her. There are a whole lot of meetings and dialogue that happen pre and post this report meeting. The report is discussed with the students, then it is discussed in detail with the parents and in CFL when they say parents it is both the parents! Later there is an informal chat with each teacher. Every month there is a parent teacher meeting which is the only compulsory thing in CFL. it does not grade the child it just helps us to understand the child and see what all of us together can do to help child grow!

Initially sometimes we used to ponder if there is a need for such detailed and complex report. But after 8 years of this process with both our children in CFL, we feel that this was the best part of our children's education. It was a process of education more for us than for the children. It helped us immensely to understand our children. It gives you clear directions in the process of bringing up your children. It helps you to observe your child very keenly from different angles. It gives you a perspective to education. It makes you think and stops you from jumping in to conclusions. It helps you to build a culture of dialogue, a process of Democracy at the most fundamental institution – the family!

We felt that the report card of CFL was a way to celebrate a person. Hence, we always look forward for our children's report.

NB: All the sentences in italics are from the report of our daughter, from CFL.

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Teacher Evaluation: A Student's View

Aishwarya Kirit

The purpose of Teacher Evaluation in most systems is to bring about an improvement in the classroom and to foster growth of the teacher. And the acceptable parameters of evaluating a teacher are the student's academic growth and marks and the quality of teaching along with the teachers relationship with the class. A highly qualified teacher is also seen as a teacher who can be evaluated highly.

If and only IF someone had handed me a check list and asked me to mark my teachers the same way they marked me in the exams, I would have grabbed the chance with both hands. And then I would have stared at the paper, thoroughly confused.

In a class of 60, how does any student objectively evaluate a teacher?

Is it down to the teacher's passion for the subject or their educational qualifications?

For a long time I was under the impression that a 'good' teacher is one who can teach without a text book, someone one with knowledge that they could just come into the classroom and work their magic. Though I now realise the challenge lies in being able to teach and not just knowing the subject well.

My English Literature teacher from 6th grade was a teacher who clearly loved the subject and taught with the same passion. I still remember Tennyson's 'Brook' and Mark Twain's 'Tom Sawyer' being read out in his voice. It didn't matter that he wasn't as highly qualified as the other teachers but none of the other teachers have left an impression that has lasted for eight years.

Does one evaluate the teacher on how much attention they give to the student, not just the one passing with flying colours but also the weaker, less motivated ones?

If so, then my Eight Grade Math teacher would pass with flying colours. I was never particularly motivated enough to expend energy on Math. But he sat with me, punished me, coerced me and made sure I had developed an interest in the subject by the end of the year.

And yet, the same interest was undone by the experienced and qualified Math teacher in the Ninth Grade. Her marks oriented, fast paced style that aimed at getting the syllabus done rather than taking time to allow the class to grasp concept, ruined the entire experience for me.

In school, there was no question of giving feedback to the teacher, her word was law and no one dared question her or her methods. Teacher Evaluation is an alien concept to anyone who has grown up in traditional Indian schools, it borders on the blasphemous to evaluate a teacher. But, I believe that it might be the wakeup call that teachers across the country need.

And fancy words like 'teacher evaluation' didn't exist in our world. And now that it does, I wonder if in a class of 60+ 15 year old teenagers would have been objective in their evaluation.

It's very obvious that teachers are overworked, that they're pressed to rush through the syllabus regardless of the abilities of their students. A 'good' teacher in this scenario is one who can produce the highest marks, in a country where marks make or break your future it seems the most rational course of action. The system is changing now with all the new methods, texts books and merging CBSE and State Syllabus, the teachers are expected to move forward with the times and cater to a different classroom.

Any Evaluation system needs to be built to accommodate a large class room, varying language skills and the work load of the teacher.

Teacher Evaluation is a brilliant concept, a way to improve the education standards and to build an effective feedback system. But this is provided we are able to objectively evaluate every kind of teacher that exists.

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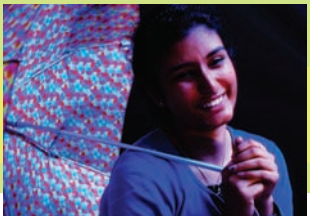

TESTING TIMES

Prema Rangachary

"Imagination is more important than knowledge. For knowledge is limited whereas imagination embraces the entire world, stimulating progress, giving birth to evolution" - Albert Einstein.

The story of the three blind men attempting to understand the entirety of an elephant by piecing together the experience of each one is illustrative of the attempts made by educators to understand the intelligence from the knowledge base of the students. Assessment at best reveals only a miniscule part of the total personality of the student.

Assessment literally means evaluation or judging the outcome. It refers to a form of testing the various aspects of growth in education. Assessment reveals the physical, emotional and intellectual development of the student.

Today, assessment has become a bad word. It conjures up pictures of stressed-out children, parents and teachers, all trying to desperately meet the expected goals of testing. Testing is the tool that judges and labels children. It can even scar them for life. As a result, assessment has become the bane of the education system, instead of being an instrument to spur better learning, a tool to better understanding of the students' needs and to tailor individual support.

A change in this direction will definitely make for a difference in perspective of the learning process; which in turn will address appropriately, the needs of the individual learner. This attitudinal change propels the next step required to move towards the expected goals.

An assessment activity is helpful if the information it provides is used as feedback to teachers and students in assessing themselves and each other, and to modify teaching and learning activities to better effect. Such assessments become formative assessments, where the evidence is actually used to adapt the teaching to meet learning needs.

Why should we assess learning and performance? Who benefits from these assessments?

The learner, no doubt, is at the core of this evaluation strategy. Teachers and experts in the subjects, schools and organizations also benefit from this assessment.

What are the benefits of assessing learning and performance?

1. Identifies gaps in learning and performance.
2. Measures learning and suggests ways to improve.
3. Equips students for the journey ahead
4. Encourages and supports further learning.
5. Feedback helps to redesign teaching methods
6. Evaluates the appropriateness of the concept topic

Assessment is a collaborative process between the teacher and the designer of the learning process and the student or the participant in the process of learning. The assessment through the feedback process makes the students onus to their learning. The teachers in turn become more responsible in developing appropriate learning interventions.

As a teacher, the goal is to use assessment, to encourage learning, promote introspection and educate so that every student automatically becomes a better learner.

What is the role of Rubric when we are talking about assessment of learning and assessment for

learning?

Rubric is a scoring tool that lists criteria for a piece of work; it also articulates gradations of quality for each criterion from excellent to poor.

Rubrics are powerful tools for teaching and assessment. They can improve the students' performance and monitor it by making the teacher's expectations clear and showing students how to meet those expectations. The result is a marked improvement in the students' work and in learning. Thus the use of rubrics defines quality.

Secondly rubrics make students judge their work with honesty and in detail so they are more aware of quality. When used for self and peer assessment, students are able to spot their errors and solve problems in their own work as well as others. This increases the sense of responsibility and allows them to take ownership for their work.

Thirdly, rubrics reduce the time spent by teachers in assessing and evaluating the students' work. Teachers tend to find that when a piece is self and peer assessed, they have very little left to say.

Rubrics provide informative feed backs about the student's strengths and the areas that need improvement.

Fourth, teachers like rubrics because by its very nature it accommodates heterogeneous classes.

Students feel that rubrics help make more precise evaluations of their work. Parents felt that they knew exactly what their child should do to be successful.

It is good to develop rubrics that are suitable to the curriculum and the teaching style. The creation should be a participatory process that involves the students.

How to go about it:

1. Present both a piece of good work and not-so good one to help the students identify the features of the former
2. List the criteria or features that mark the good work.
3. Describe the best and the worst levels of quality and fill in the middle levels taking common problems that occur.
4. Practice: evaluate the modals presented at the beginning by using the rubrics.
5. Use self and peer assessment.
6. Revise assessment based on feedback from peers.
7. Teach assessment with the same rubrics.

Creating a rubric is the difficult part, using them is easy. When the rubrics have been created the students have a copy to assess their own progress on a particular project. The students' assessment should not count towards a grade. The purpose is for the students to learn more and produce better work. Grading self-assessment compromises students' honesty.

When peers assess the work, they have to sign it so that the teacher is able to see how fair and accurate they have been. Teachers can ask for explanations and evidence to support their feedback.

Ultimately the rubric must bring out the best in every effort and to maintain quality. Rubric should also support and help to retain the levels of quality. The most important rubric will be those that are tailor made to fit the needs of individual students.

The demands of the 21st century are changing rapidly and our education must develop the survival skills; to know how to think, to reason, to analyse, to solve problems, to weigh evidence and to communicate effectively. These are essential skills for all. Testing tool should also be designed to encompass these skills to make testing comprehensive.

Current metaphors point to similarities of the lifeless computer to the live brain. Expressions such as being "hard wired" or "programmed" meaning to behave in a particular fashion have become common. Yet our living mind is not a metal component, "it is made of living people who are driven by feeling motives and relationships."

Here are some samples of a rubric created by the teachers at Vidya Vanam for class 1.
Class Level-1
Age: 5+
Group Action:
Situation: Class room needs to be organised and cleaned. Children asked to plan the action in groups
Reaction: Some children took decision on how to proceed with the work, some children reluctant to come forward.

Criteria	Group 1	Group 2	Group 3
Responsibility	Followed teachers' instructions and took up responsibilities	Followed peers and willing to follow their lead	Did not participate showed no interest
Planning	The group decided course of action, prioritized the action and executed it to perfection	Group did not have a plan of their own but followed the plan of their peers	This group observed the working and the plan of the others but paid very little attention to what was happening
Order	Placed desks, bags in its place, picked up paper and put it in the basket swept the classroom clean and put the broom and dust pan in its place	They helped the group which initiated the work, did not do anything on their own but followed the others meticulously	Some children showed interest in a particular work like arranging the desks
Personal Cleanliness	Group washed hands and feet after completion work and persuaded others to do the same	Followed group one in washing hands and feet	The group was eager to wash up and participated in this activity.
Leadership	They were leaders in every activity	Though they did not lead they followed the way set by others	Some were drawn to be leaders but others did not make an attempt

Rubrics for Group activity, debate and group discussion by students of Class 5, age 10+ to 12.
Role Play Describing the Evils of De-Forestation
The role play consists of characters:
Tree, cow, crow, wood cutter, priest and a hat seller.

Criteria	4	3	2	1
Accuracy and believability of the role	Realistic and consistent with the Character	Usually realistic but not consistent to character.	Often realistic partially consistent	Rarely believable and no accuracy to the character
Clarity of speech	Speech clear and easy to understand	Speech clear most of the time but not understood at times because of low volume	Speech muffled at times therefore not easy to understand	No clarity of speech
Expression and body language	Facial expressions and gestures appropriate to the role	Facial expressions dominate expression through voice	Voice and facial expression gestures are exaggerated	Gestures and voice are appropriate at times
Knowledge gained	Can clearly explain the purpose of the role play and how different characters view the aim of the role play	Can appreciate several ways in which the characters look at the theme but unable to justify	Can explain only one of the characters and only one way to solving the problem	Cannot explain the role in relation to the role play

Group Activity

Subject: Study of the five different land forms as described in Tamil Literature

Age group: 10 to 12

Criteria	1	2	3	4
Decision making	One person dominates decision making	Some students contribute to decision making	Most students contribute to decision making	All students to decision making
Social Interaction	Students frequently interrupt and put down view of others, students do not ask questions or clarification	Students pay attention to the group discussion, some students ask questions and build arguments based on others comments	Body and verbal responses indicate active listening, students ask questions and build on others comments	Students respect and encourage the views of others, they ask questions and clarifications and build their arguments also based on views of others
Contributing	Students do not contribute any positive way	Some students contribute positively	Most students contribute positively	Students consistently contribute
On task behavior	Students reflect inconsistently they do not follow through the completion of the task	Students work only for some time and expect support from teachers	Most students are able to assess their strength and work towards the completion of the task	Students exhibit consistency on task behavior allocate work among themselves and completed the task on time
Group Structure & Functioning	Task is not completed on time even with the assistance students find it difficult sequencing the steps	Division of tasks and responsibilities inefficient, students waste time, unable to plan the sequence of steps therefore rush to complete the task	The leader of the group assigns responsibilities and tasks, students complete the tasks in a sequence of steps.	Members of the group take responsibilities and roles; they complete the task in clear and logical steps
Demonstration	Unable to explain details of the task completed	Able to explain some portions of the task completed - those areas where the students have understood	Able to give a cogent step by step development of the idea and illustrate the purpose of the group work	A confident explanation of how the group work was thought through and each step was explained by different participants in the group showing the combined effort

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ASSESSMENT – A TEAM GAME!

Prerna Shivpuri

There might have been instances in your life where you were asked to reflect and evaluate your own capabilities and you would have either taken a while before responding or penned down unsure words about your own self!

It is rather surprising that for most of us, this capacity of self – reflection or evaluation doesn't come so naturally. Looking back at the ground where we are supposed to develop all our skills and abilities – our schools hardly give any attention to this ability that is not only critical for our professional lives but also impacts our personal life to a great extent. The entire paradigm of evaluation is based on the belief that the knowledgeable adults in a child's life – the educators impart knowledge to the students and they alone need to evaluate and conclude about how well the student has been able to learn. There is definitely a very crucial role that the educators have to play in evaluating the learning of their students. But it is even more important to see this process of assessing student's learning as a **collaborative process** rather than something that an educator concludes for the student.

Why choose Collaboration?

One of the principles of true teaching - *"The mind must be consulted in its own growth"* stated by Sri Aurobindo- indicates how essential it is for a learner to participate in the decisions and processes of his/ her own learning and growth. This holds true not only for learning but also for assessment of learning. Research in Australia (Midgley and Petty 1983) showed that recent graduates rated the ability to assess their own performance among the most important skills used in their jobs, but one that their schools or degree courses had almost totally ignored. In such a scenario, it seems almost imperative to inculcate this skill of self – evaluation in our educational spaces. One of the most effective and common ways of working towards this skill is for educators to collaborate with the students for their assessments. There are three critical reasons why a collaborative approach can prove to be effective:

- ***A pursuit of excellence:*** In this approach, when teachers work with students on evaluating or judging how well they have learnt the required skills, concepts, etc. the underlying intent is to constantly raise their benchmark of quality and achievement. This does not in any way include a competitive element as a means to progress but on the other hand, enables students to understand their own individual learning styles and abilities and direct their learning towards excelling in the areas they decide for themselves. Another reason why excellence would manifest as a quality within children in this process is that they develop the habit of constantly looking at their own work objectively and critically; are able to invite feedback from teachers and peers and work on it and persevere till the time they reach the desired benchmark. These are in fact the very foundational abilities required for anyone to excel in an area.
- ***Building ownership of learning:*** It would be a disempowering process if we view children as a group of individuals who are receivers of knowledge from adults in their life and have

no say in their own learning journey. Talking from a constructivist point of view, learning is much more meaningful and rich when students construct knowledge for themselves and have a sense of responsibility for their own learning. By going through the process of evaluating collaboratively, we enable students to share the ownership of the entire learning process with their educators. This has implications at all levels – the curriculum and planning, the classroom pedagogy and how the teachers are being prepared to hold a collaborative space.

- ***Developing high order thinking skills:*** with most schools these days promising to develop life – long learners, higher order thinking skills (HOTS) is a term most of us would have encountered. The reason these skills are getting more and more attention these days is the fact that these skills have the potential to enrich students' learning to a great extent and empowers them to develop a sense of discernment which holds importance in all spheres of their lives – academic, personal, social and so on. As students collaborate with their educators to reflect, judge, evaluate and critique their own learning, they are actually developing these fundamental skills that will aid their learning as well as make them better thinkers and decision makers in all aspects of their lives.

In fact, if we consider the perspective that the above three reasons indicate, there is a major paradigm shift required. When students' evaluations are done with the intent to use them as inputs towards their further learning, it becomes assessment *'for'* learning in contrast to assessment *'of'* learning'. The latter being the usual approach in most of our schools. However, it is essential to gauge how much and how well the students have learnt, but that should not be the point where the learning cycle ends. It is what we do with the information that we have about student's evaluation that matters more and serves as a critical ingredient in designing further learning for students. Author and consultant Rick Stiggins in his article 'Assessment Through The Student's Eyes' explains assessment for learning really well:

"Assessment for learning provides both students and teachers with understandable information in a form they can use immediately to improve performance. In this context, students become both self–assessors and consumers of assessment information. As they experience and understand their own improvement over time, learners begin to sense that success is within reach if they keep trying. This process can put them on a winning streak and keep them there.

When we use assessment for learning, assessment becomes far more than merely a one – time event stuck onto the end of an instructional unit. It becomes a series of interlaced experiences that enhance the learning process by keeping students confident and focused on their progress, even in the face of occasional setbacks."

Having said this, the big question is always 'How to bring this vision into action?' as what brings success to any approach is its ability to manifest into concrete implementable practices. Some strategies that can bring this vision into action are given below.

