GYAN VIGYAN SARITA:शिक्षा

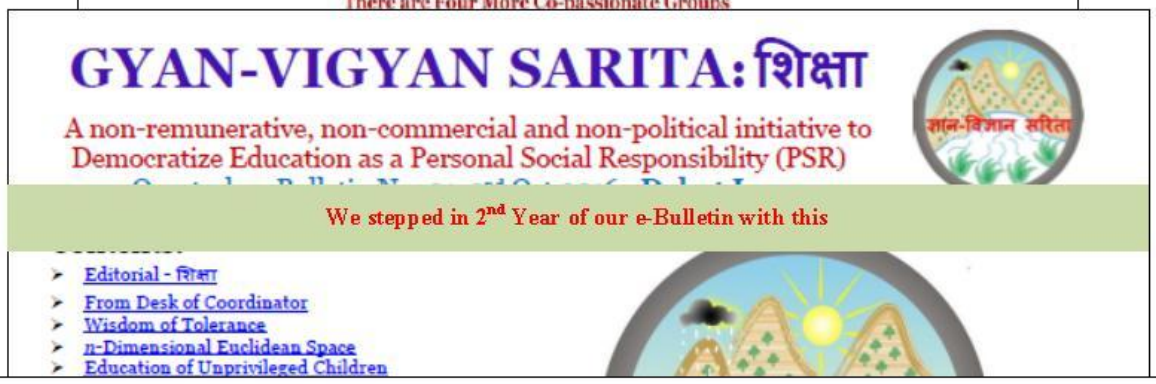
A non-organizational, non-remunerative, non-commercial and non-political initiative to Democratize Education as a Personal Social Responsibility (PSR)

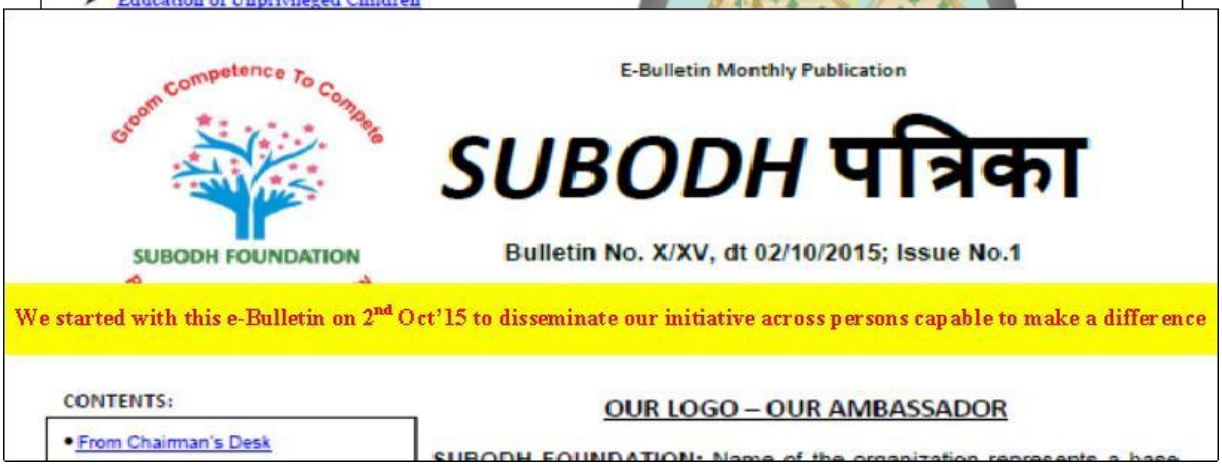
4th Annual e-Bulletin dt 2nd October'19on sdtart of Fifth Year of the Publication

We are stepping with Fourth Annual Bulletin stepping into Fifth Year

with an enthusiastic response of authors from a wide cross-section

sharing their views on different aspects of life impacting education directly or indirectly





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Students' Section

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We have learnt that LIFE is neither fast nor sudden leaps;
It grows gradually and sreadily through pits and rises.
We heave learnt on every fall, more was needed from us;
Irrespective of how others were.
We have learnt that when tide is against, swim hardest to keep moving ahead;
When in favour swim fastest to create a reserve in case of contingencies.
We have also learnt that reasons are in abundance to justify losses,
But there is only ONE reason to do good beyond self.
LIFE is MUST for sustainable coexistence.

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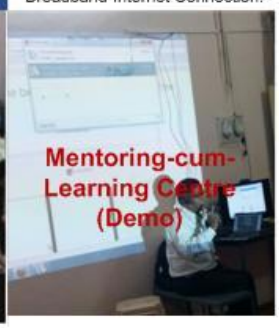
Aim at the Best, but...

Conceptual Representation
of
Online Mentoring
An Initiative To Bridge Gap between
Passionate Teachers
and
Desperate Students
A Selfless Endeavour
to
Democratize Education
with a sense of
Personal Social Responsibility (PSR)

Equipments at Mentoring Center
1.Desk-/Lap-top
2. WebCam
3. Headset with Microphone
4. Digital Pen
AND
Broadband-Internet Connection

Cloud Internet
(Linking platform : cloud based with as low bandwidth as possible for seamless connectivity of audio-video-whiteboard across nodes where internt connectivity is poor- Presently A-VIEW is in use)

Equipments at Learning Center
1.Desk-/Lap-top
2. WebCam
3. A Mixer-cum-amplifier with Speakers
and Wireless Microphone
5. Overhead Projector.
6. UPS (For Continuous Power Supply to computer, internet modem and L&F)
AND
Broadband-Internet Connection:



Important Links
1. Good Internet Connectivity (Wired Broadband Connection)
2. Subject-wise Coordinator for Each Session to Bridge Learning Gaps between Mentor & Students

Special Features
1. Free and Open to all to adopt. Modify, change, correct
2. Welcomes participation, promotion and facilitation on Zero-Fund-Zero-Asset (ZFZA) basis
3. More details on Technological and Operational – please write on **http://www.gyanvigyansarita.in/contact/**

... start, without loosing time, with whatever is available.

Infrastructural requirement for Centres in Interactive Online Mentoring Sessions (IOMS)

Learning Centre (if asked for by Mentor)		Mentoring Centre (if asked for by Mentor)	
Estimated Capital Cost (One Time)			
Particulars	**Cost (in Rs)**	**Particulars**	**Cost (in Rs)**
Desktop (without monitor)	20,000	Laptop	25,000
Projector	9,000	Projector	-
Web camera	2,000	Web camera	-
Mixer cum amplifier with Speaker and Wireless microphones	14,000	Headset with Microphone	3,000
Total	45,000	Total	28,000
Wireless Surface Writing Device (WSWD). It shall be required when Learning Centre is ready for collaborative use of Whiteboard.	15,000	Wireless Surface Writing device	15,000
Total with WSWD	60,000	Total with WSWD	43,000
Estimated Recurring Cost			
a. Internet charges, based on estimated monthly data transfer which depends upon choice of cloud platform, and tariffs of ISP b. Cloud Platform Charges, to be shared across Learning Centres		Internet charges, based on estimated monthly data transfer which depends upon choice of cloud platform, and tariffs of ISP	
Cloud platform : A-VIEW indigenously developed by Amrita University. It is found to be best among available options for use in IOMS. It has been developed for use in imparting Interactive Online Education, with bilateral audio-visual access, in an interactive manner. Cloud platform. a. The IOMS envisages session upto Five Learning Centres. Charges for the platform whenever payable may be shared across in mutual agreement between Learning Centres. b. Benefit of sharing of charges of cloud platform can be optimized with offset of schedule among multiple sessions of IOMS, to the extent Mentor can deliver.		IOMS is since an initiative driven with Personal Social Responsibility (PSR) operating n Zero-Fund-&-Zero-Asset (ZFZA) basis, the Cloud Platform has to provided by Learning Centers for deriving benefit of IOMS. Gyan Vigyan Sarita will be pleased to connect Learning Centres for collectively complementing the cost of Cloud Platform, whenever payable, for arriving at a mutual agreement for cost sharing. So also IT Infrastructure with the Mentors has been in use and is working. But, at any stage if upgradation becomes essential, support of learning centres, beneficiaries of the initiative, is gratefully welcomed on ZFZA basis. Operating cost of Mentor, if required, shall be supported by Learning Centres.	

