

CENBOSEC

Quarterly Bulletin of the Central Board of Secondary Education

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From the Chairman

It gives me great pleasure to bring forth this quarterly issue of Cenbosec on the theme 'Tools of Assessment'. The Board as we are all aware has taken the initiative to bring in Examination Reforms and school based Continuous and Comprehensive Evaluation (CCE) after numerous recommendations of Committees, Commissions and the National Curriculum Framework 2005. The CCE Scheme envisages Holistic Assessment of a learner which will also include co-scholastic areas such as Life Skills, Attitudes and Values, Sports and Games as well as Co-curricular activities.

The Board before the launch of the CCE Scheme conducted focus group discussions at Guwahati, Chennai, Thiruvanthapuram, Panchkula, Indore and Lucknow in the previous quarter. These workshops were primarily organised to collect feedback in an interactive mode from students, parents, teachers, principals and educators. The feedback was taken through a questionnaire developed by Management Development Institute (MDI), Gurgaon. The questionnaire was also later put online and more than 6,000 responses were received which have been analysed by the MDI.

The Scheme was announced through circulars and advisories (Circular Nos. 39, 40, 42, 50, 51, 52, 53, 54, 62 and 63). Once the scheme as well as the syllabus for Formative Assessments and Summative Assessments in various subjects was announced training workshops were also taken up in all 11,600 schools affiliated to the Board. The cascade approach was used wherein master trainers were trained in Government schools, Kendriya Vidyalayas, Jawahar Navodaya Vidyalayas and private independent schools who further trained one principal and two teachers of each school in a six hour training module. There are still some schools who may not have been covered in the four phases of training between October to December, 2009. The Board is in the process of consolidating this list and will reach out to them subsequently.



The feedback of training workshops has since been analyzed and 87.27 % of respondents said that the session has enabled them to understand the concept of CCE. 90.48 % of respondents said that they think that the importance given to co-scholastic learning areas is appropriate.

The scheme has been supported with the production of a large amount of support material such as Teachers' Manual, Flyer on CCE, School Based Certificate on CCE, Model Report Card on Class IX, Frequently Asked Questions, Life Skills in the context of CCE, Naya Agaaz, Movie on CCE, Trainers' Manual to train principals and teachers, Power Point Presentations and Sample Question Papers in the main subjects in the new format.

It is indeed heartening to note that in response to an open request to schools numerous schools came in with their vision of CBSE Logo and CBSE Slogan and out of these the logo designed by Cambridge School, Amritsar and the slogan by Delhi Public School, Greater Noida was selected. I take this opportunity to congratulate the two principals, Ms. Sunita Babu and Ms. Kamini Bhasin for their quick response and participation. The Board in the meantime also launched toll free helpline number 1800118002 for students and 'Interact with Chairman' a feature under the CCE corner on the CBSE website. More than 5000 queries were received and responded to on this feature alone. The CBSE is aware that any reform of this magnitude cannot be done in isolation and requires enormous amount of commitment and breaking down of barriers whether of the mind or attitudes of all stakeholders involved in the process of change. We are indeed grateful to everyone who has come forward and volunteered to help in any measure big or small in this national enterprise.

I may not be able to thank each one of you personally but I would like to take this opportunity to express my gratitude towards everyone who has contributed to the cause of educational transformation. I sincerely hope that all of you will continue to provide support and constructive feedback for further improvement in this venture so that together we can move ahead with confidence and courage.

Vineet Joshi
Secretary and Chairman



अध्यक्ष की कलम से

‘मूल्यांकन के साधन’ विषयवस्तु पर आधारित सेनबोसेक के इस तिमाही संस्करण को प्रस्तुत करते हुए मुझे अपार हर्ष हो रहा है। जैसा कि हम सभी अवगत है कि बोर्ड ने समितियों, आयोगों और राष्ट्रीय पाठ्यचर्या ढांचा-2005 की अनेक सिफारिशों के बाद स्कूल आधारित सतत एवं व्यापक मूल्यांकन **1 h hbZ** तथा परीक्षा सुधारों के लिए पहल की है। **1 h hbZ** योजना छात्र के सम्पूर्णतावादी मूल्यांकन का चित्रण करती है जिनमें जीवन कौशल, मनोवृत्ति एवं मूल्य, क्रीड़ा एवं खेलकूद के साथ-साथ पाठ्येतर गतिविधियां जैसे सह-शैक्षिक क्षेत्र भी शामिल हैं।