Strategies for Collaboration

In the daily routine of school, one might think that it would be a tall order to establish collaboration between students and teachers for assessments. But the fact is that there are a range of simple and effective strategies that can be adopted for assessing student's learning collaboratively. Some of these strategies are shared below:

- ***Planning structured assessments:*** the success of the assessment practices depend greatly on how educators plan for them. In one sense as educators, we should literally do backward

planning by keeping the end in mind while planning. As we decide the learning goals for our students we simultaneously need to think of how we will know if what we intend to teach has been learnt by the students. Structured tools and templates of assessment therefore have a great role to play here and need to be done at the time of putting down the learning goals and not be kept as an end task. It is necessary to carefully choose the tools of assessments according to what needs to be evaluated. From a range of structured tools such as rubrics, assignments, tests, work samples and so on, we need to pick up the one that best suits what we want to assess. For instance, language skills can be effectively assessed through rubrics, whereas social and emotional development will need a different kind of tool e.g., teacher's narrative observations. However, talking about collaboration, we can't miss the role of students in this stage of planning. Wherever possible, we can devise the learning targets along with the students. Simultaneously, the students and educators collectively come up with assessment criteria and tools to evaluate learning. Students should know beforehand and participate in deciding the criteria on the basis of which they will be evaluated.

- ***A 360 degree view:*** Collaboration can mean more than the partnership between students and educators. It can be extended to other stakeholders who form a part of the child's immediate community and can evaluate the child on at least some dimensions. Having peers and parents of the child as a part of the assessment process will provide a wider understanding of the progress of the child while also making the process of evaluation fairer, as involving several perspectives will reduce subjectivity and indicate clear patterns at the time of concluding. While peer evaluation can be done through classroom practices integrated in the teaching method, parents' evaluation can be done at specifically designated intervals where parents are given criteria and formats to assess their child.
- ***Student led conferences (SLC's):*** SLCs are forums where students share their work and their learning journey with others. These could be teachers, peers, parents or any other audience. The conferences are in a sense individual presentations where children share their work and explain what they have learnt and how and the audience can question them on anything about their work. These forums help children reflect about their learning and understand their strengths and work on areas and get feedback from others that they can use to further improve their learning. Though the presentation is an individual exercise by the student, the preparation towards these is a collective effort of the students and teachers.
- ***Student Portfolios:*** A portfolio is an effective way to see the learning curve of a student. It is a collection of a student's work in a chronological order either in the form of a physical file or folder or a as a soft copy document or presentation, depending on what the school chooses. Evidences showing a student's learning of skills and understanding in each domain is organized in categories in this folder. There is no one single format in which a portfolio is to be made but essentially portfolios should cover all areas of learning, contain work samples and should be able to show the student's progress. Portfolios can be managed by students themselves where they choose what samples they want to put and what they want to share with the audience. Teachers work with the students on their portfolios by sharing the purpose and the guidelines and thereafter giving them feedback on their work and helping them decide work

samples and giving suggestions by organizing it.

Collaboration in Practice:

Fortunately, *(maybe as a consequence of the guidelines by the NCF 2005 and CCE requirements)* there are now many schools in the country that have adopted a collaborative approach towards assessments and have been working towards evolving their assessment practices. Having worked in one such school, **The Heritage School** *(an experiential learning school in Gurgaon)*, I got the opportunity to bring alive some of the above mentioned strategies for the students as a part of the assessment process of the school. The educators in the school have been able to plan structured formative and summative assessments in most of the curricular areas along with strategies to involve the students, peers and parents in their evaluation. I could actually see students developing as more reflective beings, who can easily talk about their strengths and weaknesses, critique their own work and share how can they work on bettering themselves!

In spite of the fact that the reality of Indian education system provides little space to bring such innovations, small steps taken by different groups of people across the country will go a long way in eventually impacting the whole system. Hopefully, the power of collaboration for assessment and learning on the whole will be more widely recognized and used.

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ASSESSMENT IN SCHOOL EDUCATION: WHAT DOES IT MEAN FOR A CHILD?

Ananas Kumar

The Indian education system has taken a step forward towards reviving the education system with the introduction of grading system in session 2009-10. This will help in reducing the pressure on students during exams. In the last five years the meaning of education has changed for students from imbibing knowledge to merely scoring marks, resulting in myriad forms of education policies.

As per reports, every day more than 17 students aged between 15-25 years commit suicide in India due to non-performance in the examination or an entrance test. Watching young children of the country succumbing to the undue pressure of scoring high marks is horrifying. One of the points to note here is the thinking of the society, which puts lot of pressure on students to 'perform'.

This pressure from schools, parents, peer groups and society takes away the youthfulness of a child. Further, a health report also supports that this often causes health hazards such as fatigue, body aches, eye weakness, stress and in more severe cases, depression (neurotic/psychotic.) Looking at today's education scenario, the Central Board of Senior Education has introduced educational counselors and child psychologists in schools to boost the confidence of young students and mentally prepare them for the board examination. This method has helped in reducing the stress and making them comfortable with the examination.

Understanding the board exam system in India and its relation with students is of great importance in present times. While coping with the expectations of school, parents and society and keeping pace with their talent, students face a lot of hardships. Thus, the implementation of a grading system and abolition of board exams is really a boon for students.

The grading system was introduced in 2008-09 from class I-VIII, reducing the exam stress. Extending the concept to class IX and X has further reduced the pressure, giving students an opportunity to explore other avenues. Following the US model, the implementation of the grading system is to bring in more practical education than the current theoretical method. This model prescribes a varied range of opportunities, providing children of all levels a platform on which to showcase their talent and pursue their interests traditionally. Class XI students were given subjects as per marks scored in Class X. This system often disappointed students if they scored low. Moreover, if a student didn't get the required percentage due to a poor score in one subject, then the entire percentage was affected. The grading system will give students relief. It will provide ample opportunities to students to excel in their choices.

Its implementation will help an average student to cope with the stress, though leaving a lot of toppers to question it. Students will be evaluated on a 9-point grading system, which will diminish the difference between a student scoring 99% and one scoring 91%. Both students will get the A+ grade. To make the grading system a success, parents and teachers need to acknowledge children's special assets and encourage them pursue their interests.

The strongest argument in favour of grading

system is that it is a qualitative assessment of achievement of a student not a quantitative one. The strength of personality of a person is determined on the basis of the quality of his work. Desirable changes in the behavior of a learner is determined on the basis of its quality and grades assigned to behavioural changes are the best parameter of determining quality.

In the grading system, grades instead of marks are assigned to the examinee on the basis of quality of his answer. Various grades referring to various qualities are pre-determined. An example will illustrate this point in which various grades ranging from excellent to very poor are given.

Quality	Grades
Excellent	O
Very Good	A
Good	B
Satisfactory	C
Average	D
Poor	E
Very Poor	F

On the basis of the quality of the question, the examiner gives various grades to different examinees by keeping in mind the parameters from excellent to very poor.

Methods of grading

There are basically two methods of grading used

1. Direct grading: In this method grades are allotted to questions directly on the basis of their quality. If answer written by the examinee is of very fine quality, almost incomparable to any answer, it will be considered excellent and grade 'O' will be assigned to it. If the quality of the answer is very poor, F grade will be assigned to it on a seven point scale as is the example given above. If there are more than one question in a question paper, say, seven and each question is graded differently by the examiner, then the final grade of the examinee will be calculated by using the following formula

Overall grade = Sum of grades / No. of questions

An example will illustrate this point. Suppose seven questions were graded by an examiner in the following manner on a seven point scale. Find the overall grade of the examinee

Grades allotted to different questions from first to seven = A, C, C, D, O, F, C

Solution:

Step I: Numerals are assigned to different grades from 1-7 in the following manner

Grades	O	A	B	C	D	E	F
Numerals	7	6	5	4	3	2	1

Step II: These numbers are put below the grades in the following manner

Assigned Grades	A	C	C	D	O	F	C
Numerals	6	4	4	3	7	1	4

Step III: These numerals are summed up and total is divided by the number of questions in the following way

Overall Grade = 6+4+4+3+7+1+4 = 29/7 = 4.14 = grade C

Though this system is easy to calculate, it has some limitations such as :

Determining the quality of an answer is a subjective process.It lies in the mind of the examiner and can vary from examiner to examiner. Thus different persons will grade the examinee differently, Even the same examiner cannot grade the same way because criteria of quality may change over a period of time.

An examiner cannot judge the quality of a question without evaluating some answer books of different examinees. This could take time. and if all the examines in the group are very

poor, the exact quality of a question cannot be determined.

2. Grading by Score Conversion: It is a mid-way approach between grading and marking and thus it can remove some of the defects of both systems, i.e.

It classifies students into fewer categories and thus creates less confusion.

Qualitative assessment which is advocated by philosophers is possible here.

In this method, answer sheet of students are first scored in usual manner, then these scores are converted into grades on the basis of any of the two criteria given below:

Criteria A: Determination of grades by fixing range of scores: In this method different grades are allotted to student on the basis of ranges of scored, e.g. seven point scale can be prepared in the following manner

Criteria B: Determining of grade by preparing a

Grade	Scores
O	Above 91%
A	81% - 91%
B	61% - 80%
C	51% - 60%
D	41% - 50%
E	33% - 40%
F	Below 33%

merit list of all students has been adopted by CBSE in India. In this method answer sheet of all the students are evaluated in a usual manner. Then subjectwise merit list of all students is prepared. Those students who score less than 33% in a particular subject are considered failed in that subject and they are allotted grade E. The remaining pass students in that subject are equally divided into eight sections. 12.5% passes students who are on the top of the merit list are allotted grade A1, next 12.5% students are allotted grade A2, next 12.5% students are allotted grade B1 and the last bottom 12.5% are allotted grade D2 and in this way a nine point scale A1,A2,B1,B2,C1,C2,D1,D2 and E are prepared.

Though this system is easier than another one but it has some limitations, such as:

It cannot work with hectic examination schedules where the purpose of learning is to pass the examination and nothing else.

It suffers from all those defects which annual system of examination has. Students start their study only when the examination is near.

After the examination is over, students do not start their fresh study before they get feedback from their exam's result.

So, we can say that though grading system is good but still faces the problem of how it can be tackled.

What some teachers think about the grading system

Mr. Thanak Singh Bisht (CRCC, Dundagaon, Uttarkashi, Uttarakhand) says the grading system classifies students into fewer categories and hence the tendency of cutthroat competition among them for solitary marks is checked. It decreases stress..

Ms. Soniya Saini (Asst Teacher, GGIC, Uttarkashi, Uttarakhand) says the grading system is a boon for weak students more than for bright students. It reduces the stress level of weak students very much but there should be some space to tackle weak students in such a system.

Mr. Bhupi Gusai (Asst Teacher, GPS, Balla, Uttarkshi, Uttarakhand) says, if this grading system between examinees of the same subject and between examinees themselves is possible.

Ms. Manju Rawat (Head Teacher, GPS, Dundabazar, Uttarkshi, Uttarakhand) says with the grades given in the board examination, a school can know at what level of teaching is present. If majority of students have got grade

C or D in a particular subject, then it can be concluded that teaching and preparation in that subject was definitely poor.

Mr. Naresh Lal Shah (Parent, Chunyalisaur, Uttrakashi) says grading system is a gift for weak students, but not for intelligent students, because there is an error in the division of grading system.

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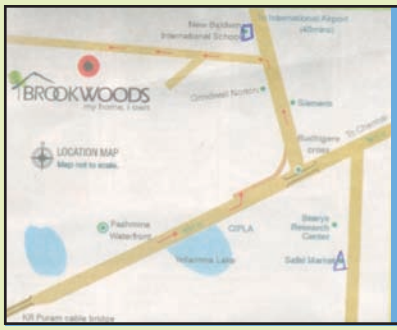
SOME IDEAS ON CREATING ASSESSMENT TOOLS FOR GEOGRAPHY

Tapasya Saha

As a Geography teacher one can use various stimulations to assess a student's understanding of skills and concepts in Geography. The following tools assess the concepts of observation and identification, understanding weather and seasons, making graph, creating symbols and making a legend and map pointing.



Q1. This is a cutting from the newspaper which shows the location of a new campus developed by Brook woods construction company.
Look at the sketch map given and create a legend that would help to read the map.
The legend should have symbols for the following:
Flyover, water bodies, the location of the site, market, school

Q2. Study the Weather Report and answer the following questions:

a) What is the direction of movement of the Jet Stream? Name the main cities over which it flows.

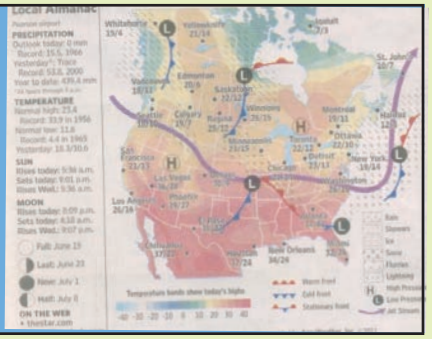
b) Name the places experiencing frontal rainfall.

c) Which area is experiencing rainfall with lightning?

d) What is the Normal high and normal low temperature of the day?

e) For how many hours does this region experience sunlight? Give a reason.

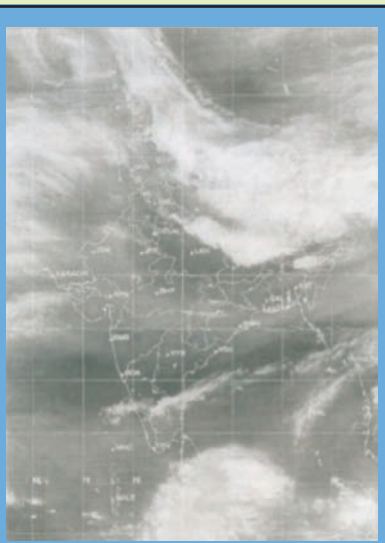
f) Why do you think the Lake region and the Las Vegas region have high pressure while the eastern coastal regions have Low Pressure?



A

C

B



Q3. Look closely at the three maps of India with cloud cover, and answer the following questions:

a) Which map shows the summer season?

b) Which one shows the monsoon season?

B'lore-bound train derails in TN; 1 dead, 33 injured

TIMES NEWS NETWORK

Chennai: One passenger died and 33 were injured when 11 coaches of the Muzaffarpur-Yeshwantpur Express derailed at Chitteri, 6 km from Arakkonam, at 5.50am on Wednesday.

The train had left Chennai at 4.30am. There were 750 passengers on the 24-coach train.

The passenger who died has been identified as Bodi Soren, 52, from Malda, West Bengal, who was going to Bangalore to look for a job. Attempts are on to trace his relatives. He was in the S1 coach. The last 11 coaches derailed.

Six passengers suffered serious injuries while 27 had

FULL COVERAGE | P 6

ON THE WRONG TRACK

Rescue workers at the accident site in Chitteri near Arakkonam on Wednesday

THE TRAIN | Muzaffarpur-Yeshwantpur Weekly Express

THE SPOT | Chitteri, around 6km from Arakkonam railway station

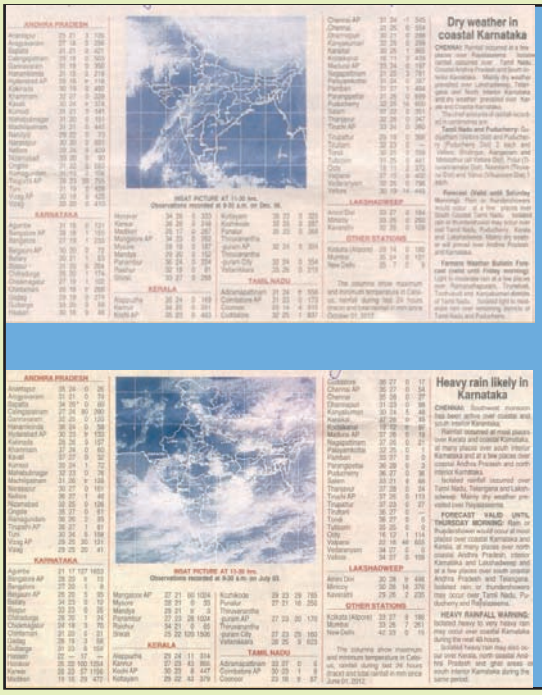
THE TIME | 5.50am, Wednesday

Q4. Look closely at the picture and read the highlighted news and also look at the map. Now answer the following questions:

a) Why are some people wearing orange jackets and yellow helmets? Who are they?

b) Locate the places named Muzaffarpur in Bihar, Yeshwantpur/Bangalore, Chennai, Vellore, Arakkonam and Chitteri.

c) With the help of an atlas draw the route of the 'Muzaffarpur-Yeshwantpur' Weekly Express from Chennai to Muzaffarpur (in Bihar).



A

Dry weather in coastal Karnataka

B

Heavy rain likely in Karnataka

Q5. Study these two weather report and answer the following:

a) Give reasons for the two statement -'Dry weather in coastal Karnataka' and ' Heavy rain likely in Karnataka'.

b) What are the features of weather?

c) What is the need for printing weather reports everyday in the newspaper?

d) What changes would you have made in your daily routine if the report predicted," very heavy thunderstorm followed heavy rainfall in the afternoon".

e) Show the maximum temperature of both the months with the help of multiple bar for the following places: (first colum shows the maximum temperature in degree celcius)

1. Anantapura in Andhra Pradesh. 2. Agumbe in Karnataka. 3. Alappuzha in Kerala. 4. Coonoor in TamilNadu. 5. Karavathi in Lakshadwip. 7. Kolkata. 8. Delhi 9. Mumbai.

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FORMATIVE AND SUMMATIVE ASSESSMENT

Sindhu Sreedevi

In recent years there has been a growing concern in improving the quality of education and there is a shift towards considering assessment as a means of improving learning. Assessment is an effective tool for a teacher to know about her/ his children. Properly developed and interpreted, assessment brings clarity on several aspects of the course such as: help in giving correct feedback about a child's learning or achievement. It clears the path to improved learning by providing information about the learning gap and gives information on the teaching learning process. The more information we collect about a child the more clarity it brings about his/her learning and learning difficulties.