Specification: These are based on ground level operating experience and need of optimizing the cost on the initiative. This is essential to utilize financial resources, considered scarce, for benefitting more number of students at more number of centres and mentoring centres. These specifications have been updated based on experience of operation of IOMS with available options. MS WhiteBorad a free App of MS office has been tried out in IOMS and is found satisfactory, until a better option is available.

Web Camera: iBall 20.0 HD with a wall mounting

Projector: Portronics POR 624 LED Projector Beam 100 Lumen, Screen Size 130 Inch , 800x480px resolution

Sound System: Ahuja Make PA Mixer Amplifier Model DPA-370, 30 W Max/37W Max, with PA wall speakers PS-300T 10W, and a wireless unit AWM-490V2 Dual Cordless Microphones. This sound input/out when decoupled with USB sound adopter to connect to the computer required echoless environment is achieved in the Classroom and networked mentor and Learning Centres.

Cloud Platform: A-VIEW (Amrita Virtual E-Learning World) developed by Amrita University in association with IIT Bombay, an MHRD, GOI sponsored project.. Problems with Whiteboard functionality of A-VIEW are being circumvented with OneNote app of MS Office for IOMS. This has many features of minimizing bandwidth requirements.

Surface Writing Device: HUION make Model WH1409, or Wacom model Intuos with wireless device makes it suitable for communication with base computer in class in an interactive online environment.

UPS: An additional accessory, for uninterrupted continuity of session, based on power availability to be decided by Learning Centre, **not included in above cost estimates.**

Furniture and Lighting: At Learning Centre, as deemed fit by local administration of Learning Centre, **not included in above cost estimates.**

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संपादकीय

कोशिश भरी इच्छा-शक्ति के साल

ज्ञान विज्ञान सरिता के बीते साल, समाज-सेवा के प्रति कशिश से भरा कोशिशों वाला दौर रहा है। परिवार के हर सदस्य ने अपनी योग्यता और क्षमता के अनुसार कार्य किया। जिससे जो बन पाया, जैसा बन पाया, जितना बन पाया, उन्होंने समाज में बच्चों को शिक्षित करने के लिये, और उनका बौद्धिक स्तर ऊंचा उठाने के लिये, उतना अवश्य किया।

ज्ञान विज्ञान सरिता परिवार के संयोजक और उनके सहयोगियों का योगदान अनुकरणीय और बेमिसाल रहा है। उनका प्रयास प्राकृतिक और प्रेरणादायक रहा है। हम नये साल में इस आशा और विश्वास के साथ बढ़ चले हैं कि ईश्वर उन सभी को स्वस्थ और सक्षम रखेगा ताकि सबका संयुक्त सेवा-भाव, संस्थान को लगातार ऊंचाई पर ले जाने में मददगार साबित होगा।

समाजसेवा कोशिश से होती है, किसी का इंतजार करने से नहीं होती है। किसी को आगे चलना पड़ता है, और राह दिखानी पड़ती है। वही कोशिश सफल होती है जिसमें सामान्य कामों को भी असाधारण रूप से अच्छी तरह से किया जाता है। यही हमारी टीम का सतत प्रयास रहा है ताकि समाज मिलकर आगे बढ़ सके ।

सफलता का अचूक मंत्र है-जितनी बार गिरो, उतनी बार उठो, हार मत मानो। घड़ी का पेंडुलम हमसे क्या कहता है? वह कहता है -घड़ी बड़ी है अथवा छोटी, पेंडुलम बड़ा है अथवा छोटा, दूर तक जाता है अथवा नजदीक से ही लौट आता है, पर हर पेंडुलम जाने और आने में एक ही समय लेता है। हां, बिल्कुल एक ही समय लेता है।

ठीक इसी प्रकार चाहें हम कोशिश थोड़ा करें, बड़ा करें, पर लगातार करते रहें, तो हमें सफलता अवश्य मिलती है और वह भी अच्छों के बराबर ही मिलती है। कोशिश की कोई सीमा नहीं होती है। कोशिश के बल पर किसी भी असंभव कार्य को किया जा सकता है। कोशिश करने से हम विद्वान बन सकते हैं। कोशिश करने से हम अपनी दुर्बलता और गुमनाम जिंदगी से बाहर निकलकर महान बन सकते हैं। कोशिश करने से हमारा आत्मविकास होता है, हमारी आत्मशक्ति बढ़ती है, हमारा आत्मविश्वास बढ़ता है, और हमारे अंदर वह ऊर्जा पैदा होती है जो हमें बताती है कि हम औरों से बेहतर हैं।

एक किंवदंती है कि किंग ब्रूस स्काटलैंड का राजा था। वह इंगलैंड के राजा से छह बार युद्ध किया और हर बार हारा। वह निराश हो गया, और भागकर एक गुफा में छिप गया। वहां उसने देखा कि एक मकड़ी छत में बने अपने जाले से नीचे गिरी पड़ी है। वह मकड़ी अपने जाले तक जाने के लिये दीवार पर चढ़ती थी, गिरती थी, फिर चढ़ती थी, फिर गिरती थी। यह क्रम कई बार हुआ, और एक बार ऐसा हुआ कि वह मकड़ी चढ़ते चढ़ते अपने जाले तक पहुँचने में सफल हो गयी।

ब्रूस ने उस मकड़ी से प्रेरणा लिया, अपने साथियों को इकट्ठा किया, फिर से ताकतवर बना, और अबकी बार युद्ध में जीत हासिल किया। उसने सीख लिया था कि लगातार कोशिश कभी बेकार नहीं जाती है। जब हम आलस्य को त्याग देते हैं और मेहनत को अपना लेते हैं, तभी से हमारी कोशिश का दौर शुरू हो जाता है।

जल्दबाजी और उतावलापन कोशिश नहीं होती है। धैर्य और विचारकर काम करना ही कोशिश होती है। जब हम किसी काम को बार-बार करते हैं, तब हमें उस काम को करने और उसके परिणाम से होने वाले हानि-लाभ, दोष-गुण, आदि दिखायी देने लगते हैं। हमें इसी समय जरूरत होती है कि हम इनमें से अच्छों को अपना लें, अपने अनुकल कर लें, और खराब को हमेशा के लिये छोड़ दें। इसी मौके को अपने लिये फायदेमंद बना लेना, कोशिश की सही दिशा पा लेना होता है।

कोशिश करने से व्यक्तित्व पूर्ण बनता है। लगातार कोशिश करने से हममें नेतृत्व की क्षमता विकसित होती है। केवल ज्ञान से व्यक्ति मंजिल पर नहीं पहुंच सकता है। मंजिल पर पहुँचने के लिये ज्ञान को एक आधार की जरूरत होती है और कोशिश वही आधार होती है।

कुछ सीखना हो, सिखाना हो, चाहें वह नृत्य हो, संगीत हो, पकवान बनाना हो, अथवा लेखन करना हो, खेल की दुनिया हो अथवा कम्प्यूटर की दुनिया हो, हर जगह लगातार कोशिश की जरूरत पड़ती है।

हताशा और निराशा जीवन के लक्ष्य नहीं होते हैं, ऊर्जावान रहना और विकास की राह पर दौड़ने की कोशिश ही जीवन का मूल ध्येय है। जो काम करने की सोच रखकर, आगे बढ़ते हैं, वे जरूर अच्छा नतीजा देते हैं।