बोर्ड ने **1 h hbZ** योजना आरंभ करने से पहले पिछली तिमाही में गुवाहाटी, चेन्नई, त्रिवेन्द्रम, पंचकूला, इंदौर तथा लखनऊ में अंशधारकों के लिए केन्द्रित सामुहिक चर्चाओं का आयोजन किया था। इन कार्यशालाओं का आयोजन मुख्यतः छात्रों, अभिभावकों, अध्यापकों, प्रधानाचार्यों तथा शिक्षाविदों से अंतर्व्यवहारिक पद्धति में प्रतिपुष्टि प्राप्त करने के लिए किया गया था। प्रबंधन विकास संस्थान **1/4 eMvkbZ** गुडगांव द्वारा विकसित प्रश्नमाला के माध्यम से प्रतिपुष्टि ली गई थी। प्रश्नमाला को बाद में ऑनलाइन भी रखा तथा 6000 से अधिक प्रतिक्रियाएं प्राप्त हुईं जिनका विश्लेषण, **eMvkbZ** द्वारा किया गया।

योजना की घोषणा परिपत्रों एवं परामर्शिकाओं (परिपत्र सं. 39,40,42,50,51,52,53,54,62 एवं 63) के माध्यम से की गई थी। विभिन्न विषयों में रचनात्मक मूल्यांकनों एवं सारांशात्मक मूल्यांकनों के लिए पाठ्यक्रम के अतिरिक्त योजना की घोषणा होते ही बोर्ड से संबद्ध सभी 11,600 विद्यालयों में प्रशिक्षण कार्यशालाएं आरंभ की गईं। प्रपाती अभिगम का प्रयोग किया गया जिसमें सरकारी विद्यालयों, केन्द्रीय विद्यालयों, जवाहर नवोदय विद्यालयों तथा निजी स्वतंत्र विद्यालयों में मास्टर प्रशिक्षकों को प्रशिक्षित किया गया जिन्होंने आगे 6 घण्टों के प्रशिक्षण माड्यूल में प्रत्येक विद्यालय के एक प्रधानाचार्य तथा दो अध्यापकों को प्रशिक्षित किया। अभी भी कुछ ऐसे विद्यालय हैं जिन्हें अक्टूबर से दिसम्बर 2009 के बीच प्रशिक्षण के चार चरणों में शामिल नहीं किया जा सका। बोर्ड इस सूची को समन्वित करने की प्रक्रिया में है और बाद में उनसे सम्पर्क किया जाएगा।

प्रशिक्षण कार्यशालाओं की प्रतिपुष्टि का विश्लेषण किया जा चुका है और 87.27 प्रतिशत प्रतिक्रिया देने वालों ने कहा है कि सत्र से वे **1 h hbZ** की अवधारणा को समझने में सक्षम हुए हैं। 90.48 प्रतिशत प्रतिक्रिया देने वालों ने कहा कि उनके विचार से सह-शैक्षिक अधिगम क्षेत्र को दिया गया महत्व उचित है।



योजना शिक्षक नियम-पुस्तिका, 1 hl hbZसंबंधी पेंफ़लेट, 1 hl hbZसे संबंधित स्कूल आधारित प्रमाण पत्र, कक्षा-9 से संबंधित मॉडल रिपोर्ट कार्ड, बार-बार पूछे गए प्रश्न, 1 hl hbZके संदर्भ में जीवन कौशल, नया आगाज़, 1 hl hbZसंबंधी मूवी, प्रधानाचार्यों तथा अध्यापकों को प्रशिक्षित करने हेतु प्रशिक्षक नियम-पुस्तिका, पावर प्वाइंट प्रस्तुतीकरण, मुख्य विषयों में नये फार्मेट में प्रतिदर्श प्रश्न पत्र जैसी बड़ी मात्रा में सहायक सामग्री की प्रस्तुति से समर्थित है ।

यह वास्तव में हर्ष का विषय है कि विद्यालयों से किए गए अनुरोध की प्रतिक्रिया में अनेक विद्यालयों ने अपनी दूरदर्शिता से 1 hch, 1 bZy lskk* तथा 1 hch, 1 bZukjk प्रस्तुत किया तथा इनमें से dScfjt Ldw] verlj द्वारा डिजाइन 'लोगो' तथा fnYyh ifGyd Ldw] xWj uls Mk द्वारा तैयार नारे का चयन किया गया । मैं, दोनों प्रधानाचार्यों सुश्री सुनीता बाबु व सुश्री कामिनी भसीन को उनकी कुशल प्रतिक्रिया एवं सहभागिता के लिए बधाई देता हूं। बोर्ड ने इसी दौरान 1 hch, 1 bZवेबसाइट पर 1 hl hbZ कार्नर के तहत एक फीचर 'इन्टरेक्ट विद चेयरमैन' तथा छात्रों के लिए टोल फ्री हेल्पलाइन नम्बर 1800118002 की भी शुरुआत की है। इस फीचर पर 5000 से अधिक सवाल प्राप्त हुए तथा उनका जवाब भी दिया गया। 1 hch, 1 bZको ज्ञात है कि कोई भी महत्वपूर्ण सुधार अकेले नहीं किया जा सकता तथा परिवर्तन की प्रक्रिया में शामिल सभी साझेदारों के विचारों एवं मनोवृत्तियों की बाधाओं को दूर करने तथा अत्याधिक प्रतिबद्धता की आवश्यकता है। हम निश्चित रूप से उन सभी के आभारी हैं जिन्होंने आगे आकर इस राष्ट्रीय उद्यम में स्वेच्छा से अपना छोटा या बड़ा योगदान दिया ।