In schools summative assessment has more visibility. It checks the learning outcomes at the end of a grade or unit or a term. It helps in knowing, to what extent the instructional and learning goals have been met. Kellough and Kellough view teaching and learning as reciprocal processes which depend on and affect one another. The assessment component informs how well a child learns and how well a teacher teaches. As we all know, the evaluation practices in the schools mainly focus on measuring knowledge and facts, neglecting other aspects of the process which can help in improving learning. This process needs to be frequent, interactive, and effective enough to help identify the learning difficulties and inform the teaching instruction. More clearly, these classroom assessments which we call formative assessments, inform both teacher and student. Hence there is a need to align assessment with the teaching process.

Formative assessment is the assessment that takes place in the classroom. The information that provided by this assessment informs child's learning as well as the teacher's instruction. It also provides feedback to the child about his/her learning and teacher about her/his instruction. To a teacher it tells whether a child has learnt the concept well, if the teaching caters to the need of the classroom or if the teaching strategy needs any modification. Though formative assessments appear in variety of ways, one of the strategies can be a group activity. For instance, Seeta, a primary class teacher, provides few objects like ball, boxes, pyramid, discs , triangles and squares She then asks children in each group to choose any two objects and spot the similarities and differences between them. Each group discusses the similarities and differences of the objects they have chosen and write them down. Seeta walks around the classroom as the groups discuss and observe each group record their conceptual understanding. Seeta uses this observation to record other activities, like the way they have distributed work in the group, the way they work in the group, their discussions in the group about the concept etc. Later she collects the write-ups. Next day, she makes copies of each groups' write up and hands them to each group to analyze the concepts, handwriting and neatness. Each group, then presents its views to the entire class. From the record she gets the information about the learning difficulties of that topic in the classroom and plans her next class to address these difficulties. She also interacts with the child who has not done the activity and finds out the

reason for his poor performance and takes the remedial class. Seeta has highlighted the value of assessment as learning through this activity. In this type of process, through observation, teacher records each child's understanding level of the concept and also identifies the ones who have difficulties and needs her support. After getting the child-wise information she gives her feedback and plan her instruction to address these learning difficulties. Seeta understands that moving to the next topic without addressing this learning gap will not help in building up the concepts. She conducts the remedial class with the child who faces difficulties in learning the topic.

Understanding the importance of peer assessment is another great step that Seeta has taken through this formative assessment. This example was one of the ways that formative assessments could be carried out in the classroom. There are several other ways to conduct this. Each child learns in a different way, therefore assessing him/her would be more effective if a teacher could assess them using different modes such as

Student interviews: Children are expected to answer series of questions orally. These series of questions are linked to each other to gauge the breadth and depth of their understanding.

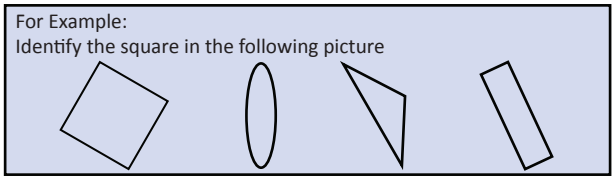
Observations: Teacher observes children as they are engaged in an activity, walking around the classroom helping and guiding them in their activities. This helps the teacher to understand the overall performance of an individual or of a group.

Questioning: This is the method commonly used in the classroom. Teacher gets information about child's knowledge by asking questions during the teaching process. It gives instant feedback to both teacher and the child and provides scope for change in instruction.

Discussions: Teacher can initiate discussion by posing open-ended questions in the class and children discuss on it. The goal is to develop critical and creative thinking skills.

If teachers could use formative assessment as the framework for teaching, then there will be a change in the way they interact with children. This assessment facilitates learning, provides feedback to the teacher for adjusting his/her instructions that cater to the needs of children, provide feedback to children about their learning and diagnose the difficulties that are faced by the child in the topic. In short we can say that formative assessment is *'of'* learning.

It is important for children, teachers, parents and school authorities to know how much the children have learnt during the course of study. The assessment that takes place at the end of the course or a unit or term and the information from which is used for grading or promotion is a summative assessment. It happens when teacher assess the final product of children's work. It concerns mainly with the learning outcomes rather than the programme of instruction and it is the assessment *'of'* learning. We can consider a question like



This question helps a teacher to know whether a child knows the properties of a rectangle which was the learning outcome for the topic and also reflects the formative assessment that has been done in the class previously. Summative assessment has to include what the teacher has taught and reflects on the formative assessment. So the main purpose of summative assessment is to gauge children's knowledge, skills and understanding with respect to meet the learning curriculum of the course. Summative assessment is done further down the learning path to know

that the child has achieved the standards that the curriculum defines. By conducting a variety of summative assessments, the teacher will get a grip on his/her children's learning. There are many forms of summative assessments such as

Paper pencil test: students are asked to write a test at the end of a unit or term or course.

Written task: students are asked to write about a topic or an activity or an incident and a rubric is provided with this task.

Oral task: teacher asks students to narrate a story or an incident or a topic and s/he checks the skills and competencies that child has achieved.

Standardized tests: students write a test that is standardized in terms of content to fulfill conditions that they have to be met, for example, board examinations and entrance examinations.

In summative assessment it is important that the information that is obtained from all of the above type of assessments is used for recording students' achievement or grading or promotion purposes.

We all know the primary purpose of assessment is not to grade or rank children, but to provide feedback that informs decisions about their learning. Both summative and formative assessments have vital roles to play in children's learning process. Though the palette is different for each of them, the right balance between them have a great impact in one's learning. Formative and summative assessments support each other and should be viewed simultaneously. They may appear the same in some circumstances but the purpose and timing determines its label. The book 'Balanced Assessment Model' by Kay Burk compares both assessments like this: formative assessments are like training wheels that allow children to practice and gain confidence to ride their bikes in the school parking lot. Once the training wheels are taken off they have to face their summative assessment to be able to ride off towards the sunset only on two wheels. Lee Shulman called assessment the "union of insufficiencies" because he believed it is not possible to assess one's capabilities by using one or two tools. It should be a combination of several assessment strategies from formative and summative assessments that provide information about a child's strengths, weakness, interests, skills and motivation.

The positive impact of formative assessments has been widely accepted by educators and curriculum designers. There could be several barriers for actual implementation of good formative assessment as we all know that this kind of assessment is a very intensive and continuous classroom process, carrying out this assessment has more challenges. Moreover, the main purpose of formative assessment is how the information obtained through it is used to further learning.

A teacher uses various assessment strategies to gather the information about the child. In developing such child centered activities teacher faces the difficulties to plan each step and assess across the predefined criteria, it may be due to the unpredictability of students' responses to the particular activity. We all know that each child learns differently and assessment should align with the way he/she learns. Big size of the classroom and extensive curriculum requirement is an obstacle for doing such intensive, interactive and individual assessment. In our context we have different sections for each grade and different teachers handle the same subject. In this situation the chances of interpreting and applying same criteria of an assessment can be different. This may lead to us to question the credibility of assessment. All of us can understand that formative assessment is continuous and elaborate process which consumes a lot of time. In adapting the intensive and interactive way of formative assessments teachers need to have

collaborative abilities in analysing the assessment information, interpretation and providing the feedback to children for improving learning. Reducing the size of the class at the primary levels will help the teacher to spend more time to understand and respond to the learning needs of children.

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‘USER-FRIENDLY CCE’

Shobhana Malini Verghese

The introduction of Continuous Comprehensive Evaluation [CCE], as part of examination reform in all schools across our vast nation, has made the general buzz around it sound professional with terms like ‘formative’ and ‘summative’ being used comfortably by teachers. This is a welcome development since it is our teachers who actually operationalize this initiative even in remote districts in the country. And this is largely due to the effort many State Governments are putting into training their Department of Education functionaries at the district, block and cluster levels, Head Teachers, Teachers … just about everyone involved! Even pupils have become aware of them.

After all the various conferences, conventions, committees and commissions that were held for at least a decade to put together this strategy to help extricate our children from the soul-destructive pursuit of and competition for marks, at first glance the move into CCE seemed appropriate and lifted my spirits considerably.

But closer acquaintance with the intricately formulated system brought further clarity that brought those elevated spirits straight down again. But this drop forced me to make a reality check about CCE. What follows are two views - one which seeks to reveal why CCE may actually be old wine in new bottles, and the other on some practical ways that may help make it work more productively. Here goes.

Conceptually, CCE is visualized to help eliminate the ‘pressure cooker’ syndrome in Indian schooling and thus result in a fairer, more consistent judgment of the quality of pupils’ learning. By moving away from cyclical tests and exams, the onus is laid more on teachers to judge their pupils’ achievement continuously through serial short [and very short] formal and informal ‘formative’ assessment along with formal ‘summative’ evaluation at the end of each term. Doing away with cyclical unit tests and the fearsome final exam at the end of each academic year that used to traumatize pupils right from the time they climbed out of their nappies was the stuff of national dreams. So far … so good!

However, monstrous devils lie in the details of CCE and how they have been interpreted leading to implementation that does not fulfill the vision. On the one hand, pupils are now constantly being quizzed, often through unannounced class tests that usually carry 10 marks or 5 marks or even 1 mark, which requires them to be fully prepared all the time in every subject if they wish to do well. On the other hand, teachers have to constantly conduct mini formative assessments in every curricular subject and co-curricular area to satisfy the continuous and comprehensive nature of the new beast. Not to forget the expectation that teachers must informally assess their pupils’ learning every day and award letter grades for the same too. A little gentle investigation in this informal area revealed that teachers beat the system by awarding grades arbitrarily with the common understanding that they will be level with the marks that pupils obtain in the myriad formal tests.

The burden remains and children continue to feel ‘like an ant in the middle of a football field’ as one English girl famously expressed it some

years ago! Hence, the systemic pressure cooker still hisses loudly!

In my view, irrespective of whether tracking of pupils is conducted cyclically or continuously, user-friendly CCE will happen only when it is referenced to systematically planned and expected learning objectives and outcomes that will guide classroom work. Only when there is a clear notion of what to look for in pupils' understanding of concepts and skill development as a result of the lesson, can the quality of learning be judged helpfully and consistently. The remaining section will deal with a couple of user-friendly tactics which will serve to increase the effectiveness of CCE a great deal.

A convenient starting point to increasing user-friendliness would be to clarify what the terms 'assessment', 'evaluation', 'formative' and 'summative' are meant to indicate. The word assessment originates from the Latin word 'assidere' which means 'to sit beside and coach to higher achievement' while evaluation refers to the placing of a value on something after careful examination. The word formative generally means the development of each part of learning even as it is progressing toward mastery of the whole, while the word summative most often refers to a total, comprehensive and cumulative judgmental summary of the whole of learning after it has been completed. When applied to learning in schools and classrooms, real formative assessment is the result of purposefully planned lessons which indicate clearly the goals of learning or expected learning outcomes which, when shared with pupils, become the hub for classroom activity, keeping pupils engaged with learning concepts and skills thoroughly while teachers facilitate successful mastery step by step. Constant reference to these objectives during classroom interaction will help teachers and pupils continuously assess achievement during the course of learning, gradually moving through each part of the lesson till the whole lesson has been grasped. And real summative evaluation is conducted at the end of each term/ year for the purpose of establishing the overall quality of learning.

Put differently, formative assessment can be referred to as 'Assessment FOR Learning' because, with the help of the shared and expected user-friendly learning outcomes, its purpose is to constantly develop and raise pupils' achievement during learning. And, summative evaluation can be referred to as 'Assessment OF Learning' because exam questions are also referenced against the same expected outcomes but only for the limited purpose of judging and establishing the quality of learning by assigning a value or mark after learning has been completed.

The table on the next page will deepen understanding of the nuances around both these approaches inherent in user-friendly CCE:

User-friendly assessment for learning will thrive in classrooms where pupils ask rather than answer questions as they interact with the work they do, where they understand what/why they are learning and receive attention and feedback when they need it, and in so doing, raise their own standard of achievement. To promote good thinking and learning, there's no substitute for teachers sharing learning objectives and targets at the beginning and checking/assessing achievement at the end of each lesson, providing regular and descriptive feedback, encouraging independence in learning and adjusting teaching to learners' pace and needs. This constant formative assessment for learning can then be followed by periodic summative assessment of learning in order to establish the quality of learning and through it, motivate pupils to raise their standard of achievement.

ASSESSMENT FOR LEARNING IS FORMATIVE During Course of Learning	ASSESSMENT OF LEARNING IS SUMMATIVE After Completion of Learning
Forward looking since pupils move ahead steadily and confidently by assessing their progress against shared and expected learning outcomes	Backward looking since teachers evaluate and summarize quality of pupils' learning after it has been finished
Constant since teachers and pupils are continuously assessing progress and dealing with blocks [if any]	Cyclical since it is conducted periodically
Divergent since pupils develop independently and at their own pace	Convergent because tests and exams require the same output from all pupils
During Learning since pupils' assessment of their progress is immediate with the teacher's facilitation; pupils always know where they are, where they need to get to and how to get there	End of Learning since examination of achievement is conducted after learning
Descriptive since assessment is aligned to the shared learning objectives that indicate what the purpose[s] of the lesson is and what the concepts and skills that need to be mastered are	Judgmental since the purpose is to evaluate quality of learning
Remedial since pupils can constantly seek the teacher's help in clearing doubts or obstacles which may be hindering their achievement as the lesson progresses	Non-Remedial since purpose is evaluation without indication of how to improve learning
Qualitative since teacher and pupils can judge the quality of learning against the shared objectives on an on-going basis and work toward raising standard of achievement	Quantitative since the reference is in terms of marks and grades
Teacher + Pupil Oriented since assessment is the result of constant and dynamic classroom interaction between teachers and pupils	Teacher Oriented since evaluation takes place without any interaction between teachers and pupils

As a final thought, it would do well to judge the effectiveness of any strategy by its impact on the main users' core need i.e. how well pupils' learning takes place is the real litmus test. This is not rocket science … good teachers have always known it instinctively and have achieved good learning by their pupils without undue stress or resistance.

Hence, CCE can translate into resounding success if interpreted and implemented correctly. Only then can it become an effective strategy and help to reduce the unyieldingly high pressure that still characterizes Indian schooling.

User friendly CCE will flourish only when the systemic pressure cooker purrs softly!

Shobhana *currently works with the Foundation as a consultant and brings several decades' experience in school leadership in India and abroad with her. Earlier as a school principal, her passion had been about how pupils actually think and learn in the classroom and how their learning outcomes are assessed. As an academic / instructional leader in the schools she has led, her thrust areas included working with teachers to understand and use ways that would increase pupil-centricity, and effective teaching-learning-assessment practices that would promote this focus. Later, she worked with a group of schools to develop school-wide quality assurance strategies that would help them in self-evaluation and need-based school improvement planning. Shobhana's interest in 'Assessment For Learning' was developed greatly during a Fellowship at Cambridge University, UK in 2005 where she worked with this approach in considerable detail. She can be contacted at shobhana.verghese@azimpremjifoundation.org*

WORKSHOP ON CCE – A THOUGHT

Mahuya

There has been a paradigm shift in the way we look at assessments today. The older system (traditional examination system) of assessment and evaluation was mainly based on paper-pencil tests and a lot of importance was given to rote learning and memorization. It focused only on measuring the knowledge and understanding level of the child. Marks and ranks which were awarded, pointed out the learning level reached by the child at the end of a semester and his / her position with respect to other peers in his / her class. There was no scope for remediation. It gave least importance to the development of skills and higher mental abilities of the child as well as his overall personal development. The progress of learning made by the child, over a period of time, was never evaluated. All of this created a lot of anxiety, stress, frustration and even humiliation amongst children as well as their parents. Such examination system is a misfit for the 21st century knowledge-based society which wanted children to become innovative problem solvers. Hence there was an urgent need to replace the old system.

The Central Board of Secondary Education (CBSE) introduced a new scheme of evaluation in 2009, termed as Continuous and Comprehensive Evaluation, or in short CCE. This is a school–based evaluation system integrated with the teaching learning process. It believes that assessment should not be seen as a one-time activity outside teaching-learning but should be in continuum and built into the teaching-learning practice. This new scheme of evaluation also looks at the holistic development of the child (comprehensive) and therefore it covers both the scholastic (subject specific) and co-scholastic (life skills, attitudes, values and co curricular) aspects. Both these aspects of the evaluation process will be assessed through Formative and Summative Assessments. Instead of giving marks and rank, grading system and percentile rank were recommended.

So what does this new system of evaluation demand from the teacher?

It is obvious that the teacher's role and responsibility has increased significantly. The teacher is no longer a person who merely imparts knowledge to the child. The teacher now needs to understand the child in a holistic manner – observe the child in both formal and informal situations and maintain a daily observation record of the child's behavior in an unbiased way. The teacher - while teaching - needs to identify the learning difficulties faced by the child, make necessary interventions and give timely feedback about the child's progress to his/her parents so that corrective and remedial measures can be carried out and the child can reach the expected standards.

Learning styles differ from one child to another. In order to cater to every need of the child, the teacher needs to develop variety of tools and techniques to carry out assessment. For each of the activities, the teacher has to develop descriptive indicators to assess the child's performance.

As per CCE recommendation of giving grades and percentile ranks, the teachers' workload of making the report card entry has now become an exhaustive and time consuming process.

Are teachers equipped to carry out the new evaluation system?