थामस एडिसन ने एक बार में जलने वाला बल्ब नहीं बना डाला था। कई बार असफल रहने के बाद, वह एक सही जलने वाला बल्ब बना पाया था। उनसे जब किसी ने उनकी कई बार की असफलता के बारे में पूछा तो उन्होंने कहा - मैं न जलने वाला बल्ब बनाने की कई विधियां जानता हूं।

सफलता का एक ही राज होता है-कोशिश, और एक और कोशिश। जीवन में कोई भी परिस्थिति पहले से बनी नहीं होती है। यह हमारे हाथ में होता है कि उस परिस्थिति को हम अपने अनुकूल बनाने में कितने माहिर हैं। कठिनाइयां हमें जीवन में आगे बढ़ने के लिये कई रास्ते सुझाती हैं, और कई तरीके सिखाती हैं। यही सीखे हुये लगातार तरीके, हमारे अनुभव बनते हैं। हमारे अनुभव हमें आगे बढ़ने की प्रेरणा देते हैं। हमारे अनुभव हमारे अंदर की छिपी प्रतिभा को पहचानने में हमारी मदद करते हैं।

हमें सफल होने के लिये अपनी कोशिश को समय समय पर जांचते रहना चाहिये। सफलता के लिये जरूरी है कि हम अपने को पहिचानें। जो व्यक्ति स्वयं को जितनी जल्दी पहचान लेता है, वह उतनी ही जल्दी अपनी मंजिल की ओर चल पड़ता है, और पहुँच भी जाता है।

आइये, हम निम्न पंक्तियों से ज्ञान विज्ञान सरिता परिवार के आने वाले समय को और अधिक उज्ज्वल बनाने की कोशिश करने का प्रण लें :

कुछ तो ऐसा कर चलें, जिस पर हो अभिमान

इस दुनिया की भीड़ में, बने अलग पहचान

जयभारत!

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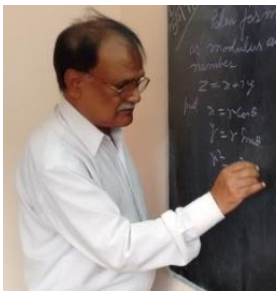
हमारा प्रथम पंचवर्षीय प्रवास

(2012-2017)

Start: June-2012



April-2015

June-2016 to June2017

पारम्परिक शैक्षणिक मार्दर्शन से प्रारम्भ कर आज हम तकनीकी-विकास के सहारे मूलभूत प्रासंगिकता को आगे बढ़ने में संलग्न हैं.

यह प्रयास अपने सामाजिक कर्त्तव्य के प्रति सहजविनीत आग्रह है; कृपया इस पर विचार करें.

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"I have been impressed with the urgency of doing. Knowing is not enough; we must apply. Being willing is not enough; we must do."

-Leonardo da Vinci

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Coordinator's View

IOMS : Philosophy, Requirements and Vision

Gyan Vigyan Sarita *(GVS) is an initiative which was started about Four Years ago by a small group of Four compassionate persons. Each of them have had lived a life with a vision beyond. This initiative is driven with a sense of* ***Personal Social Responsibility (PSR)****. It is executed in a non-organizational, non-remunerative, non-commercial and non-political manner. In present times there are immense opportunities and dimensions, yet this initiative focuses on education of unprivileged children with an emphasis to groom competence to compete among them. This initiative has three facets-* ***(i)*** *Monthly e-Bulletin Gyan Vigyan Sarita-शिक्षा, its audience are elite persons who are capable of making a difference. It focuses in creating awareness among ots audience towards PSR and taking a first step towards the larger good.* ***(ii)*** *Mentors' Manual in Mathematics, Physics and Chemistry. Their target audiences are teachers. It is developed based on experience of mentoring students coming from deprived families. It is aimed at making the subjects, otherwise considered difficult, relevant to target students.* ***(iii)*** *Last but not the least is Interactive Online Mentoring Sessions (IOMS), our flagship, which connects us to students from deprived families; most of them are first generation students. It transcends into the above two facets.*

This article is an elaboration of the evolution on of basic constituents of IOMS into a working model, not a buzzword, beyond their literal meaning, together with its ideology, and ground level realities and ex[eroences. It is believed that it will help schools and teachers to appreciate passion, vision and commitment that has gone in evolving IOMS as much as minimum expectation from Learning Centers so as to avail its benefit individually or collectively, as may be deemed fit.

Interactive implies that students are in pro-active interaction with their mentor, and not passive attendees. IOMS is done remotely and therefore it requires that mentor at remote end and coordinator in-the-class called Learning Center (LC) are in close communication. Coordinator needs to pro-act to bridge the gap in learning of students and communicate it to the mentor with difficulties of students, if any, for necessary guidance. In the process school maintaining LC and teachers have an opportunity to get groomed so as to become torch bearers of IOMS. These schools apart from benefitting their students can use the opportunity to connect other schools down the line, involving coordinators so groomed, in IOMS. Technology provides facility to connect more than one classroom to a mentor. This, however, should be extended based on comfort of mentor to manage concurrent LCs effectively.

Online implies students and mentor are connected such that while mutually they each other they can also onliney see, hear and read/write on the board online. Marginal delay, if any, in transmission of speech and images is inevitable; it is regulated by data-speed and congestion at that point of time in the internet. This makes it different from video sessions. In IOMS mentor is able to gauge and engage response of a group(s) of students attending IOMS. This provides chance to students to commit errors and receive an instant response of mentor similar to that in Chalk-N-Talk environment. But, any mistake committed by mentor could create an inerasable impression or understanding students all across. This makes student(s) highly vulnerable to acts of omissions or commissions of mentor. Thus IOMS becomes more challenging by leaving no room for mentor to correct. Yet, the only way of correction is next chance to interact with the students.

Keeping this reality under consideration a method has been evolved where students interact among themselves in groups. Each group comprises of 4-6 students depending upon the size of the class. These groups create summary of each session in the form of group notes. These notes are e-transmitted to mentor through coordinator-teacher for checking and making observations in respect of errors or omissions if any. During the next session these checked notes are displayed by mentor to bridge gaps in mentoring and understanding of students at large. This paperless model of invoking participation of students in IOMS is highly eco-friendly. This apart from invoking group dynamics is a close loop where - **(i)** error of students in understanding or its reproduction is timely corrected and **(ii)** error or omission, if any, committed by mentor is properly resolved.

Mentoring is slightly different from teaching and much away from either coaching or tuition due financial implication of the latter. Teaching when carried out passionately tends to be mentoring. Mentoring stretches beyond teaching by way personal care and concern of student(s). This process, in remote mode of IOMS, a virtual reality, is extremely difficult. This makes IOMS thrilling and more interesting. Mentoring is since an inspired activity it is proactive and doesn't stop at boundaries of syllabus or leave a room for complacence to fire inquisitiveness among students and their questions relating to how and why of concepts involved in their studies. It prompts mentor to explore a forward path and overcome forbidding circumstances for better learning of students, approaching them from the level where their ignorance starts, with an open mind. As against this, teacher is a person who responds to motivation which can be either of salary, perks, job continuity, promotion, posting place or a whip. The moment motivation is fulfilled a teacher aspires to next higher level of satisfaction in its hierarchy, and teachers awaits another motivation to become proactive. In absence of a perpetual and higher motivation reverting back to dormancy is usual phenomenon.

Mentor encourages students to raise their doubts during the session while difficulties, questions and problems are invited in IOMS through offline communication similar to that adopted for summary of sessions. These communications when routed through coordinator it keeps him abreast with the current of learning-cum-mentoring and provide necessary feedback to the mentor, wherever necessary.