मैं, आप सभी का व्यक्तिगत रूप से धन्यवाद करने में असमर्थ हूं किंतु मैं उन सभी का आभार प्रकट करता हूं जिन्होंने शैक्षिक रूपांतरण में अपना योगदान दिया । मैं आशा करता हूं कि इसमें आगे सुधार एवं प्रेरणा के लिए आप अपना सहयोग एवं रचनात्मक प्रतिपुष्टि सतत रूप से प्रदान करते रहेंगे ताकि हम मिलकर विश्वास तथा साहस के साथ आगे बढ़ सकें ।

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Feedback Forum

Respected Sir,

I take this opportunity to express my gratitude for the CBSE Teacher's Award conferred on the occasion of the Teacher's day. I thank you for the appreciation that my school, my faculty whom I represent has received. I assure you that we will continue to render our service to society with zeal and dedication as we did in the past.

With great pleasure I would like to congratulate you on the latest reforms which have been introduced by CBSE under your leadership. I am sure this will immensely reduce stress for both students and their parents. Teachers, parents and students have whole heartedly welcomed the continuous comprehensive evaluation process as it will truly encourage the habit of exploring other avenues of learning. Assessment of co-scholastic areas for holistic development of the pupils is a welcome step towards changing the previous mindsets.

I would be delighted if my school or staff can be of any service to CBSE.

Regards,

Renu Laroia, Principal
Shaheed Rajpal D.A.V. Public School,
Dayanand Vihar, Delhi 110092

Dear Sir,

Thank you very much for giving me an opportunity to be a resource person for the CCE Examination Reforms held at Mysore from the 4th to 6th November, 2009.

During the Programme at Mansarovar Pushkarini Vidyashrama many questions were raised by the Principals of different schools about the CCE.

Conducting the training session was great learning experience for me and I look forward to working closely with the CBSE in the future as well.

With warm regards,

Rekha Krishnan

Principal
Vasant Valley School, Sector C,
Vasant Kunj, New Delhi 110070

Dear Sir,

On behalf of the faculty and staff of DPPI, DAVCMC, New Delhi, I wish to express our heartfelt thanks to you for having addressed Inaugural Ceremony of Master Trainer Programme on Examination Reforms and Continuous & Comprehensive Evaluation on October 26, organized by DPPI in collaboration with CBSE for DAV Regional Directors and Principals at Kulachi Hans Raj Model School, Ashok Vihar, Delhi—110052.

DAV delegates were highly impressed by your proactive leadership in implementing Examination Reforms and scheme of CCE in CBSE affiliated schools. Your inspirational address will go a long way in motivating teaching fraternity. Your policy perspective and profound insights on the issue cleared their doubts and they felt confident about implementation of CCE in the current session. We thank



you for sparing precious time from your busy schedule to address the Ceremony.

We sincerely hope that we shall have more such opportunities of working together in future.

With regards,

Yours sincerely,
(Rashmi S. Chari)
Asst. Director- DPPI
DAVCMC – New Delhi

you for addressing the gathering and the experiences that you shared with us influenced both our staff and students deeply.

We sincerely look forward to many more such interactions.

Thankyou once again.

With warm regards
Ameeta Mulla Wattal ,
Principal,
Springdales School, (Pusa Road)

Esteemed Sir,

I am highly obliged to your good self and would like to convey my hearty thanks and congratulations to depute me to the Management Development Programme on Strategic Leadership for the Principals of CBSE schools during June, 5th 2009 at Indian Institute of Management Lucknow. It was my first training programme.

I am highly impressed with the lectures. I cannot forget to name Professors R. Srinivason and Vivek Gupta who impressed me a lot.

Thanks

regards

S. Gurdeep Singh, (Principal)
Isher Academy , Bhopatpur karnapur pilibhit (U.P)

Respected Sir,

With immense joy and happiness I am writing this letter to you. We, 40 Students of the Senior Secondary Section of Alphonsa English Medium School, Thamarassery, Calicut and myself, consider it an honour and privilege to have presented the Cultural Programme 'JAI HIND' in your honour on the occasion of the All Kerala CBSE Principals' Conference at Gokulam Park, Cochin, on 2nd October 2009. Your gracious presence and blessing really enthralled us. It was an unforgettable experience for us to have spent those wonderful moments in your great company.