Considering the high student-teacher ratio in most of the schools in India this is quite a challenging task for them. Moreover, the majority of teachers (when they were in school as students themselves) were taught by the traditional rote-based manner and are conditioned to evaluate the child's performance only through paper-pencil test . Now they are being asked to assess the child holistically and that too through multiple tools and techniques of which they have minimal or no exposure.

While having informal conversations with teachers on CCE-training, one thing that has surfaced prominently is their stress. Reading about the new scheme in manuals is one thing,but implementing the same in the class requires a lot of hand-holding in the initial stages. The teachers therefore look at trainings and workshops on CCE as some form of"messiah". My understanding is that the majority of teachers face problems when it comes to planning activities for formative assessment. They are also not very clear about the indicators.

The following is a suggested roadmap showing the process involved in carrying out formative assessment.

The first step is to choose a concept to be taught in the class – for example the teacher has chosen the topic 'animal kingdom'.

Next, is to identify the learning outcomes of the chosen concept. Taking the same concept as mentioned above, the following can be the expected learning outcome:

After completing the suggested activity, the students will be able to –

- list the names of animals and birds
- identify different birds and animals from a givendescription
- classify the animals into different types (birds, reptiles, insects and mammals)
- develop a basic knowledge of the habitat of each animal
- develop the skill to inquire
- present their findings through a journal
- work in groups

Based on the learning outcome, the teacher needs to devise an assessment strategy (activity) for the concept. The skills and competencies that the teacher wants to develop in the child should form the basis for choosing the activity. Taking the same example - in order to teach about animal kingdom the teacher planned a field trip to the zoo. Before the trip, the students were asked to prepare a list of questions for interviewing the zoo keeper. After the trip, based on the information gathered, the students in groups had to prepare a journal and present their findings to the larger group.

In order to assess the various attributes in the child (both scholastic and co-scholastic), the teacher needs to develop the descriptive indicators.

One of the characteristics of an indicator is that they should be observable and measurable. For example we can never have an indicator measuring the 'understanding' of the child. The reason for this is while teaching a concept if the teacher wants to find out whether the children have understood the lesson and asks 'have you understood?' the child may say 'yes' even if he / she has not understood (or misunderstood) the concept. Therefore the teacher should devise various ways to check the understanding like asking the child to 'explain' or 'deduce' or 'to represent the concept taught diagrammatically' and if the child can do this it means he/ she has understood. Similarly, for co-scholastic indicator, it is prudent not to have an indicator saying 'the child displays leadership qualities'. We need to elaborate the word 'leadership' by having indicators like 'takes initiative', 'listens to others', 'makes decision 'etc.

It is easy to write the indicators if they are connected to the objectives or learning outcome of the chosen activity. An example is shown in the table given below:

LEARNING OUTCOME/ OBJECTIVE	DESCRIPTIVE INDICATORS
Describe the physical characteristics of the animals found in their surrounding	The child is able to identify the animals in their surrounding based on their physical description The child is able to draw a picture / sketch of the animal described
Classify the different types of animals (mammals, amphibians, reptiles, insects and birds)	The child is able to group animals according to their types
Develop a basic knowledge about the habitat of the different animals	The child can match the habitat of the animals from a set of flashcards showing animals and their habitat
Develops an understanding of the food of the animals	The child is able to draw the food chain
Prepare questionnaire for the interview	The child is (a) able to identify relevant questions for inquiry (b) confident in asking questions to the interviewee
Preparing the journal	The child (a) is able to organize the information collected in a sequenced manner (b) displays creativity / sincerity in writing the journal
Working in groups	The child (a) Works with ease with other members of the group (b) Listens to others (c) Takes initiative in group work (d) Helps others in need (e) Displays sensitivity to his/ her peers

After arriving at the descriptive indicators, the teacher needs to classify them into scholastic and co-scholastic, which will help the teacher arrive at a holistic assessment of the child.

The above example shows how the teacher has integrated assessment into teaching – learning process.

Formative assessment can be done in many ways – through role play, quiz, debate, project work etc. Depending on the content and the objective, the teacher has to choose the activity and develop either indicators or check list or rubrics for assessment.

In Conclusion

The success of CCE depends on the teacher as they play the leading role in implementing the same in the classrooms. In each of the training workshops - along with developing their perspective on CCE - there should be practical sessions on aspects like (a) how to plan activities and assess the child, (b) develop indicators, document and maintain records, (c) build parameters for making checklists, rubrics, converting grades into marks, calculating percentiles and so on

As one workshop is not enough, it is necessary to plan for a series of workshops with teachers and trainers need to demonstrate the practical aspects of (not only the theory behind) the CCE methodologies to the teachers from Day 1 – for better appreciation and understanding.

The first one (or two) workshops should emphasise on the practical aspects – along with the theory of building perspective – where trainers need to do some hand-holding to enable teachers to get the required exposure on the applicability of CCE methodologies

The next workshops – when teachers are reasonably conversant with CCE guidelines – need to focus on their readiness on their doing the activities that were taught. In these sessions,

trainers need to play the role of facilitators / guides.

These days the stress on teachers has increased considerably as they are expected to follow the new CCE regulations for appropriate adoption in their respective schools. It is prudent to assume that teachers – when they come for training - would appreciate being appraised of the relevant techniques – with examples – that are easily deployable in their day to day working life.

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SECTION C

THE BIG PICTURE

HOL(E)-ISTIC EDUCATION

Sharanya Sudhakar, Sonal Raja
and Vijayalakshmi Iyer

Ask parents of today what they want their children to become when they grow up. Some may respond with the exact name of a profession. From the classic doctor or engineer to the so-called more 'open-minded' ones choosing music artiste or sports player! Whatever the profession these parents choose, for most the basic premise is for their children to pursue a livelihood with passion and one that provides for financial sustenance. Along with building capabilities for economic success, these parents would also like their children to develop life skills that nurture in them a sense of self and abilities to live harmoniously with and in one's milieu. Then there may be those who will delve into an all-encompassing aspiration for a well-rounded individual! One who has unique ideas, aesthetic appreciation, with humane thoughts and the conviction to follow through on those in one's deeds. For these parents, financial security of their grown – up children is a by-product and a guarantee of a balanced education. And a few more may believe that education means all of these and more!

Juxtapose these individual expectations and aspirations from education through schooling to those of society's. If expectations from schooling reflects a society's views of what it values and wants to nurture in its future citizens, then the National Curriculum Framework (NCF), 2005 is one document that we can refer to see what we as a country value. The aims of education listed under the NCF '05 can be seen as the nurturing of the unique potential in every child, through individualized attention and care, in all areas of development viz. language, cognitive, moral, emotional, physical and social. So to speak a 'holistic' development! NCF 2005 aims at connecting knowledge to life outside the school ensuring that learning shifts away from rote methods. It recommends a curriculum that goes beyond textbooks and examinations that are flexible. The holistic development that the NCF'05 refers to is a result of various everyday experiences of a child and is not restricted to any subject or classroom. Continuous and Comprehensive Evaluation (CCE), still in its nascent stages of understanding and implementation, is one step towards looking at the all-round development of a child by shifting away from examination-driven teaching.

The proof of the pudding is in the eating. So a closer look at the schools' processes and procedures should help us see the extent of resonance of these philosophical 'big' ideas, as aspired for in our policies, in practice. Mention of 'ideal' classrooms quite often conjures up images of seats all lined up perfectly, with students seated quietly, facing the teacher as s/he lectures to the class regardless of the students' receptivity. This still is predominantly how teaching-learning happens in a lot of classrooms in our country! It is prudent to state upfront that while there is no contention about the value of lecturing or tutorials in the teaching-learning process, the indiscriminate use of it with no other modes of engagements in the classroom is a serious concern. It perpetrates the practice of approaching children's learning as an extremely passive exercise. Learning, then, is presumed to be synonymous to children collecting information to fill their minds and regurgitate it at the behest of a test, which attempts to check just that! The processes in such classrooms assume teachers

as the bearers of information, which needs to be passed on to the students, without involving the students' discretion or participation. The focus is also skewed disproportionately towards learning the 'what', i.e., the content while 'why one needs to learn it' or understand 'how one learns it' is completely side-lined.

Typically, the syllabus of the conventional subjects like science, language, mathematics and social science is pre-decided. This implies that the content & the competencies that a pupil needs to master through the academic year are decided at the beginning of the year. The objective of the teacher is to transact the whole syllabus and test students at pre-decided intervals for mastery over the content. Unfortunately, the competencies that the students are expected to demonstrate are limited to recalling information, taught in class or as written in the textbooks, as a proof of their learning. This is considered a satisfactory indicator for the teacher, the students, and the parents to know how much learning has happened. The focus is hardly ever on understanding, application, analysis, evaluation or creation. And what is also ignored in the process are the different so called 'non-cognitive' skills that can be nurtured in the students, based on the content viz. reasoning, cooperating, communication, problem solving, responsibility, perseverance, creativity, appreciation etc., which are an integral piece of the aims of education as per NCF'05.

Compounding the issue is the existence of the unscientific yet prevalent notion of developing the so-called 'cognitive' skills in children only through subjects like mathematics, science and other 'academic' subjects. While, the lesser recognized 'non-cognitive' skills are predominantly associated with the 'non-academic' subjects like sports, music or art. This traditional distinction between the cognitive and non-cognitive seems to be only superficial as no mental process be it of reasoning, cooperating or empathising is devoid of 'cognition' (defined in the oxford dictionary as related to the mental activities involved in acquiring and processing information). While there is a lack of a clear definition of cognitive and non-cognitive skills, there exists a general consensus on some skills that fit better under one category than the other. For example, be it in a classroom or on a sports field, planning, problem-solving, remembering rules are parts of the larger activity of co-operation. But based on aforesaid classification, of these skills, problem –solving, remembering-rules are accepted more under the cognitive domain while planning and co-operation are seen to fit to better under the non-cognitive one.

This is not to suggest that an independent syllabus needs to be drawn up for each of these skills or competencies. On the contrary, it would be against the spirit of nurturing such competencies to have a syllabus that specifies a 'list of contents' that a student should become familiar with during the academic session. There are two reasons for stating this. First, the evidence of development of the 'non-cognitive' skills is not in knowledge of the skills but in its practice. Secondly, the skills are fluid i.e. knowledge of the skill, or the ability to demonstrate it, does not guarantee its practise in everyday life. Say, for example, Rekha refuses to assist Seema in academics only because Seema belongs to a different socio-economic background. Rekha knows that it is desirable to help others, and has also mastered the subject in which she has to provide assistance. But, the social-economic difference restrains her from helping someone else. Exposure to more 'content' or stories on sharing and co-operation is probably not what will cajole Rekha to help Seema. Hence, as illustrated by the example, knowing certain desirable attributes does not always ensure its practise in everyday life. The skills are displayed depending on various factors such as motivation, consequence, and context. It is, therefore, difficult to assess non-cognitive skills through one-time assessment, be it paper-pencil test or a situation test. Therefore, conclusions about a child's 'non-cognitive' skills have to be in multiple

instances and through multiple modes.

Keeping in mind our national aspirations from education and the practical issues that exist in achieving those, attempts are being made to change teaching practices to be more child-centric. The intention is to make pupils feel part of the learning process through interactions with both their peers and teachers. While the students and the teacher explore the facts of a subject, a healthy regard can also be maintained for the process of learning it. To achieve the aims of education (as envisioned by the NCF'05), it is important that we focus on 'how' children learn, and 'why' something needs to be learnt instead of focusing on only 'what' is being learnt.

To illustrate, consider a teacher who facilitates her students' learning on the topic of rotation & revolution of the earth. She asks them to think what would happen if the earth stops rotating on its axis or its revolution around the sun. Using models of the solar-system, the teacher then helps them to simulate the effects of rotation and revolution. She uses the strategy of questioning to help them visualize these phenomena and the effects of these movements or their absence have on life on earth. The children then try and reason what would happen in each of these scenarios. The teacher doesn't pose questions about the usually rote-learnt facts like the number of rotations of the earth around its axis or the duration of a revolution around the sun. This example illustrates the regard to the process of arriving at their deductions as much as the final conclusion. As the students delve into higher levels of thinking - analysing and evaluating the content, they also engage with each other, putting forth their points of view, reasoning with and attempting to convince each other. These processes are nothing but skills of reasoning, problem solving, thinking creatively, negotiating, and working co-operatively, which are usually clubbed under 'non-cognitive' skills.

Similarly, to assess students for attention and persistence (commonly clubbed under non-cognitive skills), a context is quintessential. This context could be a mathematics or music class and a teacher could observe and check whether a student is being attentive to the instructions and procedures to solve math problems or alternatively to instructions and techniques of playing an instrument respectively. So, contrary to common belief that sports, art & craft and other 'co-curricular' activities are the specific areas through which 'non-cognitive' abilities can be observed, assessed or developed, these can be done throughout the time that the child spends in the school, irrespective of subject or activity.

The intention behind the above examples and arguments is to highlight the benefit of looking at the 'non-cognitive skills' as a part of all the things that a child learns and does in the school, instead of seeing them separately. Instead of a life-skills course here and a moral value lesson there, a comprehensive approach would help alleviate the overwhelmed feeling in teachers and students about teaching and learning an additional subject. Such an approach would account not only for the learning of subjects but would provide a better chance to achieve the aims of education by looking into other aspects of it, thus making it holistic!

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IMPORTANCE OF DIAGNOSTIC ASSESSMENTS AS A PRECURSOR TO DIFFERENTIATED LEARNING

Kshama Chakravarthy

Importance of Diagnostic Assessments

Assessments are essential to determine how much a child has learnt. They are required in order to provide a complete picture of learning, information on learning progress of the student, to diagnose specific strengths and weaknesses in a student's learning, and to motivate further learning. Assessment is a continuous and an ongoing process.

Diagnostic assessments help to find out the thought process of the child, his reasoning for a particular answer. They help determine the level of knowledge and skill of the child. In our cloud based Adapative Math Learning Tool called Mindspark a diagnostic test on decimal comparison has been introduced based on research by Dr. Kaye Stacey from The University of Melbourne, Australia. The test, called Decimal Comparison Test (DCT), which has been attempted by over 3000 students in 2 years, classifies students into various misconception codes based on their thinking while comparing pairs of decimals. They are taken through specific remedial paths and finally given a post -DCT to check their learning.

DCT (Decimal Comparison Test):

Students' understanding of decimal numeration is mapped using a short test called the Decimal Comparison Test (DCT), where students have to choose the larger number from each of 30 pairs of decimals. The pairs are carefully chosen so that from the patterns of responses, a student's (mis) understanding can be diagnosed as belonging to one of a number of classifications mentioned later (shown in Step 1 in Figure A)

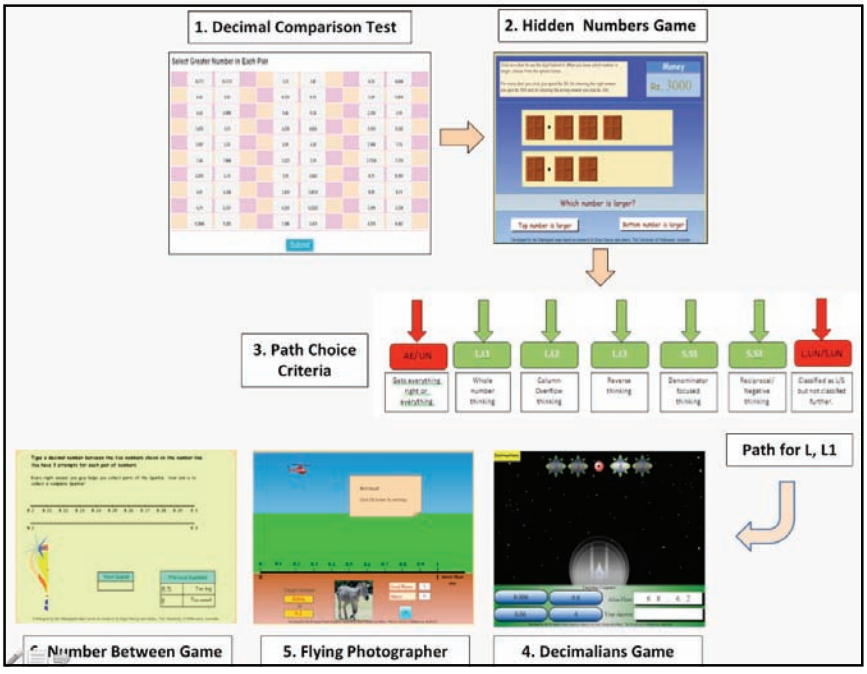


Figure A: Illustrated Flow of students in Mindspark's Decimal module

This is followed by a game called Hidden Numbers where students are presented with two decimal numbers with digits hidden behind closed doors; the task is to find which number is larger by opening as few doors as possible. Requiring similar knowledge to that required for the success on DCT, the game also highlights the place value property that the most significant digits are those to the left. (shown in Step 2 in Figure A)

The game helps us distinguish the two major ways of thinking students have- 'longer is larger' (the greater the length of the decimal,the larger its value) and 'shorter is larger' (the lesser the length of the decimal, the larger its value). Further specific questions and response of the student help us identify the logic behind their thinking.

Based on the misconception bucket the student is classified into, he/ she is presented with a specific order of questions and learning games that will help clear his/ her misconceptions.