Session is ground reality of philosophy of IOMS. It involves mental and physical activation of all participants' viz. students,

coordinator, mentor and management of LC. During session each of the participants works for a common cause. Whereas, during class the only active person is teacher, where, generally, students are free to choose level of their participation. This discriminates session into a team work while class is like broadcast. This widens role of a mentor to focus upon the synergy towards his perspective and where he wishes to lead his students; while a teacher is constricted to strictly completing syllabus. In real terms education is about opening thought process right from observation to utilizing experience of implementing solutions, scope of mentoring is upto the limit where a mentor can take his students, while that of a teacher is final result of examination. A renowned teacher in Madhya Pradesh, Bharat Vyas has opined that "*a student getting 90%+ marks necessarily may not be proficient in the subject, but a student proficient in subject has capability to get marks nearing 100%*". Likewise an accomplished architect Prakash Karve has said – "*There are two types of students One is Parikharthi (परीक्षार्थी)and the other is Vidyarthi (विद्यार्थी). A Parikharthi studies from examination point of view, while Vidyarthi studies for Vidya, which means wisdom. We should mould students in the second category to get good results ..".* Thus, a teacher in literal sense limits growth of students and turns them to be followers, while a mentor leads students to be thinkers, creators and performers. In the process mentor does even hand holding if any student requires it, a challenge in remote online environment. Eventually sessions are conducted in the IOMS to make students first good team player and then a leader, a necessity for sustainable growth with coexistence.

Implementation of IOMS involves efforts in many dimensions as outlined hereunder –

Technological Environment: IOMS is since technology driven model, technological environment forms its backbone. It has multiple components as under -

(i) *Internet Connection*: Reliable and stable broadband internet connection is a necessity for seamless communication between mentor and LCs. In this application both upload and download of data are almost equal, so is the requirement of upload and download speeds. ISPs generally provide $\frac{1}{8}^{th}$ of the available bandwidth for upload and hence it creates obstruction in continuous streaming unless each node is operating with bandwidth more than 40 Mbps. Dedicated fiber-optic connection is ideal. But, keeping in view the prevalent trend of growth in communication network 10 MBPs normal connection is considered reasonable, and it is expected that ISPs in coming days would offer higher speed well to cater to multiplexed transmission of audio and video dynamically, necessity in IOMS.

(ii) *Sound System*: Computers have duplex input-output audio port computer for microphone (mic) and amplifier-cum-speakers. Generally this port is connected to amplifier unit which in turn provides ports to connect to both speaker and mic. This system creates a coupling between microphones and speakers causing severe problem of surrounding noise. This noise despite control of level of both speaker and mic, adversely affects acoustic quality to the mentor and connected LCs. A tested solution to decouple mic and speaker at LC is to use a USB sound adopter having separate input/output ports for mic/amplifier-cum speaker. Wireless unit with dual mic is recommended for convenience of students to communicate with the mentor.

(iii) *Extended Monitor*: At mentoring center an extended screen is used to view participants at each of the LCs. Similar screen at LCs would help participants in each class to get motivated from response of their peers at other LCs. This also helps to display questions raised by any student or their group to mentor; it facilitates stepping directly into solution of the problem, a time and cost effective remedy. The only pre-requisite for this is communication of such questions in advance to the mentor.

(iv) *Cloud Environment*: A-VIEW is dedicated for educational purposes. Amrita University, the proprietors, are making it available with Five Learning nodes, free of cost, to GVS for its selfless initiative IOMS, to mentor unprivileged children. Instead of a blanket authorization; it is being extended every Two months. Otherwise, it carries subscription. Other free platforms like Google Hangouts and Skype are available but they pose certain limitations in IOMS. Any expansion of IOMS would need A-VIEW or similar kind cloud platform to the IOMS mentor(s) for which subscription has to be borne by LCs.

(v) *Whiteboard*: Though A-VIEW has an inbuilt Whiteboard, yet writing experience on it has been sluggish making it unsuitable for IOMS and therefore its utility remains unexplored. Instead, Microsoft Whiteboard has been found reasonably satisfactory for online application; in addition it can be used collaboratively by sharing link with LCs. In forward run this facility shall be used to involve students to participate in evolving solution to the problem by using a surface writing device costing about ₹ 10,000. This will help to enhance interactive feature of IOMS and thus infuse confidence in students for their capability to handle problems, at a insignificant marginal cost. In the process support of mentor is always available to students.

Economics: Considering educational need of the model to address a large proportion of population deprived of opportunities, the capital input of IT infrastructure has been tailored and standardized. This model has been implemented at Govt. Higher Secondary School, Kanwan, Distt. Dhar and its details can be obtained from its Principal Shri Sanjay Shukla (M: +91 97557 78784) a living example of grit and determination with clarity of objective. In the model available IT equipment have been utilized with minimum marginal expenditure. The idea behind IOMS in imparting education the primary requirement is passion, while requirement of financial resource is made as minimum as possible. This is the reason start of IOMS at an LC with school administration open to avail its benefits, with the available resource is given the priority. Once IOMS becomes functionally stable further step-up viz. sound system, extended whiteboard and surface writing device for collaborative use of whiteboard can be made within the affordability with sky as the limit, without feeling a pinch of it. This will help to address larger number of students within the available scarce resources.

Academic Environment: An obvious question may erupt is as to why academic environment is not placed first in an educational initiative. The basic reason is subject are medium for grooming intellectual and professional capability of students. But, above three dimensions enhance emotional competence of students to become better team performer, a real necessity in their path

ahead. The beauty of mathematics and science is that it cannot be learned in isolated manner. It involves integrated learning. Therefore, while maintaining focus on the syllabus, any concept that is required to assimilate the subject matter is made contextual. This is in totality an out-of-box approach and away from rote learning. This helps a student to open up his thought process to become a creative solution provider, and just not a either a consumer or a follower. But, this requires all players in IOMS to be on a close ideological convergence, a difficult reality, in an environment where education is tending to be a commercial commodity.

Financial Model: The driving force of the model is PSR among elite persons, who are collectively capable of making a difference. In this context qualified Senior Citizens (SCs) by way of their longevity, better health and financial conditions form an invaluable human capital for the society and the country. Yet, it has been experienced, in last seven years on this initiative, that as people grow in age they become less enterprising and they refrain from stepping out of their comfort zone. Active participation on IOMS requires catalyzing passion together with upgradation of available IT set up at marginal cost. Despite merits of involvement in IOMS in improving quality of time and age, available with SCs, requirement of passion and expenditure on the upgradation become severe retardant. This ground reality has helped this initiative to evolve Zero-Fund-&-Zero-Asset (ZFZA) financial model. This ZFZA model requires beneficiary school, individuals or groups oriented for social cause, corporate, administration and government to support needs of **(i)** upgradation and maintenance of hardware, **(ii)** recurring expenditure like internet charges etc, which is increasingly becoming cost effective and **(iii)** visit to the learning centers or associated with the initiative that may become incidental to stabilize IOMS. The ZFZA model propounds that facilitator of the provide to the mentor additional IT equipment in carrying out IOMS, while the facilitators remains the owner and the setup. It is just leased to the mentor for the purpose. In the event of inability of a mentor to continue with IOMS, the equipment shall be returned to the facilitator on as is where is.

In this model greatest beneficiary is the society with experienced human resource available at insignificant cost. At the same time SCs find in it an opportunity to make their life more purposeful physically, psychologically, socially, spiritually and emotionally.

Psychological Environment: School is a nursery of fertile, visionary, creative minds and any effort to either discriminate a student on physical, economical, social, cultural, geographical or any other reason is the utmost sin. This is the reason IOMS addresses children deprived on any account with full faith in their capability to grow, and their present is a result of their circumstances beyond their control. In view of this in IOMS a passionate effort is made to lift the students from the bottom, should they not get disgruntled and give up hope to strive for betterment. Accordingly, effort is made to make the academics as a medium of grooming thought process in an unbound manner. Apparently, a child mentored in isolation may speedily excel in intelligence but is bound to lack on emotional front. Therefore, making students to question, agree or disagree in-group is the thrust in IOMS. Such inquisitive students at time pose a tough challenge to mentors, but that makes IOMS different from other model.