Thanking you,
Yours faithfully,

Fr. George Thomas
Principal
Alphonsa English Medium School, Thamarassery

Dear Mr. Joshi,

It was a pleasure to have you in our school on the occasion of **Annual Day** on 5th December 2009. I would like to thank



Dear Mr. Joshi,

We thank you very much for giving us the opportunity to host the workshop on '**Advocacy and Training regarding Examination Reforms in CBSE and the Scheme of Continuous and Comprehensive Evaluation**'. Richa Agnihotri from our school has enjoyed the experience of working with CBSE on the Teachers' Manual. Our resource people are in frequent touch with your office for guidance with respect to the workshop. Preparations are well underway.

Yours sincerely

Payal Kapur

Principal,

Step by Step school, Plot No.A-10
Sector 132, Taj Expressway Noida

It gives us immense joy to know that CBSE is introducing the 'Continuous and Comprehensive Evolution (CCE) in schools, which is aimed at enhancing Life Skills-Values, Positive Attitude, Thinking, Social and Emotional skills etc. Kindly accept our heartiest congratulations on initiating this noble and novel initiative.

Thanking you very much

Sunder Iyer

Vishwa Seva Educational Trust.

Dear Sir,

We have conducted Teacher Training Workshop- Advocacy and training regarding examination reforms in Central Board of Secondary Education and the scheme of

Continuous and Comprehensive Evaluation (CCE) from 10th November to 12th 2009.

In the inauguration programme the Chief Guest was Prof. K.K. Saxena, Director, Pacific Institute of Management & Technology and Professor of Economics in IIT, Kanpur.

Resource Persons for the workshop were:

1. Ms. Rupa Chakravary,
2. Ms. Rita Kapoor
3. Mr. Dibyendu Sen Sharma
4. Ms. Sugandh Sharma

The Programme was appreciated by all the participants.

We thank you very much for your co-operation and valuable guidance for the Programme. We are highly obliged and assure our best co-operation in future for any of such programmes.

With regards,

Yours sincerely,

S.K. Sharma

Vice Principal

Maharana Mewar Public School,
Udaipur

Respected Sir,

I am very happy to convey to you my sincere thanks and gratitude for deputing me for the programme on Strategic Leadership for schools in a Changing



Environment held at IIM- Ahmedabad. It was a wonderful experience. The presentation, discussion and the interactions were very fruitful & gave us deep insight into many of the current educational problems and how to nurture effective leadership in the school environment. The resource persons put in their sincere efforts. The materials and presentations made were well prepared and very appropriate to the current requirements.

It is requested that such training facilities may be extended to the middle level academic staff and to the teachers also.

Thanking you

Your sincerely

Dr. E.K. Mohd Shaffe

Principal & H.O.I.

International Indian school -
Dammam, Saudi Arabia

I wish a great success to the CCE scheme.

Yours Sincerely

Shashi Banejee

Principal

Bhavan Vidyalaya, Panchkula

Dear Sir,

It is indeed my privilege to convey my gratitude for issuing instructions to schools affiliated to the CBSE for implementation of "**Tobacco Free School Guidelines**". This effort will go a long way to support the tobacco control initiatives of the Government. Tobacco is a menace facing not only our country but the whole world and efforts are being taken globally to fight it and WHO constituted a global treaty in the form of Frame Work Convention on Tobacco Control (FCTC), which has 168 countries as its signatories.

I am keen to share the details of "Health Promoting School" concept as the theme is relevant to both the programmes.

With Regards,

Yours Sincerely,

(Dr. Jagdish Kaur)

Directorate General of Health Services,

Nirman Bhawan,

New Delhi

Dear Sir

We would like to congratulate you and your team of visionaries for re-defining the essence of education and giving it a meaning in its true sense. Never before CCE had been better understood and conceptualized as is it now. The Teachers' Manuals and training programme on CCE have added new dimensions to the whole concept. As an educationist I sincerely hope the collective efforts of all the scholarly will make tomorrow's generation more responsible and caring members of the society.

At the very outset I sincerely thank you for giving me an opportunity to be officially present and see the Concept, Content and Methodology of the PEC India Workshop..



Let me first congratulate the CBSE & British Council for initiating this UK-India Sports Development initiative to promote Physical Education in Schools. The CBSE has decided to implement the programme in its Schools, which is going to have a real impact. It is said that "COMING EVENTS CAST THEIR SHADOWS BEFORE", and this PEC India programme categorically highlights the significance of strong foundation for younger generation. The entire programme is based on sound principles of early childhood care for proper growth and development.