Classification and details of the code:

PRIMARY MISCONCEPTION 'TYPE'	SECONDARY MISCONCEPTION 'TYPE'	HOW DOES THE STUDENT THINK?	SO.. WHAT'S HIS/ HER ANSWER?
'Longer- is- larger' (L)	Whole number thinking (L,L1)	Treats decimal portion as another whole number. Numerator focused thinking chooses 0.53 > 0.006 as 53 > 6, while String length thinking chooses 0.53 < 0.006 as 006 has 3 digits and 53 has two.	4.8 < 4.75 as 8 < 75
	Zero- makes- smaller thinking + Column Overflow Thinking (L,L2)	0 after a decimal point makes the number smaller. Considers 0.8 as 8 tenths and 0.75 as 75 tenths.	Correctly chooses 4.03 < 4.2 but incorrectly chooses 4.8 < 4.75 as 8 tenths < 75 tenths.
	Reverse thinking (L,L3)	Believes right most columns have largest place value, so compares from the right- most column first.	4.8 < 4.75 as 5 hundred 7 tens > 8 tens
'Shorter- is- larger' (S)	Denominator focused thinking (S,S1)	Reads a one digit decimal as a number of tenths, a two digit decimal as a number of hundredths and then incorrectly generalises the fact that 1 tenth is greater than 1 hundredth to 'any number in the tenths is greater than any number in the hundredths'.	4.8 > 4.75 4.6 > 4.75
	Reciprocal thinking or negative thinking (S,S3)	Treats decimal portion as something analogous to the denominator of a fraction or as a number 'on the other side of zero' or less than zero.	4.82 < 4.3 as 1/82 < 1/3 or as -82 < -3.

Different groups of decimal pairs to help classify the students **

To distinguish between the L* (fails group 1, passes group 2) and S*- type (passes group 1, fails group 2)

GROUP 1	GROUP 2
4.8/ 4.73	5.73/ 5.6

To distinguish among L,L1* (fails group 3 , passes group 4), L,L2 *(passes both group 3 and 4) and L,L3* (fails both group 3 and 4).

GROUP 3	GROUP 6
3.72/ 3.074	1.42/ 1.27

To distinguish between SS1* (fails group 4, passes group 5) and SS2* (fails both group 4 and 5).

GROUP 4	GROUP 5
8.512/ 8.51	1.4/1.2

**Refer to appendix for details on how the numbers are generated in each group

Remediation

The remediation path, once misconception codes are generated, consists of learning units on decimals concepts (which is fixed) as well as certain games (dependant on the misconception code) that help students learn the fun way and clear their misconceptions. For example, a student who has got the code L,L1 (Whole Number Thinkers) will initially get a game called Decimaliens which is a classic shooting game designed to link various representations of the value of digits in a decimal number. For example, the 4 in the number 3.46 is to be identified as representing 4 tenths, 0.4, 4/10 as well as in more difficult representations requiring reunitising as 40 hundredths, 400 thousandths.

Students with whole number thinking will be helped by this game where they realize that the place value of 6 in 1.6 is 0.6 and not 6 as perceived by whole number thinkers.

This is followed by a game called Flying Photographer (after attempting a few questions on decimals) where students 'photograph' an animal by clicking when a helicopter passes a specified number on a number line. This task requires understanding of decimal numeration and relative size of decimal numbers. Whole number thinkers usually expect 0.23456 to be very large and are surprised to see it close to zero).

The next game that appears (again after working on some questions on decimals) is 'Number Between'. The game is played on a number line, where students have to type in a number between a given pair of end points. The main situation which produces errors is that many students (including whole number thinkers) are unable to insert a number between, say, 3.46 and 3.47 as they think these are consecutive numbers. In one of the student trials, 2 students were made to play the game again after they had finished and this time they were able to place a number between 3.001 and 3.002 and also explain from what they observed that 3.001 and 3.002 are the same as 3.0010 and 3.0020 respectively and hence 3.0015 would come in between. Working on more questions like this, where the system shows decimals that exist between the given 2 decimals, challenges their thinking and many students are able to look at decimals in the true light.

Once students have completed their remediation path, they have a post- DCT (30 pairs of decimals where the larger decimal should be chosen- decimals dynamically generated) to record the codes again and check improvement if any.

Movement of students from one code to the other

preDCT & postDCT

	AE	L,L1	L,L2	L,L3	L,UN	S,S1	S,S3	S,UN	UN	Pre Sum
AE	509	0	3	3	1	3	0	0	8	527
L,L1	5	3	3	0	0	0	0	0	0	11
L,L2	17	1	13	0	0	5	1	0	1	38
L,L3	2	0	0	1	0	0	1	0	0	4
L,UN	0	0	1	0	0	0	0	0	0	1
S,S1	15	1	2	0	0	0	2	2	0	22
S,S3	2	0	1	0	0	1	2	0	0	6
S,UN	1	0	0	0	0	0	0	0	0	1
UN	13	2	1	1	0	4	1	1	10	33
Post Sum	564	7	24	5	1	13	7	3	19	643

The row headers correspond to the misconception codes in pre test and column headers correspond to misconception codes in post test.

Observations:

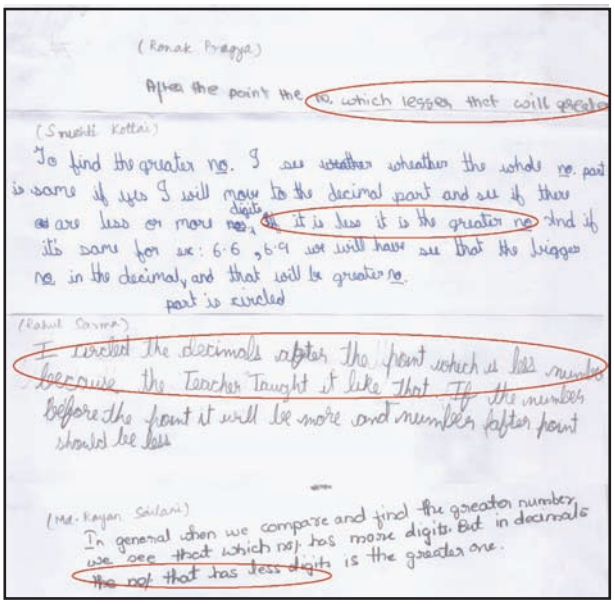
1) Roughly 80% of the students are Apparent Experts (AE) in comparison of decimals.
2) LL2 (Zero-makes smaller + Column overflow) and SS1 (Denominator Focused Thinking) seem to be the major misconceptions among students with 6% and 3% prominence respectively.
3) Out of 38 students in LL2 (pre), 13 remained in LL2 while 17 moved to AE in the post test. 6 have moved to S category.
4) Out of 22 students in SS1 (pre), 0 remained in SS1 while 15 moved to AE in the post test. 3 have moved to L category.

Student Interview Observations:

Students used various methods/ thinking to compare two decimals-

1) Given 2 decimals, see which one is closer to the next whole number or what should be added to bring it to the next whole number (Students may or may not answer correctly with this reasoning).
2) Add zeroes to make the 2 decimals of the same string length and then compare the 2.
3) Compare the whole number. If same compare the tenths, hundredths etc in that order.
4) 'Fewer digits is the greater decimal'. (Some can clearly explain this is because 'tenths is greater than hundredths')
5) After the decimal point the number which is lesser is the greater decimal. (Here they look at the value whereas in the previous case they look at the number of digits after the point).

Hand written responses of some students about how they choose the larger decimal in a given pair.



Points to consider for Version 2

1) The current format does not classify a student into 2 different misconceptions. He is either put under UN (Unclassified) category or, in case he is classified under 'L' or 'S' and there has multiple wrong understandings, is classified into 'L,UN' and 'S,UN' respectively. A provision to let students be classified into more than one misconception type should be considered.
2) Hidden Numbers can be used as a diagnostic test in the middle of the remedial path to check for student's learning and understanding after a couple of games, so that the path may be modified in case his misconception has shifted from one to the other during the course of remediation.

Appendix

$A_0.A_1A_2....Am$ is the larger decimal number

$B_0.B_1B_2....Bn$ is the smaller decimal number

GROUP	EXAMPLES	DESCRIPTION
GROUP 1 (L-S)	4.8/ 4.73 7.35/ 7.129	$A_1 > B_1 + 1$, B_2 free or $A_1 = B_1 + 1$ & $B_2 < 5$ X, Y belong to [1,9], keep m < n
GROUP 2 (L-S)	5.73/ 5.6 3.482/ 3.17	$A_1 > B_1 + 1$, or $A_1 = B_1 + 1$ & $B_2 < 5$ X belongs to [1,9], Y belongs to [1,4] keep m > n.
GROUP 3	3.72/ 3.074 5.25/ 5.046	$B_1 = 0$, $A_1 <= B_2$, X, Y belong to [1,9], keep m < n
GROUP 4	6.512/ 6.51 8.742/ 8.74	$A_1 = B_1 < 9$, $A_2 = B_2 < 9$, $A_3 < 5$, $B_3 < A_3$, keep m > n
GROUP 5	1.4/ 1.2 3.74/ 3.58	$A_1 > B_1$, X, Y belong to [1,9], keep m = n
GROUP 6	1.42/ 1.27 8.751/ 8.574	$A_1 > B_1 + 1$, $A_2 < B_2$, $A_3 < B_3$, m = n

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CHALLENGES OF INNOVATIVE ASSESSMENT IN MAINSTREAM SCHOOLING SYSTEMS

Uma Harikumar

"Here's to the crazy ones. The misfits, The rebels, The trouble makers. The round pegs in the square holes-The ones who see things differently. They're not fond of rules. And they have no respect for the status quo. You can quote them, disagree with them, glorify or vilify them. About, the only thing you can't do is ignore them, because they change things. They push the human race forward. And while some may see them as the crazy ones, we see genius. Because the people, who are crazy enough to think they can change the world, are the ones who do."

— Apple Inc.

Mainstream schooling systems, or state education as it can also be referred to, work on the basis of education of a community of children. The public nature of this system, means that children of different backgrounds, religions and classes mingle and mix naturally, learning to work and learn together in an environment that will prove stable for future years, through employment and life in general.

If defined literally, innovative assessment could be any form of assessment which involves the application of a new technique or method. However, innovative assessment has come to mean more than that. It is a term which encompasses a whole range of different techniques and methods, not all of which are new inventions. What unites them is a common goal: to improve the quality of student learning. Innovative assessment is also about what Heron (1981) called 'the redistribution of educational power' when assessment becomes not just something which is 'done to' learners but also 'done with' and 'done by' learners [Harris and Bell, 1990]. As defined by Rowntree (1977), it is about getting to know students and the quality of their learning.

Any initiative undertaken to improve assessment practice must take account of the formal assessments that are currently in use. In general, any changes in an assessment system must take into account the broader education transformation agenda of the system and have the support of key constituencies, especially education department officials and teachers.

The effective functioning of this innovation is determined not only by how this articulates with other facets of education, such as curriculum and instruction, but also by how well the various sectors (primary, secondary, higher) and structures within the education system articulate with one another. In an ideal context, all components of an assessment system would articulate perfectly and function effectively to produce the desired outcomes. However, this is difficult to attain in practice.

In principle, the innovative assessments may aim at a "level playing field" for all candidates. In reality, however, differences in "opportunity to learn" mean that not all learners are equally prepared, and this inequality is usually reflected in the outcomes. "The no pass or no fail principle throws up children with various capabilities into the Upper primary section of schooling. Trying innovative assessments with these groups is a huge challenge since you have no idea about where they are when they come." says Mrs Sraboni Mukhopadyay a secondary school teacher.

Our country, comprising multiple language communities, requires greater resources to adequately address the needs of all learners. All instruments need to be translated into one or more languages without undue bias against any group, additional analyses are required, and reports must be published in multiple languages In practice, there may be no alternative to the use of a single language but there are ways to mitigate some of the difficulties associated with testing (see Heyneman and Ransom, 1990).

Most new innovations experience an "implementation dip" – that is, student performance gets worse before improving. Improvements in student achievement may take as long as five years in primary schools, and longer in secondary schools (Fullan, 2001). Teachers working in innovative assessments will need extra support to understand where they may need to adjust practices.

If the design of the assessment in the school was based on class levels; then each class level would have different modes in their assessments. Subject teachers who used to teach the Primary 4 class would not know what was happening at the Primary 2 level Thus coordination between class levels appears to be important and necessary. Mrs. Aloka Mathur, a teacher, feels that "Innovative assessments are welcome but how do we cope with the numbers in the class? The teacher pupil ratio prevailing in the mainstream schools is a huge handicap for effective implementation. Teachers have to prepare themselves for heavy workload and maintenance of data in various forms.

Innovative standardized tests may not reflect the correct feedback since the content to be taught is left open to the teacher at the Primary levels .There is a wide difference even among the sections of the same class, hence a standardized test would not reflect the correct picture." Each teacher may grade or mark a pupil according to their own prejudices. So the teachers needed to have consensus in assessing pupils by sitting together to discuss about the marking criteria they needed.

The shortage of qualified and experienced teachers, as well as the low morale and motivation of the teaching force, can also be cited as one of the key factors innovative systems face as roadblocks. "The implementation of effective teacher development programs is vital for innovations to be successful" says Mrs Sraboni Mukhopadyay – a practising teacher. "Innovation is difficult in an inclusive schooling system where the pace of learning as well the heterogeneous background of students can be a huge challenge for teachers in implementing innovations effectively." A key focus of these training programs should be the use of appropriate assessment practices in the classroom and for examination purposes. Very often, there were new teachers joining the school in new academic years, some of them might not have the professional knowledge and skills in the new techniques of assessment. The school had to allow adequate time for these new teachers to establish their relevant concept and practice.

There is general agreement that the convergence of computers, multimedia,

and broadband communication networks will have a substantial impact on

assessment. The prospect of technology-based testing itself still seems rather remote, given the infrastructure requirements. Technology requirements can be a constraint, especially for those places that have little or no access to the required expertise. In addition, assessment tools and information must be made available to teachers in order to ensure maximum benefit to learners. The critical issue is striking a balance between the use of sophisticated hard and soft assessment related technologies and the successful transformation of the system. The

reasons include the pace at which technology has been introduced into schools, the organization of technology resources (e.g., computer labs), poor technical support and lack of appropriate professional development for teachers.

High stakes tests can lead to unwanted consequences such as a narrowing of the curriculum and an undue emphasis on test preparation. This is particularly harmful when the learner cohort is heterogeneous with respect to goals. Even if both the innovative assessment and education systems function effectively, they can still result in unintended and educationally sub-optimal consequences. For example, an effort to implement minimum levels of learning was appropriately accompanied by large-scale teacher training programs. However, within a few years, researchers found that teachers were teaching to the test (Govinda, 1998). Govinda (1998) notes that there were additional negative consequences since the net effect of the program reinforced rote learning and "transmissionist" teaching methods, and it helped generate a major after-school test preparation industry that served to increase the bias against learners from poorer backgrounds.

"Innovation— any new idea—by definition will not be accepted at first. It takes repeated attempts, endless demonstrations, and monotonous rehearsals before innovation can be accepted and internalized by an organization. This requires courageous patience."— Warren Bennis

As noted by Noah and Eckstein (1992a), changes in examinations have been used as levers to promote change in education and society, to reform the curriculum, to shift effective control of the system away from—or toward—the center, and to achieve specific political goals.

Innovative assessment is designed to develop critical thinking including the ability to be self-critical. Innovative assessment techniques are not without their problems and certainly require careful implementation if they are to avoid the 'famous failure' label, however the arguments in favor of changing the way we assess more than outweigh the potential problems. Innovative approach to assessment has been primarily made on the grounds of improving the quality of student learning, and our challenge lies in viewing it as an integral part of the teaching and learning process and not as assessment.

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LARGE-SCALE DIAGNOSTIC ASSESSMENTS – THE GUJARAT EXPERIENCE

Vyjayanthi Sankar

In India, independent assessments conducted by organisations like ASER and Educational Initiatives show that students in Government schools are not learning well, and are not acquiring the expected competencies in basic literacy and numeracy. India has now enacted the Right to Free and Compulsory Education (RTE) for all children from 6-14 years of age. Attaining the RTE goals on enrolment, access, equity, etc. are meaningful, only if the education students receive is of a desired quality. In our striving to provide quality education for all, it is important to establish two things –1. where we stand and 2. where we need to go. Well designed diagnostic assessments provide a clear picture of where we stand and are integral to any learning strategy that leads us to where we need to go.

The core problem in India is rote learning; we cannot reform education or aim to improve the quality of student learning outcomes without tacking this problem, and if this problem is effectively solved, other issues will sequentially get tackled.

A look at the nature and history of assessments in India reveals that traditionally, the levels of student learning in India and in several states are determined by the pass rates in the board exams and school exams. These are usually high-stake exams and are designed to give as much advantage to the student as possible to ensure that most of the students pass the minimum threshold.

Then there are the classroom assessments made by the teacher at the end of the learning unit or at specific intervals in the course of the academic year. School assessments also tend to be directly from the textbook and are also heavily influenced by the questioning pattern and question types used in the board exams. There is an excessive focus on rote memorization and conforming to the expected narrow range of answers. These assessments are also not approached as integral to learning, as an assessment *for* learning i.e., as one that would provide a diagnosis of what the student has learnt and where the learning gaps are, so that remediation can be provided. Teacher capacity to build such assessments for learning is also currently not available. This capacity needs to be built continuously over a long period of time.