Sociological Environment: Involvement of elite persons in mentoring of deprived children with a sense of PSR on the ground is a big social reform. Moreover, the mentoring model emphasizing upon group dynamics in an interactive manner creates an opportunity to each student to identify his potential and work upon to enhance his ingenuity. This model is totally indigenous based on our cultural traits. Individuals, corporate, social groups and government have many programs of social welfare. Yet, this initiative in its eighth year of inception and fourth years of IOMS should have fanned out in much larger proportion to benefit a much larger cross-section of children who are in need of it. Such a selfless initiative is seen to be left on its own to struggle to sustain. None, whomsoever claiming to be exponent of social welfare. can absolve itself from responsibility of its disproportionately slow growth.

Scope: Presently the IOMS covers mathematics, physics and chemistry starting from class 9^{th} and take it forward upto class 12^{th} to the extent Learning Centers are able to carry it forward. Choice of subject is based on academic strength of the core group. Decision to start IOMS from class 9^{th} is strategic. A student in class 9^{th} or 10^{th} is reasonably matured to get integrated in IOMS. Moreover, at this stage a student is not under either of academic, peer or competition pressure. In this period passionate mentoring with continuity, commitment and perseverance can provide wings of imagination, vision and ability to students to reason out observation. These observation shall have their genesis in environment of students. This is true when these three subjects are mentored by making them contextual to the environment of student with no bars. Such an approach makes learning of the subject intuitive and interesting without carrying the burden of learning. Such student would tend to reach escape velocity to become capable shishya (शिष्य) like Eklavya (एकलव्य).

Students, once getting connected with the mentor in IOMS they can always seek guidance in their forward journey in class 11^{th} and 12^{th} to dovetail their place in the career of their choice. Moreover, present choice of the subjects and class in IOMS is based on consideration of the bandwidth of the small group without any prejudice to other subjects and students. Persons aspiring to mentor students in other areas welcome to associate in IOMS or replicate it in their domain with a freedom to add, modify or replace based on their own experiences.

Conclusions: *The IOMS is just not an educational model but it is a philosophy in action in the growing technological environment, yet adhering to the cultural traits. Sooner we collectively meditate on it, lesser would be the damage to the legacy that we shall leave behind for our beloved descendants. In view of this, this article is concluded by quoting the famous poem of the Late Shri Ramdhari Singh Dinker"* फिर ...रह जाता कोई अर्थ नहीं".

—00—

फिर ... रह जाता कोई अर्थ नहीं

उन अगनित सुविधाओं का
नित जीवन के संघर्षों से
जब टूट चुका हो अन्तर्मन,
तब सुख के मिले समन्दर का
रह जाता कोई अर्थ नहीं।।

जब फसल सूख कर जल के बिन
तिनका -तिनका बन गिर जाये,
फिर होने वाली वर्षा का
रह जाता कोई अर्थ नहीं।।

सम्बन्ध कोई भी हों लेकिन
यदि दुःख में साथ न दें अपना,
फिर सुख में उन सम्बन्धों का
रह जाता कोई अर्थ नहीं।।

छोटी-छोटी खुशियों के क्षण
निकले जाते हैं रोज़ जहाँ,
फिर सुख की नित्य प्रतीक्षा का
रह जाता कोई अर्थ नहीं।।

मन कटुवाणी से आहत हो
भीतर तक छलनी हो जाये,
फिर बाद कहे प्रिय वचनों का
रह जाता कोई अर्थ नहीं।।

सुख-साधन चाहे जितने हों
पर काया रोगों का घर हो,
फिर उन अगनित सुविधाओं का
रह जाता कोई अर्थ नहीं।।

- श्री रामधारी सिंह दिनकर

—00—

IOMS का दर्शन (Philosophy)

➢ ग्रामीण अंचल के एवं वंचित परिवारों के बच्चों को उठाना, उनकी गलती बताकर संभव नहीं है ।

➢ परन्तु उनके स्तर से नीचे उतर कर स्तानीय शिक्षकों तथा व्यवस्था के परिपूरक बनकर यह संभव है।

ऐसे नहीं,
पत्ता टूट जायेगा!

ऐसे नहीं,
पौधा जड़ से उखड़ जायेगा!

ऐसे में गमला टूट सकता है

नीचे से उठाने पर गमला
और पौधा दोनों ऊपर उठेंगे

- सुदूर स्थित मार्गदर्शक (मेंटर) द्वारा
- स्थानीय शिक्षकों एवं सुविधाओं को
- स्थानीय स्तर पर विकसित कर
- विद्यार्थियों के वातावरण से विषय को प्रासंगिक बनाकर
- उनका मार्गदर्शन एवं शैक्षणिक उत्थान

—00—

EVOLUTION OF IOMS

- Philosophy of IOMS had its inception in Sarthak Prayash an NGO, in May'2012 in Chalk-N-Talk Mode with stray students.
- Its manifestation in the form of e-Bulletin started in 2016, on 2nd October with its First Issue **Subodh *पत्रिका***
- In May' 2017 the initiative was upgraded to IOMS, in its primitive form, with the efforts of its Shri Shailendra Parolkar
- This initiative was reorganized as Gyan Vigyan Sarita in 2017 with its e-Bulletin in the name of **Gyan Vigyan Sarita – शिक्षा**
- With this e-Bulletin as Fourth Annual issue, we are stepping in Fifth year of broadening communication to invoke participation of those who can make a difference, for the larger good.
- Presently it is a satisfactory working model on 'Minimum Need' basis.
- Currently about 200 students in Two rural schools, one in A.P. and other in M.P., are being mentored.
- We continue to look forward…..

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An Appeal: for Interactive Online Mentoring Session (IOMS) at your establishment

By Gyan Vigyan Sarita – A non-organizational educational initiative

Philosophy: Socio-economic reform through education with **Personal Social Responsibility** (PSR) in a non-organizational, non-remunerative, non-commercial and non-political manner.

Objective: Groom competence to Compete among un-/under-privileged children from 9th-12th in Maths, Physics and Chemistry, leading to IIT-JEE.

Financial Model: ***Zero-&-Fund-Zero-Asset (ZFZA).*** It calls for promoters and facilitators to provide infrastructure for use to the extent they feel it is neither abused nor there is a breach of trust. And, reimbursement of operational expenses, as and when they arise, to the initiative

Operation:

a. **Mode:** Interactive Online Mentoring Sessions (IOMS) since July'16, which has been recently switched over to A-VIEW, web-conferencing S/w, with connectivity upto 5 Learning Centers, with One Mentoring Center.
b. **Participation:** Voluntary and Non-remunerative, Non-Commercial and Non-Political

Involvement:

a. **Promote**r –
   i. Initiate a Learning Center,
   ii. Sponsor a Mentor who is willing to join on certain terms,
   iii. Sponsor cost of operation and up-gradation of infrastructure to voluntary mentors,
b. **Facilitator** –
   i. Provide space and infrastructure for **Interactive Online Mentoring Sessions (IOMS).** Most of it is generally available, and may need marginal add-on,
   ii. Garner support of elite persons to act as coordinators at the Learning Centre.
c. **Participator** –
   i. As a Mentor,
   ii. As a Coordinator,
   iii. Operational support
   iv. E-Bulletin and Website promotion for increasing its depth and width across target students

Background: *The initiative had its offing in May'12, when its coordinator, a non-teacher by profession, soon after submission of Ph.D. Thesis in 2012, at one of the IITs, under taken after retirement got inspired to mentor unprivileged students.*

The endeavour started with Chalk-N-Talk mode of mentoring unprivileged students starting from class 9th upto 12th. Since then it has gone through many ground level experiences and in July'16 it was upgraded to IOMS, a philosophy in action to reachout to more number of deprived students. Currently regular sessions of IOMS are held regularly for students of class 9th and above at few Learning Centeres. Efforts are being made to integerate more learning centers and mentors to diversify its scope and utilize our full capacity.