Yours faithfully,

Dr. G P Gautam

National Association of Physical
Education and Sports

loss of self esteem. The feedback provided by eminent academicians can play a vital role in addressing the issue in a positive way.

I extend my full co-operation in this regard & am expecting more such innovative approach in alleviating stress.

With warm regards,

Yours sincerely,

(Dr. Vijay Kumar)

Principal

AV Public School,

Pakur Jharkhand

Esteemed Sir,

I express my sincere thanks to you for focusing on De-stressing Examination : making a mark in your Vol. 48 of Jan-March' 2009 issue.

The views presented by Principals of leading schools on stress were informative and highly commendable not only for our students but also for teachers and parents who are responsible for bringing a great change in the lives of umpteen students.

Alleviating stress of examination from the minds of learners is of paramount importance. It is true that stress plays a negative role and hampers the physical & mental health of a child resulting in the

At the very outset we would like to express our appreciation for the quality of CENBOSEC. It is very educative as well as informative. Our Vidyalaya is located in a rural area of Rajasthan, and for the past thirty three years we are trying to contribute towards education. We expose our students to different thoughts and fields with a strong conviction that ours is to provide with as many options as possible so that they can choose on their own.

Thanking you,

With regards,

Sincerely yours,

(Raghunandan T)

Vivekananda Kendra

Vidyalaya Hurda



Evaluation: to Prove or Improve Learning?

N R Murali*

The present society by and large emphasizes the ends more than the means, the examinations have acquired an importance much beyond their designated role and purpose. More damaging is the fact that there is the sea change in the nature of the society especially the economy and the inability of present day schooling to meet this new challenge.

Today we live in a knowledge intense economy or innovation economy where the minimum requirement for survival and excellence is the ability for knowledge or idea generation. This implies that knowledge is neither static nor complete. Knowledge is both dynamic and evolving in nature. This was beautifully brought by the Noble winning economist, Alan Schumpeter, in his concept of '*creative destruction*'.

This can be seen very easily in the technical world and the best example is, say, radio. Initially, we had valve sets, which were subsequently replaced by transistor sets and these in turn were replaced by IC sets. But now majority do not feel the necessity of having a separate radio as this function has been integrated into a mobile handset. What is obvious here is the fact that new inventions or creations eventually destroy old creations. Hence he called this process as '*creative destruction*'. This can further be appreciated by looking at New Growth Theory economists, who forcefully argue that creativity and idea generation are central to today's economy. Also creativity, today, is not restricted to individual brilliance; rather it is deeply social and most of today's important innovations typically emerge from collaborative team work.

But look at what the examination at the end of the academic session is doing. It is simply assessing how much facts and procedures one has acquired in the whole session. Facts and procedures are less relevant compared to the knowledge generation and creativity. Because these examinations are to be conducted in a limited time frame at a specific point in time, it is not possible to have open ended questions by which the creativity of the individual can be assessed and encouraged. There is also no scope for collaboration in these examinations. Therefore, the examinations, the way in which these are being conducted, has lost its relevance in today's world.

Having identified the problem, the next stage is to look for a suitable working solution. The first step in this is to know about the present understanding about education. Theories

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of education have moved away from behaviourism to cognitivism to constructivism. All these developments have culminated in the development of '*Learning Sciences*' which is an interdisciplinary field, drawing on multiple theoretical perspectives and research paradigms so as to build understandings of the nature and conditions of learning, cognition, and development.

Research spanning 30 years in the field of Learning Sciences which seek to uncover fundamental principles of human learning have been summarized by Bransford et al., in *How People Learn*. They have highlighted many areas of consensus, out of which the following deserve our attention here:

1. **The importance of deeper conceptual understanding** : Simply acquiring facts and procedures is inadequate for a person to become a knowledge worker. Knowing when to use it as such and where and how to modify in new situations is the requirement. With deeper conceptual understanding, students learn facts and figures in a much more useful and profound way that transfers to real world settings.
2. **The importance of building on a learner's prior knowledge** : The best way for children to learn is in an environment that builds on their existing knowledge. Teaching that engages their prior knowledge, leads to deep and long lasting learning and also enables them to relate to the world outside the classroom.
3. **The importance of reflection** : Students learn better when they are provided with opportunities to reflectively analyze their state of knowledge. Conversation or creating papers, reports or other artefacts should be resorted to in expressing their developing knowledge.

There is one common thread one can see in all the three areas of consensus listed above and that is to make learning a life long process. Deeper conceptual understanding empowers the learner to transfer classroom learning to real world settings in which the individual is going to spend his life time. And precisely, this is the requirement in the knowledge oriented society.