The few low-stakes large-scale achievement studies done by the Centre and the states usually do not go beyond the purpose of overall ranking based on percentage scores. However, addressing issues of quality in learning will require a better understanding of what is being learnt and what isn't so that it can inform remedial interventions. Administrators need more accurate and timely key educational management data on students, schools and teachers in order to optimise the

> Our schools are replete with examples of students who can calculate the LCM of 2 numbers but not explain what they did or why; who can define 'pressure' but not understand or apply it; and who have studied a second language for 5 years, but cannot use it functionally. This is rote learning, and it happens when the focus moves away from learning and only to marks obtained in exams. Stress, the problems of tuitions, unemployable graduates are merely symptoms of the rote learning problem. Even more important, the meaningfulness of education gets questioned by all – teachers, parents, schools – and is probably the root cause of many issues faced.

targeting of resources. The need for large-scale benchmarking assessments that provide granular information across the education system and insights into some of the fundamental questions assume greater importance in our collective effort to provide quality education to our children.

This paper is based on the independent diagnostic assessment of student learning outcomes carried out by Educational Initiatives (EI) for the large-scale education reform measures initiated by the Government of Gujarat.

Gujarat's Assessment Initiatives: Gujarat, recognising the importance of quality of learning for its children, is the first state in India to introduce in the state RTE rules, an independent measurement of learning outcomes with a view to understand the gaps and focus on improvement. As a part of Gujarat's initiative to ensure quality education of students in the Government schools and to increase awareness for quality in the education community, the government carries out 'Gunotsav', a quality improvement programme in which students have been assessed every year since 2009. Since 2011, EI has been involved in supporting the existing Gunotsav programme for 33,900 primary schools in Gujarat. Each year, 'Gunotsav' is carried out in two phases. In the first phase (Self Assessment) the teachers of the schools conduct the assessments. In the second phase (Officer Assessment), the Officers (Ministers, IAS, IPS, IFS and other Class I-II officers) conduct the assessments in 25% of the primary schools. For Self and Officer Assessment, EI contributes 20% of the higher-order test items and carry out analysis of all the Gunotsav data. In addition, a detailed, scientific, diagnostic Assessment of learning levels are carried out by EI on a representative sample of students in classes 3, 5, 7 and 9 across 26 districts of Gujarat *to understand 'How well children learn' (learning achievement, gaps and misconceptions).*

'Gunotsav' Assessments	The role they play …
Self Assessment (SA)	• **Messaging to teacher and larger educational community** on importance of learning outcomes plus **accountability** for the same. • Provides teacher an understanding of the **achievement levels in his/her classroom** • Covers all **teachers and students**
Officer Assessment (OA)	• Gives **a signal of seriousness** to education community • **Involvement** of senior officers in education and **understanding the key ground level issues**
Diagnostic Assessment	• **Actionable feedback** of learning gaps, common errors, misconceptions, strong & weak competencies. (eg., fractions and decimals is the weakest skill in Maths in class 5) • **Rigorous method for tracking improvement** even at an annual level • **Objective and controlled** testing process using **trained evaluators** • **Full length** tests with **question-wise feedback** • **Representative sample** provides rigour at low cost and effort **(1/10th of size of OA)**

Test Design: The purpose of a diagnostic assessment is to provide a detailed diagnostic snapshot on the strengths and weaknesses in student learning. To be truly diagnostic, tests need to (1) measure a modest number of significant, high-priority cognitive skills or bodies of knowledge; (2) include enough items for each assessed competency to give teachers a reasonably accurate fix on a test-taker's mastery of that attribute; (3) describe with clarity what the test is assessing; and (4) not be too complicated or time-consuming.

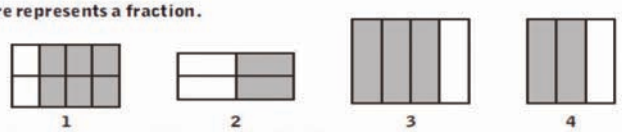
Prior experience has shown that government school students, especially in the lower classes have difficulty in reading. Hence, to gather information on their overall performance unhindered by their reading difficulty, EI introduces 2 components in the diagnostic test papers – 'Written' and 'Group Oral'. The written test has items that are read and

answered by students themselves. The 'Group Oral' part of the test has questions that are read out orally twice by the evaluator to the whole group (one question at a time, giving time to the students to write the answers) and the students respond by answering the question in the test paper. In Gujarat diagnostic assessments, only class 3 language and maths papers had 'group oral' questions.

Papers were designed on a detailed competency framework with inputs from NCF, MLLs, State textbooks, standard international frameworks and EI's national benchmarking studies. The tests included questions to test not just knowledge (recall and procedure) but understanding and higher-order skills such as reasoning and application of concepts. Passages in the papers were 'unseen' passages and included authentic material seen in daily life. The focus of the questions was on testing for 'learning with understanding', i.e., the real understanding of students in concepts they have learnt in their specific classes. Anchor questions from EI's national assessment for private schools 'ASSET' were included to provide comparative benchmarks. The questions were also predominantly in the multiple-choice format to keep the format simple and easy to administer.

Salient Features of the Diagnostic Assessment Study in Gujarat

- **Coverage:** 1.3 lac students from 1114 schools from all the 26 districts sampled. (1000 students per class per district)
- **Subjects:** Gujarati, Maths, EVS (Classes 3, 5); Gujarati, Maths, S&T, Social Science, English (Classes 7, 9)
- Scientifically Designed **Test Development Cycle**
- **Specially Constructed Papers** with National Benchmarking
- **Trained** Test Administrators and Evaluators
- **Field Audits** to check quality and fairness in testing
- **Analysis** using advanced techniques such as Item Response Theory (IRT)
- **Reports for the state and each district**
- Special **website with granular data access** at item and distracter level
- **Research into student misconception through video interviews**
- Test Development, Master Training for Test Administration, Field Audits, Data Entry, Analysis and Reports **by EI**; Test Administration and Logistics **by Gujarat Government.**
- **Capacity Building Workshops** for state and district personnel in building and using assessments
- **Post-Analysis Dissemination workshops** for education officials and teachers

S.No	Traditional format	Alternative forms testing the same concept – Testing for 'Learning with Understanding'
1.	What is the reduced form of 6/9?	**Each figure represents a fraction.**  1 2 3 4 **Which two figures represent the same fraction?** **A.** 1 and 3 **B.** 1 and 4 **C.** 2 and 3 **D.** 3 and 4
		1b. Write a fraction that is larger than 2/7
2.	Add: 7.234 + 21.34	2a. Which of these numbers is CLOSEST to 423.1? A.4231 B. 4.23 C.42.3 D.423
		2b. Which of these numbers is the largest? A. 7.234 B. 6.1 C. .4999 D. 21.34

Meaningful Analysis for Dialogue and Change: Different types of analyses were carried out on the collected data to extract patterns in performances and to understand differences in learning levels across different groups. Advanced statistical methods were used to check various patterns of learning. Distracter analyses help in identification of misconceptions and common errors. The analysis also provided information at the state and district level to ensure a clear, targeted action plan in the subsequent phase. It provided useful comparative data between the performances of children in the different districts/regions of the state. Comparative data with other states and national benchmarking studies were also available. Discriminant background factors associated with student learning were identified.

Reports: Reports intended for the policy-makers at **state level, as well as reports for each district** were provided. The district reports provided to each DEO provided a bird's eye view of the district's overall performance in each test relative to the state performance, percentage of students in each score band, comparative performance with other districts, strong and weak competencies in each test, high performing and low performing questions, detailed recommendations for improvement in each subject.

Capacity Building and Dissemination Strategies: A website that allows the data to be accessed in the aggregated form at the level of the state, district and schools was developed. Diagnostic information at item and skill level was also provided that can be used by teachers and resource persons at curriculum and pedagogy level. A series of capacity building workshops for state and district personnel to develop latest skills in building and using student assessments, post analysis and dissemination workshops for teachers to understand the insights from the data and incorporate the information in classroom practices were part of the project.

Student Video Interviews: While assessment results identify the different wrong answers students provide for a concept, it does not fully explain why students answer in that way. In order to find that out, one approach was simply to ask students this in a 'student interview'. These interviews were typically conducted in the class itself by trained interviewers. They were video recorded and then disseminated to schools where they are used mainly for teacher feedback and training.

Way Forward: A low-stakes diagnostic student assessment is a powerful tool to highlight to all stakeholders the key gaps in student learning. Well-designed learning assessment surveys have the following characteristics. They:

- *provide benchmarking of student learning for use by policy-makers and researchers both at the central and the state levels.*
- *provide insights into comparative performances of different states and create cross-learning and remedial opportunities.*
- *establish student learning in terms of knowledge, skills and feedback on the learning gaps, common errors and misconceptions.*
- *provide pointers for further research.*
- *diagnose the learning issues at the systemic level.*

While Gujarat is setting the pace and leading by example through its focus on quality of learning outcomes, the challenge now is to get all the states to understand and have an informed debate around what an assessment is used for; to differentiate between what a test is, an examination is and the purpose of these, compared with what diagnostic learning assessment is for; in particular the need, not to go beyond just measuring learning – but to make informed interventions to rectify what is not being learnt - closing this loop so that we get beyond the diagnosis to remediation (Bangay, 2013).

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THE BIRTH OF ASER[1]

Rukmini Banerji

I remember a hot summer day, almost ten years ago, in a village in Sultanpur district in Uttar Pradesh. We were making a village report card.[2] Before starting work in a village we always did this exercise. Our goal then, as it is even today, was to work with people in the village to ensure that "every child is in school and learning well". So we would go to every household in the village, and ask every child if he or she went to school. Ten years ago, even in UP, school enrollment levels were high. In some villages, well over 90% of children between the ages of six and fourteen were enrolled in school. But for us, it was important to go beyond schooling and try to get a sense of what a child could do. We used very basic benchmarks for learning - each and every child of elementary school age in the village was asked to read a set of common words and simple paragraphs. In arithmetic, there were numbers to be named and a set of simple arithmetic operations to do.

That morning in the village in Sultanpur, we went to the Pradhan (village headman) to tell him what we were going to do. The Pradhan took a cursory look at us and said "Achcha ... survey hai? Kariye, kariye!"*(Oh… it's a survey? Please go ahead).* Accustomed to numerous surveys, he was not even interested in finding out what the survey was about.

In this village, like in many others, we moved from one hamlet to another, systematically going from one house to the next, talking to parents, interacting with children one on one. Questions like, "do your children go to school" got quick and sometimes disinterested answers. But asking children to read grabbed everyone's attention. Children would flock around, wanting to try. Parents would stop working and come to observe. Children who were playing in the fields put on shirts before coming to read. Mothers and fathers called their children back from wherever they were in the village to be "tested". Children came down from trees where they were eating mangoes and jumped out of the village pond and came to see what was going on. Onlookers and observers would borrow the "testing tool" from us and start working with children themselves. One elderly grandmother took the paragraphs and sat in a corner sounding out the words to see if she could remember her letters and matras. In hamlet after hamlet, the exercise was suddenly transformed from a "survey" of collecting data into a hugely engaging exercise. Everyone wanted to immediately know how children were doing. The aim was to reach every child in the village so that the village report card for schooling and learning was a complete census and a starting point.

The curiosity was immense. What was striking was that many parents did not have any idea of whether their children could read or do arithmetic. This was true of both illiterate and literate parents. Young people who were watching the proceedings with interest came forward to help.

While the children read or did arithmetic, the adults would get intensively involved in discussing why the children could or could not do what they were being asked, who was to blame. It was as if two layers of debates and discussions were

going on simultaneously – one at the level of the children and another, higher up, at the level of the adults.

I remember an old lady shaking her head and saying "this is not a survey", "Why not?" I asked her. She gave me the best definition of a survey that I have ever heard. She said, "a survey is when you don't know but we know. A survey is when you come from the city to find out what we village folk are all about. But this is not a survey. Because you don't know, and we don't know and in fact, even the children don't know what they can do. It is only when you ask them to read or do sums that we all find out. We find out together and we realize what our reality ("asliyaat") is."

After the home-by-home and child-by-child exercise in a hamlet was done, the "results" for the hamlet were declared. People waited with bated breath for the "count". "There are 40 households and they have 75 children. 70 children go to school but only 35 of those who go to school can read or do sums". Even as results were being digested, there was intense discussion on how this was not okay and what could be done to improve things. Clearly, by leaving the situation unattended, things would not sort themselves out. Urgent and rapid change was needed. In hamlet after hamlet, people agreed that schools must work, teachers must teach effectively and that parents or someone at home or in the neighbourhood too had to help. Only then would children's learning begin to change.

Stepping back, and looking at the unfolding scene, you could see very clearly that the actual activity to generate the information was critical for the entire process to unfold. "Self discovery" was essential. Someone had to hold a mirror so that people could see themselves in it. Information mattered. It mattered because it was about children that everyone knew and cared about. It mattered because the information that was generated was new: before this, people had not known to look closely at children's learning and did not know how to look at it in this simple way. It mattered because people had seen the information being generated before their own eyes and often had participated in creating it. The simplicity of the tool and the method enabled people of all types to participate or at least to observe. And it was easy to digest the results – for their own children and for all the children in the neighbourhood, for individuals and for the aggregate. Whether people were literate or illiterate, it was obvious to all that their own school going children should be able to do these basic tasks.

In a few days, the village report card was ready. We went back to the pradhan. Without looking up from what he was doing he asked me where he should sign. There was nowhere that the report card needed a signature. Pradhanji thought this was very odd. He looked up at me and said, "Usually figures and numbers are collected because we have to send them to the higher ups. And for that I have to put my signature." I tried to explain what the report card exercise had found. At the end of my explanation, he stated loudly, "The figures have to be wrong. How can it be that children are going to school and they cannot read?" The numbers and the explanation had upset him; the data went contrary to his perceptions and beliefs about reality in the village.

Now we had Pradhanji's full attention. There was only one way to settle the issue. Armed with the reading tool, Pradhanji walked through the village. Every child he met was asked to read. By the tenth child, Pradhanji sat down, put his head in his hands and said, *"yeh to mere izzat ka sawal hai* . (This is a question of my honour). How can this be the situation with children in my village and I not know about it?" Immediately he called a village meeting, parents, teachers, children, people from the neighbourhood – all

were present. A big discussion ensued on what could be done. The journey from assessment to action had begun. Engagement and participation were critical activities for realizing what the problem was. Once the problem was visible and it was "owned" by everyone then the strategies for solving the problem began to flow.

The entire exercise now known as ASER – the Annual Status of Education Report - was based on hundreds of experiences like the one in the village in Sultanpur. The purpose of ASER is very similar to the village report cards for schooling and learning. Even in 2005, we could see that school enrollment levels were high. The credit for India's high enrollment levels has to be given to parents who were demanding education and to governments who were providing schools. Going to school is a visible activity. Children who were not in school are easy to spot. Overall, the goal for universal enrollment is clear and visible to all – every child must be in school.

But as enrollment levels rise, it becomes important to think about what is happening inside schools, about how much "value" is being added to children's capability each year that a child continues in school. It is time to move beyond schooling to understanding what children are learning. Unlike schooling, learning is much more invisible – it happens behind walls and inside classrooms. Illiterate or non-schooled parents and family members leave the business of learning to "experts" and educated people. They do not feel they can understand what learning entails or how they can contribute to improving their children's learning. So if we as a country want "every child learning well" we need to demystify "learning". We need ways to engage people so that learning can become more visible, more understandable and demonstrate activities in which ordinary parents, and family members, neighbours and youth can engage. The purpose of the assessment activity in the village report card making process was to enable a broad cross-section of people to engage so that they can understand the situation and take appropriate action.

Around 2004 or so, nationally, two important events took place. First, the then new-UPA government began to speak of outlays to outcomes. For most social sector programs, the focus thus far had been on inputs and on delivery of services rather than on the outcomes. Second, more importantly, a new education cess of 2% was levied for elementary education. For both these reasons, it seemed important for citizens to turn their attention to outcomes in the education sector.

Since 2005, for eight years, ASER has been a nationwide citizens' initiative to understand the status of children's schooling and learning. Like the movement from assessment to action at the village level, the aim of ASER is to initiate similar movements at the district and state level. The "learning" in ASER refers to basic reading and arithmetic. We focus on basic capabilities so that even an illiterate mother can see what the child needs to be able to do. ASER is done in every rural district in the country every year. Using a common set of simple tools and a common sampling frame, in each district there is a local organization that conducts ASER and then disseminates its findings. ASER 2012 was carried out by over 500 local institutions and organizations across the country and by more than 25,000 volunteers. Together they reached 16,000 villages, over 300,000 households and well over 600,000 children.

Like the exercise of village report cards, ASER too is fundamentally based on notion that we need to understand the situation before we can act. To understand the situation, we need curiosity – we need to see if indeed there is a problem. We need simple ways to answer the questions that we have. Simple measures and methods help

everyone to participate and engage. If we do not know, we cannot act. Only when we understand, can we think of what to do next. Waiting for the government alone to improve things will take a long time. Like Pradhanji and the parents in the village, it is essential that we get involved in measuring, then understanding, and then acting to improve the future of our children. Some say that ASER leads to greater accountability; we say ASER leads to understanding, ownership and responsibility for action. This is how ASER was born and this is why it is done year after year.

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[1]*ASER stands for the Annual Status of Education Report. Details of the reports can be found on www.asercentre.org*
[2]*We, in this case, refers to the Pratham teams working in rural areas.*

ASSESSING VIDYA VANAM – AN INNOVATIVE SCHOOL FOR TRIBAL CHILDREN

Milind Brahme and M Suresh Babu

Vidya Vanam is a school for tribal and underprivileged children located in Anaikatti along the Tamil Nadu Kerala border in Coimbatore district. It began in 2007 as the first low cost English medium school for the children in this area. Over the past 5 years it has grown organically into an institution that is much more than a private school providing good quality English education to the children of Anaikatti and the surrounding villages.