*It is a small group of Four persons including **Prof. SB Dhar**, Alumnus-IIT Kanpur, **Shri Shailendra Parolkar**, Alumnus-IIT Kharagpur, settled at Texas, US and **Smt. Kumud Bala**, Retd. Principal, Govt. School Haryana. More details of the initiative are available on our website and operational aspects of can be online accessed at IOMS .*

***Actions Requested:** May please like to ponder upon this initiative. **Queries** ,if any, are heartily welcome. We would welcome your collective complementing in any of the areas listed above at **Involvement**, to make the mission more purposeful and reachable to target children.*

Contact: Dr. Subhash Kumar Joshi, **Coordinator** –Gyan Vigyan Sarita.

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e-Mail ID: subhashjoshi2107@gmail.com, **Website: http://www.gyanvigyansarita.in**

—00—

अंदाज ए बयां

मैं गाँधी से मिला हूँ!!

समीर लाल 'समीर'

उस रात कुछ मित्र परिवारों के साथ जुआघर गया. सभी मित्र हिन्दुस्तानी थे. दरवाजे पर पहुँचते ही हम ठिठक गये. मेरे मित्र के मुँह से अनायास ही निकल पड़ा-वो देखो गाँधी जी! एकाएक धक्का लगा-कहाँ ये जुआघर और यहाँ कहाँ गाँधी जी!

फिर भी हम पलटे तो देखा लॉबी के दाँयी ओर एक मंचनुमा पत्थर पर मेनीकुइन - आदमी जो पुतला बना खड़ा रहता है , गाँधी जी के रुप में खड़ा था. कभी ज्ञानप्रकाश विवेक की कहानी 'माशा में गाँधी के ' मेनीकुइन के बारे में पढ़ा था आज साक्षात देख रहा हूँ वैसा ही माज़रा. गाँधी-जुआघर में. गाँधी-लोगों को जुआघर में आने का निमंत्रण देता , गाँधी-एक जिंदा पुतला, न हिलता न डुलता , बस तटस्थ भाव से सबको ताकता गाँधी.

जिन अंग्रेजों को कभी अपनी चुप्पी से डरा देने वाला गाँधी-आज उनके मनोरंजन का साधन बना बेबस खड़ा गाँधी. मेरे इन्हीं कानों ने सुना पास से गुजरती उस अंग्रेज महिला की फुसफुसाहट को-लुक , हाऊ क्यूट इज दिस गाँधी!! कोई कहता- पुअर गाँधी, लुकिंग सो स्वीट!! वेरी सेक्सी! इन बातों को सुनकर भी बिना हिले डुले खड़ा लाचार गाँधी-सेक्सी गाँधी-क्यूट गाँधी. मैने यह नायाब नजारा देखा. जिस गाँधी की पाँच सौ रुपये के नोट पर तस्वीर अंकित है. लगभग उतने रुपये घंटा अर्जित करने के लिये खड़ा मजबूर गाँधी.

लॉबी मे हालांकि हीटींग रहती है मगर फिर भी दरवाजा बार बार खुलते बंद होते रहते के कारण काफी ठंडा रहता है वहाँ का माहौल. उस माहौल मे जैकेट और कनटोपों से ढके लोगों को लुभाता सिर्फ एक धोती पहने अर्धनग्न खड़ा गाँधी. पेट की भूख मिटाने के लिये हर कष्ट सहता गाँधी-बेचारा गाँधी.

शराबियों और जुआरियों का आकर्षण का केन्द्र बना गाँधी शायद सबसे पापुलर आदम पुतला है. ऐसा मैने सुना वहाँ पर. मोस्ट सेलेबल एंड इन डिमांड गाँधी. लोग उसे देख कर हँसते हैं, चुटकुला बना गाँधी. लोग आते जाते थे, थोड़ी देर खड़े होकर गाँधी जी को निहारते थे और उनके कँधे पर टंगे झोले में कुछ लोग चंद रुपये भी डाल जाते थे. चार घंटे की ड्यूटी के बाद खुशी खुशी उन पैसों को गिनता गाँधी. छद्म मगर बिल्कुल असली सा दिखता गाँधी वरना मेरा दोस्त कैसे पहचान जाता. बनावटी, पुतला मगर सांस लेता पुतला और अपनी पलकें झपकाता पुतला-बिना हिले डुले खड़ा- अविचलित गाँधी. न कोई नेम प्लेट, न ही वो कुछ बोलता फिर भी सब जान जाते हैं वो गाँधी है-मौन खड़ा गाँधी. गाँधी की नुमाईश लगता गाँधी.

मैने पहले भी देखा है नव-धनाढ्यों को पार्टियों में आर्केस्ट्रा की धुन पर थिरकती नर्तकियों पर पाँच सौ के नोट पर सजे गाँधी को लूटता. गाँधी हवा में उड़ाया जाता है, फिर जमीन पर गिरता है और फिर उठकर उन नर्तकियों के ब्लाउज में कहीं खो जाता है. मैने यह भी देखा है कि हर बड़ी दो नम्बर डील में गाँधी ही प्रचलन में है , छोटे नोट किसी को गिनने और संजोने का समय नहीं. उन छोटे नोटों पर गाँधी भी नहीं है , वो इस प्रचलन से बाहर हैं. उन्हें गाँधी का आशिर्वाद नहीं है. मैने लिफाफों पर थूक से गाँधी को चिपकते देखा है , भारतीय डाक विभाग की टिकटों के माध्यम से. उसी गाँधी को जो बापू के नाम से जाना जाता है. उसी गाँधी की तस्वीर के नीचे बैठकर नेताओं को देश का सौदा करते देखा है.

किंतु आज यह जिंदा गाँधी. विदेश में नौकरी करता गाँधी-बिना हिले-डुले-एकदम सीधे खड़ा लोगों के आकर्षण का केन्द्र बना-पुरातन गाँधी सबको जुआधर में खेलने को लुभाता गाँधी.

मैं दोस्तों के साथ जुआ खेलने जुआघर के भीतर चला जाता हूँ और यह पुतला गाँधी- मेरे मानस पटल से होता हुआ मेरे भीतर समा जाता है. मैं अपने लिये स्कॉच का एक गिलास आर्डर करता हूँ. सिगरेट के धुऐं का छल्ला बना कर उस गाँधी की याद को उड़ा देने की असफल कोशिश करता हूँ. सिगरेट के धुऐं के छल्ले में गाँधी. मगर यह गाँधी मुझ पर छाया है. कुछ असहज सा महसूस कर रहा हूँ. घुटन से बचने को मैं वापस बाहर लॉबी में आ जाता हूँ. गाँधी की तरफ निगाह जाती है. उसकी ड्यूटी खत्म हो गई है.

वो मंच से उतर रहा है, उसकी जगह अब सद्दाम हुसैन खड़ा है. उसके पहले उसी मंच पर चार्ली चेपलीन खड़ा था. चार्ली चेपलीन से लिया मंच सद्दाम हुसैन को सौंप कर गाँधी मंच से उतर जाता है.

लोग ताली बजा रहे हैं और गाँधी मुस्करा रहा है. फिर नम्बर आता है उन लोगों का जो गाँधी के साथ फोटो खिंचवा रहे हैं. हर फोटो के लिये चंद रुपये जेब में ठूंसता गाँधी. महिलाओं के साथ चिपक कर फोटो खिंचाता गाँधी , बेबस मगर मुस्कराता गाँधी. दस मिनट फोटो सेशन के बाद गाँधी पीछे एक कमरे में चला गया. पाँच मिनट बाद निकला. अब वो जींस टीशर्ट पहने था-एक नये रुप में गाँधी. जींस टीशर्ट पहने गाँधी.