The conventional assessment which is a single summative assessment conducted at the end of the academic session can certainly not support deeper learning. Therefore it is necessary to add certain other elements in the process of assessment which will then prove that evaluation is not just to prove learning but to improve learning. This would then lead to the requirement that these cannot be a one time affair and hence it has to be spread over the entire academic session. And this is where the importance of continuous comprehensive assessment lies.

Now let us look into the components introduced in the scheme of Continuous Comprehensive Evaluation (CCE) by the CBSE. These include two broad areas viz., summative and formative assessment. The former is an assessment of extent of learning using the



traditional methods. Whereas the later is an effective tool in the hands of the teacher to continuously monitor student progress in a non threatening, supportive environment. It has a list of definite advantages as has been already elaborated in the CBSE publication on this subject.

Coming to the various tools of formative assessment like Projects, Surveys, Observations, Explorations, Experimentation, Quizzes, Conversations & Interviews, Oral questions, Seminar / Symposium, Field Tour, Commentaries, open book tests etc., we can easily see that they are not only learner friendly but also encourage deep learning. But to achieve this, the teacher has to choose the appropriate tool in the given context.

A further careful look at these items would clearly indicate that these are the activities through knowledge / idea generation takes place in the society today. In any complex activity, as in the case of launching of Chandrayaan or building a nuclear reactor, the project mode alone is employed. What is special in the project mode is that knowledge and skills from diverse fields are employed; whereas, the different subjects are taught in water tight compartments in schools. Moreover none of the real life projects are executed by a single individual and these are all collaborative endeavours. Therefore projects involving different subjects and with an opportunity to collaborate, would provide a learning experience which is in good alignment with real life activities.

Similarly, all the other tools included in the formative assessment are the ones which are in consonance with the ways of knowledge generation and use by the society. Moreover they provide the much wanted opportunity for reflection, which is a very vital thinking skill for even survival in today's knowledge intense society. But the most important aspect of these tools is they not only support but encourage deep learning. By following the scheme of CCE in letter and spirit, we shall be preparing a set of students better prepared their future than the ones prepared using the conventional methods.

Let us appreciate the fact that **the objective of evaluation is to improve learning and not just to prove learning.**



Formative assessment- the frequent assessments of student progress to identify learning needs and shape teaching-has become a prominent issue in education reform. The achievement gains associated with formative assessment have been described as "among the largest ever reported for educational interventions".

OECD 2005, Formative Assessment: Improving Learning in Secondary Classrooms



The challenge of Objective Assessment in the Psychomotor domain

Pramod Kumar T.K.*

"Individual children frequently have capacities and skills which do not find adequate recognition in the school environment. Development and flourishing of these skills and capacities would not only enhance the individual's life but also enrich the life of the community."

- NCF 2005, Position paper on Aims of Education.

Education aims at the development of 3 Hs-Head, Heart and Hand. It is therefore important to know whether the schools as 'Educational Institutions' help students to become complete human beings by proper development of these 3 Hs. **Continuous and Comprehensive Evaluation** envisaged by the Board is meant for schools to assess the students in totality as this 'system of school-based evaluation covers all aspects of student development'. This in turn will check the effectiveness of teaching learning processes in the schools. Moreover evaluation is considered as an instrument to provide inputs to the learner for optimum development. Hence it is imperative that we equip ourselves with the mechanism and techniques of such a comprehensive evaluation.

In 1956 Benjamin S. Bloom and others have identified three domains of human learning. According to Bloom human learning is considered to take place at three levels called **Cognitive, Affective and Psychomotor domains**. Cognitive refers to the intellectual domain and psychomotor domain deals with the manual or physical skills, whereas the affective domain deals with the emotional aspects of human learning. In today's world maximum emphasis is given to the cognitive domain. Bloom proposes **Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation** as a part of taxonomy in the cognitive domain. We specify the objectives of our lessons in terms of this taxonomy at the planning stage. While setting the question paper (for evaluation) we include questions to test the achievement of objectives in the cognitive domain. Thus we have different types of questions to test the knowledge, comprehension and application. The introduction of questions on **H.O.T.S.** (Higher Order Thinking Skills) takes care of evaluation in the highest levels of cognitive domain.

Testing in the cognitive domain has been found to be comparatively easier and we have been doing the same for many years through our Formal Evaluation in schools and at the Board's level. Moreover we tend to give more importance to the cognitive aspect leaving aside the affective and psychomotor aspects of human learning. A student who secures very good marks in the Board examination is our favorite, even if he/she lacks many skills and values. By



knowing the importance of emotional aspects, some times we also test the attitude, aptitude etc at various stages of learning. Over the years various mechanisms and techniques have been evolved for testing the area of affective domain with the help of tools like attitude scales, aptitude testing etc. However we have to admit that psychomotor domain is totally neglected for any such methodical assessment. In general the psychomotor domain is considered to address skill development relating to manual tasks and physical movement. This domain includes physical movement, coordination, and use of the motor skill areas. However we should know that, it also covers modern day business and social skills such as communication skills and operation of IT equipment. Examples of such other skills are telephone and keyboard skills or public speaking. If our schools do not take care of such skill development, then we will not be able to create quality human resource in our country.