What strikes one most about Vidya Vanam is the "bottom-up" approach of the school and the vision behind the effort to integrate it into the larger ecosystem of the communities it serves. It shows parallels as well as interesting and instructive contrasts with the "top-down" approach of the public education system, particularly the *Sarva Shiksha Abhiyan* (SSA) – the flagship programme of the Government of India for universalizing elementary education across the country.

These parallels and contrasts with a larger public education system became important markers as far as our perspective looking at Vidya Vanam was concerned.

Devising a Method:

Vidya Vanam did not seem to be just another institution where the children of the area get schooled. As a "node" where community members, especially women, come together and participate productively in its functioning, as a "knowledge base" and as an "occupational support platform", the school seemed well integrated into its ecosystem through a symbiotic relationship with the communities it served.

So we decided to begin our assessment by exploring the background and genesis of the idea of a school like Vidya Vanam. Detailed interviews with its director Ms Prema Rangachary and with parents of children revealed that in 2000-2001, local people from about 40 villages in the area – both tribals and non-tribals – had expressed one common wish to Ms Rangachary, who at that time was conducting workshops with Balwadi teachers in remote areas such as Anaikatti: they wanted a good English medium school for their children, which they could afford with their daily labour wages and meagre incomes from small businesses. When the plan for the school was finalized, Vidya Vanam decided against offering free education – basically so that the people to whose wishes the Trust (Bhuvana Foundation) was responding would have a stake and a sense of ownership in their children's school and schooling.

It became clear to us that our method itself would have to adequately correspond to the holistic vision behind the emergence of this school.

While it would be necessary to empirically observe and record our observations about

parameters such as Infrastructure, Pedagogy and the Nutritional Programme, we realized that we would also need an ethnographic hermeneutic to meaningfully explore the sense of ownership that the communities feel and to understand how and what kind of mutually beneficial relationships have evolved between the school and its overall ecosystem. We would also need participant observers – preferably women because the women of the local communities are the primary stakeholders and movers of Vidya Vanam and the activities around it – with very good communicative competence in at least 3 languages: Tamil, Malayalam and English.

Studying the Ecosystem

Community participation is a key factor in the success of Vidya Vanam as an institution. It was made integral to its functioning right from the beginning – by consensus the local people decided how much fees they would pay when the school started in 2007[1]. In cases where parents are going through financial difficulty, the school, through its staff members, keeps in regular touch with the family, many a time playing the role of counsellor. Sometimes, like in the case of Arasi (name changed) from the village Kondanur Pudur (an adivasi single parent of 3 children), parents find work with the school itself, and this completely transforms their life. Today Arasi says the school is much more to her than an institution where her children get education. She feels it has given her the courage to live alone and has empowered her.[2]

Delving into the life history of parents like Arasi became an important tool to understand the relationship between the school and the community.

At Vidya Vanam, several parents are either teaching or non-teaching staff at the school. Many are involved in other activities of the Self Help Group of local women that has been formed, such as making paper bags, cane baskets, decorative mats etc. Members of the Irula tribe have the right to forest produce. The school becomes a facilitator by encouraging and helping them to package and market what they collect – filtering and bottling honey, making and marketing herbal shampoos and body scrubs made from local forest produce such as amla, *arappu* etc.

Through interviews, participant observation and focused group discussions with local people we discovered how a sense of ownership and participation in the school's activities and management has organically developed among members of the community. This is an instructive contrast to campaigns such as the SSA, which acknowledge the importance of community participation but incorporate it and define its scope centrally.

Assessing other Parameters

Infrastructure

Simple empirical observation and photographs were the basic techniques of recording available infrastructure.

Low tables, *chowkies*, mats and low shelves that children can handle and manage by themselves are standard, encouraging independent learning. As we move upwards, the furniture becomes more conventional for higher classes. An interesting innovation here is the subject wise separation of the different classrooms as "Zones". So rather than the children sitting in one and the same room all the time and different teachers and "subjects" coming to them, they move from one zone to the other depending on what they are learning. These are simple innovations that can work in Mixed Age Group learning scenarios, and

we found it important to record and highlight them.

Nutritional Programme

The nutritious and tasty food that is provided to children and staff 3 times a day is easily one of the highlights of Vidya Vanam's good practices.

The state of Tamil Nadu has of course been a pioneer of the hot cooked meal that is now given to children in all government schools across India. Vidya Vanam also provides 2 small nutritious meals/snacks in addition to lunch. What people know about nutrition and sources that are available locally are used to augment the menu. This prevents delegitimization of local knowledge and alienation of the local community.

In depth interviews with the administration revealed that the cost per meal is only marginally above the government outlay for meals in government schools. Vidya Vanam leverages its embeddedness in the community to procure and process rations locally in cooperation with the local people, while ensuring proper storage and minimizing wastage. Here too could be a lesson for the much larger government mid-day meal programme in terms of how much more could be done with the resources that governments lay out every year.

The Learning Process

We needed sustained participant observation to grasp a teaching-learning process that is not constricted by an overarching fixed pedagogical concept. Two field volunteers who became part of the life at Vidya Vanam for one whole week

supplemented by a 3-day visit by the authors provided the observations we needed to make an assessment.

It is based broadly on Montessori and Constructivist principles and allows enough room for child and teacher autonomy, improvisation and innovation. The environment is marked by easy communication between teachers and children. Children are fearless, are encouraged

to ask questions and express dissent; teachers are trained to listen with respect and without prejudice.

Encouraging children to record local histories, introducing theme based learning in science subjects (for example: beginning to learn about plants not from the book but from nature walks, observing, feeling and collecting different types of leaves, grass, seeds, flowers etc.) – these are innovations that are consistent with the overall importance given by Vidya Vanam to maintaining the legitimacy and validity of local knowledge and knowledge systems even while introducing children to modern scientific thinking.

Reflections

Reflecting upon the entire process of assessing Vidya Vanam as a school for tribal and underprivileged children, we see that our focus was not so much on the use of quantitative methods to gather data on individual achievement levels of children in terms of ability to retain and reproduce information. We tried to understand the underlying holistic vision and the processes and people that make this institution tick. This required an ethnographic qualitative approach.

It was important for us to grasp the key factors behind these processes to see if they are replicable in larger frameworks like the public education system, particularly in Tamil Nadu, which has seen the introduction of very good innovations such as Activity Based Learning (ABL) and Active Learning Methodology (ALM), but is grappling with the issue of sustaining them.

We find that being embedded in its ecosystem as an integral part, a bottom-up approach and a flexible pedagogical praxis – these are the key factors that make Vidya Vanam work. And these could provide a few pointers at the policy level for larger public education systems.

(The authors wish to thank Prof V R Muraleedharan, Gita Jayaraj and Kaveri Murthy, the other members of the team that did the assessment, and T Tamilkani and K Jayashree for their help in summarizing the original report and preparing this manuscript.)

[1]*It was decided to keep fees roughly equal to one day's wages per month. Younger siblings would pay half as much. It must be noted, however, that poverty levels among the tribals are such that many families cannot afford even this 'reasonable' arrangement. Whether and how to expand and become more inclusive are challenges the school is bound to face, and the administrators are aware of it.*

[2]*Arasi (name changed) has had education till class 8 and was teaching children in locally organized extra evening classes. After her husband died in an accident, she came over to the school where her 2 younger children are studying. She was recruited to assist other teachers and is now being teacher-trained on the job.*

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***Suresh** did his PhD from the Centre for Development Studies, Trivandrum. Currently he teaches economics at the Department of Humanities and Social Sciences at IIT Madras. He works on issues related to the Indian economy, mainly the industrial sector and development policy.*

PARENTS SPEAK

Selvi Rajendran

I am more worried than my children are, when it is examination time. The elder one particularly is very stressed out because she finds some of the maths problems difficult and I think she does not pay attention. Besides this, she had a very strict teacher in the lower classes who used to shout and so she got scared. Now that I have changed her school, I think she will do well in her exams.

Since I have studied up to 12th Class, I am able to help her. But only to some extent because it has changed a lot since then and anyway I have my housework. I am sending them both for tuition near my house, for maths and English. I want them to learn very good English – that's the way they can really progress. I think learning good English is as important as doing well in the exams.

I don't think the teachers are too strict – if they don't do too well in a test or exam, there is no punishment in the present school. Personally I think they should insist on hard work, the children do not listen to anyone at home; the teacher is the most important person.

The school comments on their behaviour and also checks their classwork and homework. I think they should be stricter. They have quarterly, half yearly and final exams as well as tests. My younger daughter's class (4) has more oral tests. She is very good at speaking, very confident so she is doing very well. She also has exams, but she is not in the least afraid of them.

One thing I notice is that they are always busy with something to do with the school and we are buying things almost everyday.

I want them both to go to college and work – so I am ready to send them to any extra classes later on. They have to do well, study hard and pass examinations. I worked hard at school in my village and passed 12th class. Teachers must insist on studying hard – or what is the use? On the other hand, they should not scare the children. This school sends for me when they want to tell me something about my children.

On the whole, I am satisfied with the system.

Selvi Rajendran *is very active in women's groups and takes an active interest in her children's education and development.*

PARENTS SPEAK

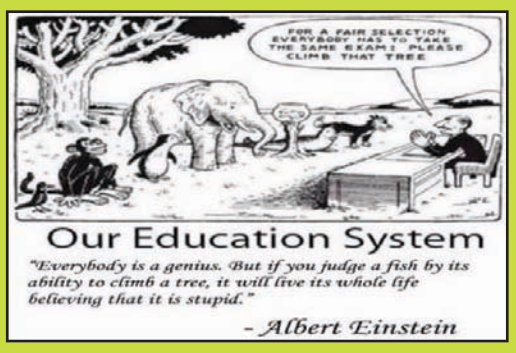
Nityaa Gurumoorthy

Assessment has become an integral part of the present school system right from Pre-KG. As a mother of 3-year old twins, who have had to undergo assessment from the very first month of joining school, I am unwillingly forced to pressurise my kids in an endeavour to prove their mettle. Comparisons and constant suggestions from teachers for improvement drive parents towards putting pressure on their kids even when they do not intend to do so. I have friends who sent their kids to extra classes after school to hone their skills in storytelling, drawing etc., which I felt was completely unwarranted at such a young age. We actually end up curbing their curiosity and innocence because of this undue stress and burden.

In school, children are expected to talk in English at an age where they do not even know their mother tongue very well! Children who do a lot of mischief or those who are hyperactive are sidelined, maybe due to the inability of teachers to hold their attention. They just end up being judged as trouble-makers and poor performers in school!

While my daughter loves to draw and colour, my son's interests are slightly different. He loves outdoor activities. However, the school expects a certain level of performance (according to me, quite high!) in both these areas, apart from many other as well. The focus and attention is always on the skills in which the child is not excelling, either due to lack of interest or various other reasons. Instead of focussing on what each of my children likes doing, extra attention is given on developing their skills in what they are quite not interested in, slowly resulting in an aversion to schooling itself.

While I think there definitely has been a lot of improvement since the time I myself went through school and teachers are a much more sensitive and aware of children's developmental needs now-a-days, there definitely is a long way to go before teaching and evaluation systems in schools actually become as progressive as some of the latest theories in education and schooling recommend.



Nityaa Gurumoorthy *is a home-maker and mother of 3-year old twins, Gurupriya and Kumaraguru, who are studying Pre-KG in a reputed school in Chennai.*

ASSESSMENT - NOTES FROM THE FIELD

Rudresh S

Every educational intervention expects to lead to improvement in the learning outcomes of students. Many interventions in India focus on building teacher capacity, creating a learning-conducive atmosphere or bridging the gap between the school and community which are then expected to positively impact learning outcome of students. Assessment is a significant part of an intervention to systematically understand improvement in the learning outcomes of the students, and helps teachers or facilitators to understand problems that students face and design processes for improvement. It also helps teachers and functionaries to understand preparation for teaching better. Azim Premji Foundation has had experience of conceiving and administering assessment tools and processes in schools to evaluate the impact of our interventions and to promote learning.

Learning Guarantee Programme:

The Learning Guarantee Programme (LGP) was a joint initiative of the government of Karnataka and Azim Premji Foundation. Between 2002 and 2005, it ran in seven districts of North Karnataka which have 9270 lower and higher primary schools. Of these, 1887 schools volunteered to participate in the three years of the pilot. The objective of the programme was to promote reform in the examination system - i.e. a shift from traditional rote evaluation to competency/ skill and understanding-based assessment. The criteria for assessment were enrolment, attendance and learning achievements of children in the primary grades. Schools that met performance levels in all of these three criteria were recognized as Learning Guarantee Schools (winners). In the year 2003, of the 896 schools, 40 schools were declared 'winners' (Learning Guarantee Schools); in 2004, the second year of the pilot, 84 out of the 1443 schools that were assessed qualified as winners and in 2005, the last year of the pilot, 144 out of the 1887 schools that were assessed were declared 'winners'.

The key elements of the programme were: voluntary participation of the school and every child being assessed using tools and processes based on understanding, skill and application. Feedback on expected competencies was given for every child. Also, assessment took place on a mass scale in a campaign mode where more than 1000 trained volunteers worked simultaneously across the North East Karnataka.

A four-member team from the Foundation conducted the assessment with both written and oral tests in Language and Mathematics from class 1 to class 4. Feedback was given with the assumption that teachers would work with the children to improve learning competencies and emphasize understanding and application. It was assumed that teachers will work with students based on the feedback provided.

But, interestingly, this did not happen. On enquiry, it was found that the teachers found the detailed feedback useful but did not know how to go about using it and wanted training to incorporate skill and understanding-based teaching. We had expected teachers to create an intervention model without training.

Insights from the programme:

- This was the first time in the history of Karnataka where data from 1800 schools about the learning outcomes of each child in classes 1 to 4 was made available.
- We were able to assess all 1800 schools across seven districts within three months with the help of more than 1000 volunteers.
- Teachers wanted help with designing understanding-based classroom processes for students. This was not part of the programme.
- It is difficult to reform the examination system unless it accepts and incorporates the understanding-based tests. We were only able to motivate the government to conduct similar assessments across the state. We were unable to promote school level assessments based on understanding/skill.
- Our effort of three years has given us a perspective on understanding-based assessment but has not influenced classroom processes.
- We were not able to develop the context-based assessment tool because both the numbers and the area were too large to standardize.
- Shifting from memory-based tests to understanding-based test needs lots of background work, perspective building and training.
- Maintaining transparency and accuracy is a major challenge in a mass-scale assessment.
- When the stakes are high, the chances of inconsistencies increase.
- From assessment to execution, the change is a major leap, which is difficult when many parties are involved and there are many variables.

Assessment of 'Higher- Order Thinking' at Bellary, Karnataka

This was a small intervention and experimental study jointly organized by Azim Premji Foundation and DIET Bellary on Higher Order Thinking (HOTS) and was aimed at progressing from assessing rote learning to testing critical and creative abilities in children, with a part of the study consisting of assessing teacher's subject knowledge and attitude.

Higher-order thinking requires students to manipulate information and ideas in ways that transform their meaning and implications. This transformation occurs when students combine facts and ideas in order to synthesise, generalise, explain, hypothesise or arrive at some conclusion or interpretation and allows students to solve problems and discover new (for them) meanings and understandings. When students engage in the construction of knowledge, an element of uncertainty is introduced into the instructional process and makes instructional outcomes not always predictable. Another objective of the project was to see the connection between learning outcomes of the students, content knowledge and perspective of the students.

The Foundation team spent two days in each school to conduct assessment on higher order skills in language and mathematics for classes 3 and 4. Teachers were also assessed for their understanding of content and pedagogy along with areas related to attitudes. An analysis of this study reveals students performed well on higher order skills when they were able to relate to their context and share their experiences. The performance of rural students was slightly better than urban (small town) students on higher order skills. There was no significant difference of learning outcome of the students between schools that had participated in the Learning Guarantee Programme and those that had not while the knowledge of the teachers across both categories were the same. Here are some correlations between teachers' attitudes and student performance:

- Teachers tended to think that a student should not ask lot of questions, that experienced teachers need not share their learning, that they (teachers) were unable to deal with disciplinary issues.
- Teachers also seem to hold on to traditional teaching practices and have a 'stereotypical' idea of children and the way they learn.
- Teachers in both categories of schools (those that were part of the Learning Guarantee Programme and those that were not) did not demonstrate a positive understanding or belief in equity.

The study brought out the interesting insight that there is a close connect between the learning outcome of students and teachers' attitudes towards their profession, the teaching learning process, the community, children and equity. It was not really the knowledge of teachers which contributed significantly towards leaning outcome of students. The study also revealed that even in schools that had 'won' during the Learning Guarantee Programme, issues of 'teacher attitude' remain.

Child Friendly School Initiative (CFSI), Shorapur

This is an experiment to demonstrate a process of providing quality education to all children in identified schools in partnership with all stakeholders, while building capacity and accountability on a sustained basis. This intervention is being implemented in all 350 schools of Shorapur block in Yadgir district (Karnataka) since 2005. This is a holistic programme in terms of involving all relevant stakeholders (teachers, community members, students and educational functionaries) and covering a wide range of domains (school environment, classroom environment, teaching learning process, teachers professional development and community participation). A set of 214 indicators were identified for regular monitoring across the five areas mentioned above. The CFSI intervention comprises different kind of assessments like baseline, midline and end-line test of student learning outcomes, baseline and midline of school improvement plans, assessment of classroom interventions, assessment to see the connection between student learning outcomes and school improvement indicators.