मैं उसके नजदीक जाता हूँ और उससे उसका नाम पूछता हूँ. वो कहता है , जावेद खान! गुजरात , भारत. और पूछता है कि क्या आप भी भारत से हैं. मैं हामी में सर हिला देता हूँ और उसके साथ साथ बाहर आ जाता हूँ. वो जेब से सिगरेट निकाल कर जला लेता है. पाँच मिनट पहले का गाँधी अब सिगरेट पी रहा है. मैं उसे गौर से देखता हूँ. मुझमे कोतुहल है. मैं उससे पूछता हूँ कि यार , यह सब क्यूँ करते हो , बड़े मेहनत का काम है और तिस पर से गाँधी. वो बोला कि भईया , पेट का सवाल है, क्या करुँ.

पाँच साल पहले आया था. कोई काम नहीं मिला. एक दोस्त ने यह नौकरी लगवा दी. पहले नेहरु बना , नहीं चला. लोगों को मैं पसंद नहीं आया. फिर सुभाष , उसमें भी फेल हो गया , कोई पहचान ही नहीं पाता था. तब जाकर गाँधी बना और भाई , मैं हिट हो गया. यहाँ गाँधी बिकता है, सब उसे जानते हैं. खूब पैसा मिल जाता है. परिवार भारत में है. उनको पैसा भेजना होता है हर महिने. अगर गाँधी न बनूँ तो मैं भी भूखा मरुँ और भारत में परिवार भी. ऐसा गाँधी जो चार घंटे बिना हिला डुले खड़े रह कर फिरंगियों और सैलानियों का मनोरंजन करके पैसे कमाता है ताकि एक मुसलमान जावेद का पेट भर सके और भारत में उसका परिवार जी सके.

वो गाँधी, जो जावेद को पाल रहा है , जावेद से गाँधी और फिर गाँधी से जावेद...और फिर घर जाने के लिये बस का इंतजार करता जावेद जो तीन दोस्तों के साथ कमरा शेयर करता है. जिस दिन जावेद थक जाता है या बीमार होता है , उस दिन गाँधी नहीं बन पाता और भूखा सोना पड़ता है. गाँधी को आराम नहीं. वो फिरंगियों की नौकरी करता है. नहीं करेगा तो यह मुसलमान जावेद विदेश में भूखा मर जायेगा और परिवार भारत में.

मैं इस गाँधी से मिला हूँ!!

लोकप्रिय चिट्ठाकार समीर लाल व्यवसाय से चार्टर्ड एकाउंटैंट हैं। आजकल वे कैनेडा में रहते हैं। उन्होंने कहानी लिखना पाँचवीं कक्षा में ही शुरु कर दिया था। आप कविता , गज़ल, व्यंग्य, कहानी, लघु कथा आदि अनेकों विधाओं में दखल रखते हैं| भारत के अलावा कनाडा और अमेरिका में मंच से कई बार अपनी प्रस्तुति कर चुके हैं। आपका ब्लॉग "उड़नतश्तरी" हिन्दी ब्लॉगजगत में एक लोकप्रिय नाम है।

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INVITATION FOR CONTRIBUTION OF ARTICLES

Your contribution in the form of an article, story poem or a narration of real life experience is of immense value to our students, the target audience, and elite readers of this Quarterly monthly e-Bulletin ***Gyan-Vigyan Sarita: शिक्षा,*** *and thus create a visibility of the concerns of this initiative. It gives target students a feel that you care for them, and they are anxiously awaiting to get benefitted by your contributions. We request you to please feel free to send your creation, by* ***20th of each month*** *to enable us to incorporate your contribution in next bulletin, subhashjoshi2107@gmail.com.*

We will be pleased to have your association in taking forward path our plans as under-

- ***With the the release of 1st Monthly e-Bulletin in its consecutive Fourth Year, we are gearing up for next Monthly e-Bulletin Gyan-Vigyan Sarita: शिक्षा due on 1st of ensuing month.***
- ***This cycle of monthly supplement e-Bulletin Gyan-Vigyan Sarita: शिक्षा is aimed to continue endlessly, till we get your तन and मन support in this sefless educational initiatice to groom competence to compete among deprived children.***

Formatting Guidelines: (a) Paper Size A4, (b) Fonts: Times Roman (English), Nirmala UI (Hindi), (c) Font Size Title/Author Name/Text: 14pt/12pt/10 pt (d) Margins: top/bottom/left/right – 1"/1"/0.4"/0.4", (e) Photoprofile of author – In 4-5 lines with mail ID and Photo. We will be pleased to provide softcopy of template of an article, in MS Word to the author on advise.

We believe that this e-Bulletins shall make it possible for our esteemed contributors to make its contents rich in value, diversity and based on their ground level work and/or experiences.

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Ayurveda- Health Care

Prevention From Seasonal Problems In Sharad Ritu (Autmn season)

- **Dr Sangeeta Pahuja**

Ayurveda provides the guidance about aahar-vihar (diet and lifestyle) in different seasons to stay healthy. Autumn season(15th september to 15th November) has Pitta prakop (Aggravated Pitta) and lavan(salt) Ras pradhan and person has the medium metabolic strength.

During Autumn weather has many changes, even interference between Summer and winter. Therefore, in the Autumn the temperature of day time and night may be erratic and have large fluctuations. This season leads to many problems like Eye infections, Skin infections, Allergic asthma, Hyperacidity, Urinary tract infection, Gastroduodenal ulcers and increased risk of heart disorders.

Favourable Diet and Lifestyle:

Diet: Follow Pitta Pacifying diet which is Madhur,tikt, kashay (Sweet, Bitter and Astringent) food items are Pitta Pacifying. Such items are barley, wheat,moong daal, sugar candy(shakkar), honey, patol, amla, jaggery, grapes, milk, meat of dry land animals, pineapple, raisins, apple, avocado, beans, tofu, cow milk, cow ghee, Triphla Churna, cardamom, dalchini, sweet fennel etc.

Ghee is highly beneficial to reduce pitta dosha and also helps improve agni (digestive fire). Also removes dryness of the skin caused in rainy season. Foods that are cold in potency, easily digestible, sweet, astringent taste are recommended.

Eat in moderation as the digestive fire would be weak during this season.

Lifestyle: Abhyangam (body massage) with oils made of Chandan, coconut oil, ushira, etc is recommended. Stay relaxed and good sleep is advised.Wear pearl necklace which acts as a coolant on the body. Do Sheetali pranayam.It is beneficial. Panchakarma is highly recommended in order to detoxify body and alleviate pitta dosha. Moderate exercise, wear flower garland of this season, apply paste of sandal on body and eat after short intervals is helpful

Unfavourable Diet and Lifestyle:

Diet: Avoid oily, spicy,heavy,sour food items like curd, flesh of Aquatic animals.

Lifestyle: Avoid exposure to sun, heavy exercise. Don't stay hungry for long hours, avoid overeating, day sleeping, avoid Eastern wind.

Prevention From Urinary Tract Infection: Urinary tract infection is an infection that affects the parts of urinary tract, kidney, ureter, bladder and urethra. According to Ayurvedic view, it is caused due to the imbalance of Vata and Pitta dosha. Accumulation of toxic substances increases the frequency of micturation. and causes painful micturation. Aggravated Pitta causes burning micturation.Incontinence of urine (increased frequency of micturation) is the major and common problem in the patient suffering from urinary tract infection.

Ayurveda provide diet and lifestyle guidance for the prevention and treatment .