For the sake of better instruction and objective assessment in the psychomotor domain one must know the **taxonomy of educational objectives in this domain**. Though Bloom has tried to categorize affective domain, little is said about psychomotor domain. **Harrow, Simpson and Dave** are the researchers who had given detailed taxonomy in psycho motor domain. Dave's psychomotor domain is probably the most commonly referenced and used psychomotor domain interpretation. Dave's taxonomy in this domain is as under.

1. **Imitation:** This is the first stage of learning in this domain where a learner tries to imitate by observation. Here performance may be of very low quality. For example copying an art is a type of imitation.
2. **Manipulation:** Here the learner shows some skills as per instruction or reading some instructions and practices the same. Example is creating work on one's own after taking lessons, or reading about it.
3. **Perfection/Precision:** The learner then modifies his action to correct his /her mistakes to be perfect. Though refined, few errors are apparent. Example is working and reworking on something to make it right.
4. **Articulation:** After practice and proper co-ordination stability in action is achieved. After this stage there is consistency.
5. **Naturalization:** This is the highest level where in the skill has become part of natural behavior. He may not be conscious about his actions and performance is of very high standard. e.g. after learning to drive a vehicle we naturally change gears or feel the vehicle.

The knowledge of the taxonomy in the psychomotor domain helps us in making proper lesson plans. As teachers we need to understand that a child starts learning skills with imitation. Hence opportunities for students to observe good quality work should be made available. For



this we can always make use of audio visual aids for showing the performance of an expert in the field. We can also invite a good public speaker in the school to enhance public speaking skills or allow the children to participate in different competitions for exposure in the respective fields. We as teachers should demonstrate high quality performance in our field as children consider us as role models. Teacher's role becomes much more important in the second stage of manipulation, where right inputs must be given in the form of instructions. More over a teacher should give positive feedback to correct the mistakes to achieve perfection. The formative evaluation helps us to give the right feedback at the right time. For attaining the last two stages proper guidance and motivation may be provided. If due care is taken in the earlier stages, the learner will definitely reach the stage of Naturalization.

The categories proposed by **Simpson** will also help us to understand other aspects of this important domain. According to Simpson a learner uses **sensor cues** to guide motor activity. For example a person estimates where a ball will land after it is thrown and then moving to the correct location to catch a ball. It is important that a learner must have the right '**Set**' for learning. By Set Simpson means the readiness to act. It includes mental, physical and emotional sets. These three sets are dispositions that predetermine a person's responses to different situations. This is closely related to the affective domain. Therefore it is important for a teacher to create interest in the activity for effective learning. In the early stages in learning a complex skill, people use **imitation and trial and error**. Adequacy of performance is achieved by practicing. Then learned responses become **habitual** and movement can be performed with some confidence and proficiency. Proficiency is indicated by a quick accurate and highly co-ordinated performance requiring a minimum of energy. In this stage a person performs without hesitation. In the last stage skills are well developed and the individual can modify movement patterns to fit special requirements. Finally the individual creates new movement patterns to fit a particular situation or specific problem. This is the stage which is referred by Dave as Naturalization. During this stage, learning outcomes emphasize **creativity**, based upon highly developed skills.

Harrow is another renowned researcher who has studied the psychomotor domain in detail. According to Harrow the basis of psychomotor learning is **reflex movements**. These reactions are not learned and are inborn in any individual. Apart from this there are some basic movements like walking, grasping etc. It is important that a child correctly respond to stimuli such as visual auditory, kinesthetic or tactile. Hence children should be given opportunities to develop these skills. Stamina must be developed for further advancement, such as strength and agility. **Practice** will help the person to have skilled movements as one would find in sports or acting. In the last stage of '**non discursive communication**' the person expresses and conveys feeling and meaning through movement and actions.

From the above discussions we understand that psychomotor domain does not function in isolation. For development of various skills, we also need to give importance



to affective and cognitive aspects of a child's learning. Therefore we need to adopt proper strategies for creating learning situations and for formative and summative evaluation in the psychomotor domain. As with any learning activity, assessment begins with the learning objectives. **Objectives** in this domain are created under the same criteria as objectives in the other domains. While writing the objectives, we express the same in behavioral terms. Because of wide usage, we may stick to Dave's taxonomy of educational objectives. **Key words** connected to each category are as given under. The objectives should be written using these key words for clarity in evaluation.