It assumed that improvement in the school improvement indicators will in turn result in the improvement of learning levels of the students. Baseline school improvement plan indicators and learning levels of students of classes 1 to 4 were conducted in 2005. In the first three years (2005 2008) focus and efforts were on making schools achieve school improvement plan indicators. In order to see improvement and connection between the indicators and learning outcome of the students, a midline assessment was conducted in 2008 and analysis showed some unexpected results. Although there was 23% improvement in school development, learning levels of students did not show improvement. This was true even if the school showed a 90% rise in performance on school development indicators.

This mid- line assessment led to a review, in which the team felt that the indicators needed to be revised. We needed to incorporate indicators which could contribute to school development and concrete interventions in the area of teacher capacity building and community linkages. This resulted in exploring a lot of new interventions like teacher learning centres for professional development, 'change agents' training and regular teacher interaction meetings and bringing out a newsletter. Learning 'melas' for children, community 'jathas,' focus group discussions were also introduced as part of community participation.

In order to assess the impact of the programme so far, the Foundation carried out a midline assessment of learning outcomes among students

in classes 3 and 4 in some sample schools in March 2011.

The baseline and end line assessments were conducted on the following lines:

- The sample comprised 50 schools selected at random.
- All students of classes 3 and 4 in the sample schools were assessed using written learning achievement tests in Mathematics and Environment Science (EVS). Both the tests were administered in Kannada.
- Identical test instruments were used for both studies.

Analysis of the end line assessment shows a sharp and statistically significant improvement of 16.2 percentage points (more than 47% improvement) in the learning achievement levels between the baseline and the midline assessment (from 2009 to 2011). If we analyse data of the subjects separately, we find a similar increase across both Mathematics and EVS. However, interestingly, the improvement is much higher in class 3 (23.5 percentage points) than in class 4 (7.3 percentage points).The data when analysed by sex and socio-economic categories shows that there has been a significant improvement between the baseline and midline assessments, within all the categories.

The continuous and comprehensive assessment strategy of the Child Friendly School Initiative programme helped in providing useful data for course correction. Moreover it gave the team the direction needed to improve the programme and helped the team to see and articulate the impact made in meaningful ways. Importantly, it also built the team's confidence to speak to the external world with concrete data about the programme and the major learnings from it.

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LEARNINGS FROM THE 'LEARNING GUARANTEE PROGRAMME'

Rishikesh

The Learning Guarantee Programme (LGP)[1] was a large scale student assessment based programme conceptualized and implemented by the Azim Premji Foundation across 5 states between 2003 to 2008. Implementing this programme for over five years across the country provided rich insights on a variety of educational aspects as the learning was not restricted to getting only a macro-level picture. Hence, the learnings were far deeper than what large scale assessments are believed to provide. The criticisms of large scale assessments range from outright rejection of the concept due to its' summative nature to its' ineffectiveness in contributing to improve student learning. Interestingly, by incorporating certain innovations and research within the assessment design, LGP not only avoided the pitfalls of large scale assessments, but was even able to extract far more than what is traditionally expected from assessments of this kind.

LGP had a key objective of identifying and rewarding outstanding schools that were achieving expected learning competencies, and it incorporated into this conceptual objective two related positions, that of using summative assessment data for:

a. formative purposes (that is to improve teaching practices and classroom transactions), and,

b. not only to provide feedback but also a feed-forward to the teachers.

'Hence, the LGP assessment, may be seen as summative but is not restrictive to being only an assessment of learning since the feedback from such assessment forms a crucial link to the process of initiating improvements in the class room pedagogy, both at the individual school level as well as at the systemic level. To illustrate, if we are testing the third standard students at the end of the year, the results will feedback to the teachers who handle third standard class as well as the teachers who handle the fourth standard classes. The rationale behind the feed forward is the notion that competences are continuous and so teachers will gain insight into the problems generally faced by students in acquiring a particular competence' - this simple change of positioning by incorporating the feed-forward mechanism help address the criticism that teachers invariably find large scale summative assessments used for ranking as useless because it is held at the end of the academic year with the concerned students moving away to another class. In fact, the programme tackled this issue in another way as well as it incorporated the voluntary component by which the schools were allowed to identify the time of the year that they wanted the assessment to be conducted in their school. And to fix any complication arising out of this, the assessments were so designed that the previous years' competencies were what was tested of the students rather than the current grade / year. So, if a fourth standard class was being assessed, the students were answering questions that were related to competencies of the third standard class; given that the testing instrument had items based on competencies and not on any specific text book content, it did not provide for any bias and this also overcame the other criticism of large scale assessments which is said to result in teaching to the tests.

LGP experience shows that in spite of similar challenges such as infrastructure deficiency, lack of adequate number of teachers, and other requirements that form the basic hygiene levels for a school, there are some schools that do a very good job of ensuring student learning outcome. Understanding the reasons behind such differences in student learning outcomes in schools with similar challenges (by documenting the factors and practices that enabled these schools to perform well) was a follow-up activity of this assessment programme. Thus, LGP was not only a programme based on large scale assessment, but one that was backed up with both small scale and large scale research studies resulting in tremendous learning.

'The performance of a school is a result of complex interplay of several social, economic, infrastructure and schooling quality related issues; one school of thought suggests that socio-economic factors including, caste, household income and occupation, education levels of the parents etc. is largely responsible for children dropping out of school and consequently demonstrating poor learning levels, while the other line of thinking suggests that irrespective of socio-economic issues, the quality of teaching is the major determinant of attendance of children in school (and consequently learning achievements)'. Therefore, the relative success or failure of a school can be attributed to two distinct aspects - the socio-economic, demographic and environmental indicators on the one hand and the in-school processes on the other. The research studies based on the LGP provided findings that disprove some of the commonly held perceptions while reinforcing some others. The findings show that the infrastructure facilities and the teacher profile seem to be largely non issues when it comes to student learning outcomes of schools; thus they appear to be desirable aspects but not critical in achieving success.

The key differentiator, between schools that do well on learning outcome versus those that do not, appear to be aspects related to school management and practices. Schools that do well display significantly higher level of discipline, commitment and teacher involvement. The manifestations of this are Head teacher and teachers' presence, maintenance of good records, good teaching-learning materials in the school, cleanliness and good appearance of the school. The teachers in these schools seem to have traveled that extra mile by spending extra time (even on holidays, at times) with the children, encouraging them to practice, identifying weak children and given them special attention by way of remedial teaching, etc.

'By far, the most critical differentiators are an 'efficient teacher system' comprising the commitment, discipline and efforts of the head teacher and other teachers on the one hand and an 'involved community system' comprising active and supportive SDMC and parents.

Moving on from the non-academic parameters to academic aspects[2], the LGP provided insights that very few expect from large scale assessments. Though the student assessments across the different States did not cover identical competencies, the learning areas covered in the assessments did overlap allowing for analysis at a pan-India level.

'Writing' clearly emerged as a weak area across the country. The other weak[3] learning area in Languages is *'functional grammar'*. *'Comprehension related aspects'* is the third area in which competencies such as 'understanding the central theme of a passage' or to 'sequence words in a sentence' were found to be weak. Some of the specific competencies identified as weak are, 'taking dictation of unfamiliar words', 'understanding picture sequences and stringing together a story', 'writing guided composition using punctuation marks', 'knowing the functional

rules of sentence construction' and 'to make sentences understanding the tenses'

In Mathematics, the learning area involving *'fractions, decimals and percentages'* is a weak area. *'Solving of daily life problems'* and *'problems related to currency, capacity, mass, area and volume'* is the other weak are with the following key competencies such as 'conversion of rupee into paisa', 'solving currency problems (simple practical problems involving money) using basic operations', 'to measure volume' and 'calculating GCD and LCM' identified as weak.

In the area of environmental science, *'observing simple phenomenon on the Earth and the sky and drawing inferences', 'understanding and interpreting the spatial and interactive relationships between man and his environment'* and *'awareness about one's well-being in the context of the social and the natural environment'* are identified as weak learning areas; under these areas some specific competencies are identified as weak such as, 'ability to read maps and identify directions in a map', 'to identify one's own District, State, etc. on a map', 'knowledge of immediate environment such as different occupations in the region', 'awareness of socio-economic conditions such as the need for small families, difficulties of large families in small houses, and so on.

Though many commonalities emerged across the 5 States where LGP was implemented, there is also a great degree of variation that has emerged as well. These state specific variations provide deeper insights, however, to maintain the word limit of this article only the common trends have been listed.

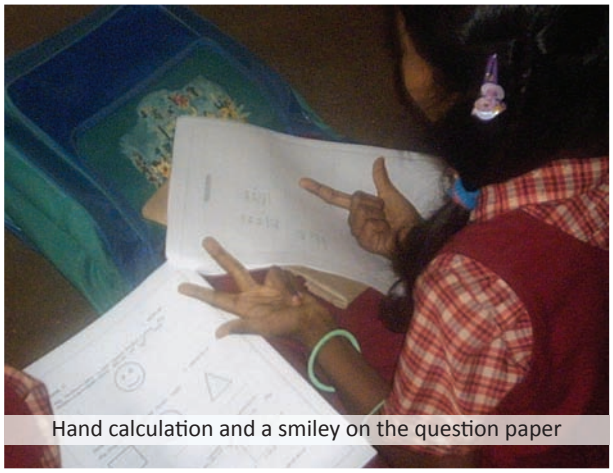
These is evidence that large scale assessments not only have their place 'under the sun', but if conceptualized and implemented intelligently will always provide tremendous insights that are highly beneficial, not only at the policy framing level, but even at the classroom transaction level!

I conclude by quoting Geoff Masters, the head of Australian assessment giant, ACER (Australian Council for Educational Research), "If school assessments in the 21st century are to contribute to improved learning and better outcomes for all students, then a change in approach is required. Assessments must be designed for the fundamental purpose of establishing and understanding where learners are in their long-term progress in an area of learning at the time of assessment". Therefore, with a few changes in our approach, all school level student assessments, which are invariably large scale, can become beneficial at multiple levels. LGP has successfully demonstrated a model.

Celebrating Assessment

Enjoying assessment

Friendly oral assessment in process



Hand calculation and a smiley on the question paper

Smiling bright inspite of the approaching exam

[1]*Launched in November 2002 in Karnataka, the Learning Guarantee Programme (LGP) was the flagship programme of the Azim Premji Foundation; it spread to Madhya Pradesh, Rajasthan Gujarat & Uttarakhand in a little over 2 years time.*

[2]*LGP assessment focused on the lower primary classes; the analysis of academic aspects in this article is based on classes 3 and 4*

[3]*A competency or a subject area is identified as 'weak' if more than three quarters of the students assessed have not attained the competency across all the States*

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LEARNERS' ASSESSMENT: ANDHRA PRADESH SCHOOL CHOICE STUDY

Srinivasulu Barigela

Introduction: The assessment is a tool of measurement in gauging the impact of various aspects in the education system. These ranges from evaluating children's learning as cognitive achievement in specific subjects to teachers' proficiency in the teaching - learning process and from the impact of various kinds of schools to mediums of instructions on children's performance. Assessment is a diagnostic test which actually helps students improve, unlike regular tests which try only to find out how much a child knows (or has memorized), assessment measures how well a student has actually understood concepts and a detailed feedback on the same is given, to help them improve. Assessment is distinct from other tests in many different ways.

- It has interesting questions that require thinking, not simply recall or recollecting of information.
- It provides detailed skill-wise feedback highlighting strengths and weaknesses
- It provides a benchmark of the student's performance with peers all over the school, Mandal and district.

In this paper, data from series of summative assessments of scholarship students have been used to put forth the impact of the medium of instruction on cognitive achievements of scholarship students in AP School Choice Study. In which, two rounds of summative assessments have been conducted as Lower End Line and Higher End Line assessments in Telugu, Math and English Subjects at end of every academic year from 2008 to 2011 for three years. These assessments were designed by Educational Initiatives (EI) based on the TIMSS framework.

1. Lower End Line Assessments are to evaluate the students' learning in the competencies of previous class and their ability in carrying forward those concepts for current class. With this assessment, we understand that whether the children had been taught conceptually or just practiced rote learning in Telugu and Math.
2. Higher End Line Assessments are to assess the students' learning in the competencies of the current year class with appropriate level of difficulty in Telugu, English and Math.

Background: AP School Choice is an experimental research study being conducted by the Azim Premji Foundation in collaboration with the Government of Andhra Pradesh in five districts representing three regions of Andhra Pradesh (Visakhapatnam, East Godavari, Kadapa, Medak, and Nizamabad). The objectives of this study are to find out the relative impact of the choice of the school and socio-economic background on learning achievements of students. APSC study provided randomly selected sample of government schools' students with scholarships to enable them to attend private schools of their choice in their villages and compare them with their counterparts in government schools.

Context

Educational learning in native language-Strength for today and bright hope for tomorrow: The medium of instruction should be understandable to teachers and students. It should also enable

them to attain comfort levels so that they can both deliver and receive messages using the chosen medium. Mostly, the educational experts recommend that the mother language of a child should be adopted as a medium of instruction at the primary level. Zubair (1993) proposed mother tongue as a medium of instruction at the primary level and argued that, "Ideally, the medium of instruction of a child living in its own language environment should be the mother tongue. Children should be taught in their mother tongue and the second language i.e. English, should be adopted/taught as a subject".

Debate

In fact, medium of instruction is a matter of great debate among teachers, educationists and parents. The majority of teachers and academicians say that English should not be the medium of instruction but should be taught as a subject right from very beginning of schooling. However, parents in rural areas too say that English should be the medium of instruction at all levels. But as we all are well aware that English is a widely used international language. It has (as a medium of instruction and as a subject) its roots in colonial India, when the controversy started with the emergence of two distinct opinions at the time of making educational policy for India by the British Government. The controversy was between the Orientalists and Occidentalists (Ahmad, 1997).

Objective of this Paper

- To compare the cognitive achievement of scholarship students who have undergone English and Telugu medium of instruction in private schools by conducting series of assessments in Telugu, Math and English.

Impact of Medium of Instruction on students' performance

The present paper aims at analyzing the effects of mediums of instructions on scholarship students' cognitive achievements in the subjects Telugu, Math and English at primary level by summative assessments. On the whole, it was found that in all most all cases performance of scholarship students from Telugu medium schools was better than that of English medium students. In only one case, students of English medium schools were good in English only. The following table shows the performance of the scholarship students of both mediums of instructions in competency based learning achievements in AP School Choice Study.

Scholarship Students' Performance		Lower End Line		Higher End Line		
Year of Assessment	Medium	Telugu	Math	Telugu	Math	English
2008-2009	Telugu	53.29	44.53	41.52	37.13	38.45
	English	39.77	26.81	32.87	25.77	37.13
2009-2010	Telugu	44.71	36.53	43.74	34.75	43.68
	English	42.13	29.20	41.96	31.69	41.75
2010-2011	Telugu	54.81	47.13	33.44	22.46	41.63
	English	51.61	46.21	29.69	18.69	52.20

The medium of instruction especially in mother tongue at an early age would facilitate the process of teaching by the teachers and the understandability and learning ability by the students is necessary at primary level either in private schools or government schools. In AP School Choice Study, the scholarship students (1980) who opted both mediums of instructions' schools and they executed their option of school choice. The scholarship students who chose Telugu medium of instruction performed well in the Telugu, Math and English subjects subsequently over the years, whereas the scholarship students who opted for English as medium of instruction performed well only in English for one year only.

The reasons for this are probably that the scholarship students have experienced Telugu medium when they were in government schools for class 1 before accepting scholarship and

making the choice of school. So, the Telugu medium students continued in the same language as medium of instruction in private schools too when they continued and performed well without any language barriers. Scholarship students who chose English did not have sufficient knowledge or experience in English as a medium of instruction or subject when they shifted to private schools.

The other sociological issue in assimilating scholarship students in private schools was peer group association and learning among different kinds of students. Peer association plays a pivotal role in education and learning in schooling. Non-scholarship students in private schools of English medium come from relatively advantaged family backgrounds compared to scholarship students and they were almost never integrated with scholarship students in classrooms and hence there was no peer learning and association between scholarship and non-scholarship students. Whereas, the scholarship students in private Telugu medium schools continued to improve and perform better in learning and education because, non-scholarship students in private Telugu medium schools have similar socio-economic background with scholarship students and there has been good integration and interactions among all students in those schools, it resulted in peer group association and learning in Telugu medium schools.

Summary and Conclusion:

The scholarship students from Telugu medium schools have continued to improve and perform well in all the subjects of learning assessments. Learning math and other subjects in English placed students at a disadvantage in learning assessments. Use of English as medium of instruction indeed contributed to their performance in English at least, which is a positive contribution to scholarship students. The medium of instruction should be in native language at least in primary education so that the students will get adapted to the subjects. Shift in the medium of instruction course of midterm would not only be disruptive but also counterproductive. Telugu as medium of instruction would contribute to improvement of scholarship students in Math and other subjects including English.

- Assessments showed that scholarship students had understood the concepts well, irrespective of schools and medium of instructions that they studied in.
- Teachers used assessments papers as model papers for their schools' tests.
- The scholarship students from Telugu medium have performed well in Telugu and Mathematics in all the learning assessments in subsequent years.
- Shift in medium of instruction in government schools made scholarship students unlearn what they learned in math and EVs. They needed to learn all subjects afresh in English medium.
- Scholarship students who entered a lower class have taken some time to acquire basics in Math and English in private schools and performed well later years in competency-based learning assessments.

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