1. **Imitation:** copy, follow, replicate, repeat, adhere, observe, identify, mimic, and try, re enact, and imitate.
- 2) **Manipulation:** re creates, build, perform, execute and implement
- 3) **Precision:** demonstrate, complete, show, perfect, calibrate, control, and practice
- 4) **Articulation:** construct, solve, combine, coordinate, integrate, adapt, and develop, formulate, modify, master, improve and teach
- 5) **Naturalization:** design, specify, manage, invent, and project-manage

Using these key words, objectives may be written in behavioral terms.

E. g, *student demonstrates effective technique while performing 20 'Surya Namaskar' within 10 minutes.*

It is important that we understand the stage and accordingly the objectives are set. The above objective is meant for the stage of Precision. For objective assessment, it is better to create a **checklist** so that instructor assesses the mastery of the student in meeting these objectives. Based on this a **rating scale** can be prepared like the one given below:

5----- **Excellent:** Performs the Surya Namaskar flawlessly. Does not need to check Position, does not pause. Completes 20 Surya Namaskar without Pausing within the 10 minutes

4 ----- **Very good:** Performs the Surya Namaskar but is somewhat unsteady but completes in 10 minutes

3 ----- **Good :** Performs the Surya Namaskar but is somewhat unsteady. May pause one or more times. Takes more than 10 minutes to Complete 20 Surya Namaskars

2----- **Above average:** Performs the Surya Namaskar but is very unsteady, may pause one or more times and or takes more than 10 minutes

1----- **Needs to improve:** Cannot complete Surya Namaskars correctly.



It is very important that we need to set clear cut objectives as per the stage of learning for assessment in the psychomotor domain as in any other domain. This will help us in proper planning of the lessons and objective assessment of various skills. More over these assessments (even summative at the end of a session) should be viewed as formative in nature as the purpose of evaluation must be to improve the performance. At the same time, care should be taken while setting objectives in this domain as it is not possible for all children to have same physical maturity or ability to perform a task for various reasons. It is better to set individual goals or objectives as far as possible and the performance should be viewed against achievement of individual goals. Due care should be taken while dealing with **differently abled children**. Record keeping is another important aspect of any such objective evaluation. Teachers should keep the records regularly and the same should be used for grading. It is also important to prepare descriptive indicators for grading and involve all teachers as these measures reduce any subjectivity in evaluation. The Teachers' Manual published by the Board will be of immense use for such an objective assessment.

In conclusion we need to understand that there is lot of planning and efforts required for any Comprehensive Evaluation. Teachers should be given opportunity to learn from their peers and should be given right kind of training for the success of CCE. In the coming times when schools are going to be more and more 'Independent' in Evaluation, the enhancement of core competencies of teachers will decide the success of evaluation at the school level.

In Continuous and Comprehensive Evaluation Scheme, there is an emphasis on reflective practice and evidence and the key evaluative questions become what difference do we make to our students' lives? How do testing helps students to develop, to grow, to achieve, to learn, to succeed, etc? Arguably it enables teachers to be more proactive in influencing policy, rather than merely to demonstrate levels of usage in a somewhat reactive way. This organic model of evaluation encourages teachers to focus on learning and it is a balanced approach which is closely in tune with the holistic development of child. Continuous and Comprehensive Evaluation Scheme help teachers move beyond one-dimensional satisfaction indicators. In short it could be seen to put the 'values' back into evaluation.



Holistic Evaluation – A Necessity

Mrs. Nirmal Yadav*

Education is not one of, but the most important aspect of a country's dominions that impact growth and development.

Post Independence, several commissions and committees were set up to suggest improvements or changes in the Education System. Unfortunately, education was relegated to the back bench with each passing decade and quality was the first casualty. The initial euphoria of Independence however brought in some world class institutions of higher learning but few schools came up that could truly make a qualitative impact in terms of quantity, as these institutions were few and far between.

Every idea is accepted when its time has come. Change brings in resistance as it forces one to step out of the comfort zone. For long, we have relied on marks as the only tool for academic evaluation, neglecting the non-cognitive domains.

We have taken the first step across the threshold to understand that assessment does not mean only academic proficiency, rather it encompasses other human traits, or in other words, Continuous Comprehensive Evaluation.

This first step of acknowledgement will lead to a long journey of qualitative mental, physical and emotional growth.

A century ago when literacy and education were synonymous, marks were a necessity. The non scholastic traits, virtues and character building were left to family and society and teaching was limited to the 3 R's. Industrialization and advent of technology made learning far more simpler, and schools were not the only citadels of learning. Definition of a learned person shifted from a storehouse of information to a holistic, multi-skilled human capable of mental competence, emotional balance and spiritual growth.

The shaping of an idea into a successful and viable form requires it to meet the following criteria :

- ❖ spreading awareness about its necessity

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