Favourable Diet and Lifestyle:

Diet: Wholegrain, lentils, beans, kidney beans, black beans,split peas, chickpeas. sweet pear, apple,sweet potato, melon, cherries, raspberries, parsley, ginger,coriander leaves, garlic, oregano oil, sandalwood oil, redish leaves, yoghurt, Apple Cider vinegar, pumpkin, cranberry juice, Raisins, walnuts are good to consume.

Consume fennel seeds. Dry jamun powder can be taken twice daily. Mix well with One Tsp honey Mix and consume in the morning daily. Consume half TSF cinnamon powder with sugar daily. Consume 1tsp pomegranate paste twice a day before meals, coconut water, curd and buttermilk are also beneficial. Drink plenty of water.

Lifestyle: Do exercise. Kegel exercise should be done daily. Pelvic floor ball squeeze, running, sitz bath with dashmool kashayam is also helpful.

Do yoga daily,. Some of the asans that are helpful are - Surya Namaskar, Ushtrasan, Utkatasan, Moolbandha Pawanmuktasan, Trikonasan, Malasan.

Unfavourable Diet and Lifestyle: Avoid oily, spicy and junk food. Avoid Alcohol and areated drinks and caffeine. Avoid Anxiety,fear, anger. Avoid suppression of natural urges.

Know Ayurveda, Follow Ayurveda and Stay Healthy.

Author is an Ayurvedic Medical Practitioner. She did B.A.M.S. from M.D. University, Rohtak. She has consultation centres at Delhi and Noida. She is keenly interested in spiritual, women and social developmental activities. Contact No.: 9953967901,

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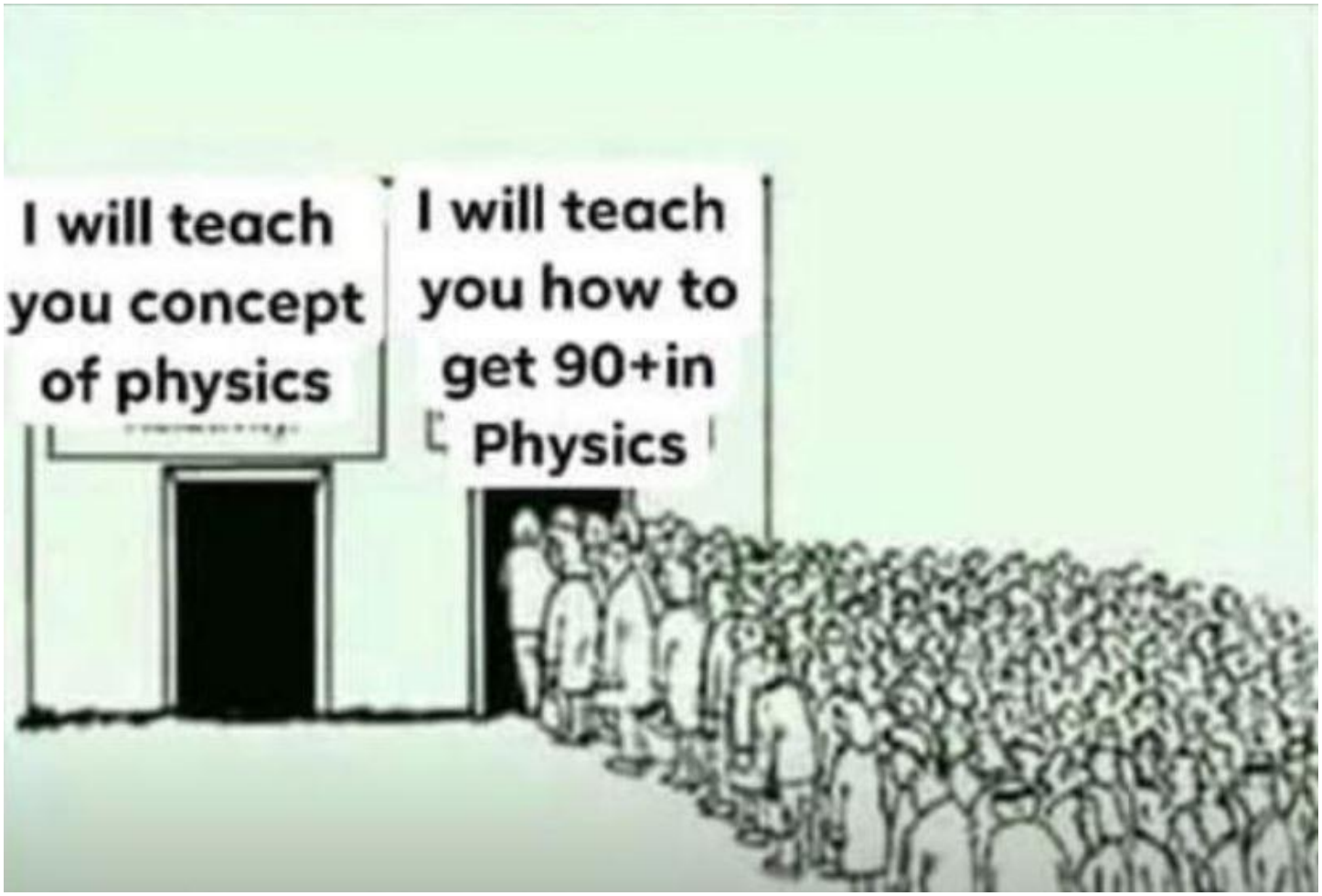

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Education and Deprivation- A Well Meaning Approach Riddled with Fallacies

Madhu Bala Nath

The history of education in India has been a chequered one. More than half a century ago in 1964, remarking on the state of education in the country, the then education minister of India Mr. Chagla had memorably said, : "Our Constitution fathers did not intend that we just set up hovels, put students there, give untrained teachers, give them bad textbooks, no playgrounds, and say, we have complied with Article 45 and primary education is expanding... They meant that real education should be given to our children between the ages of 6 and 14"

Efforts at improving the access to education so that education could be availed by even the most socially and economically deprived sections of the Indian community continued and in the 1990s, the World Bank funded a number of measures to set up schools within easy reach of rural communities. This effort was consolidated in the Sarva Shiksha Abhiyan model in the 1990s. Over the next two decades, education started being viewed as a right and an entitlement and the Right to Education Act was passed in 2009. This took the process further, and made the enrolment of children in schools a state prerogative. The Act made education a fundamental right of every child between the ages of 6 and 14 and specified minimum norms in elementary schools.

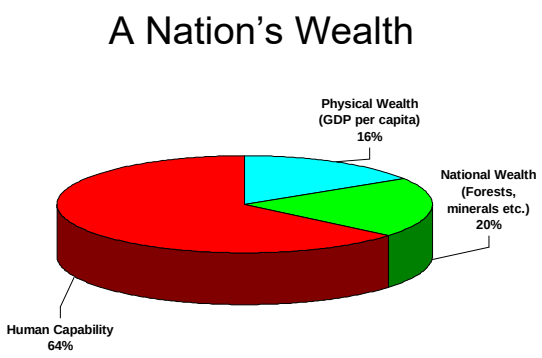
It needs to be noted that t**he Act also provided that no child shall be held back, expelled, or required to pass a board examination until the completion of elementary education. It made provisions for a non-admitted child to be admitted to an age appropriate class.**

Because of these provisions, ironical as it may seem, this very rights based and well meaning move has unfortunately become the trigger that is leading to a strange kind of social deprivation for those who had already been deprived of education. The compelling directive that a child had to be admitted to an age appropriate class and that no child could be held back until completion of elementary education has resulted in the creation of a group of children in the government schools who have certain rather disturbing characteristics.

Today, they are entering classes that are age appropriate for them but not classes that match their abilities. For example, an eight year old who has never been to school now enters class three with no knowledge or ability to cope with the curriculum of his/her class.. Furthermore he/she cannot be detained in the same class as mandated by the act. So he/she continues to get promoted inspite of educational deficit and cognitive disability that continues to escalate as he/she climbs one class after another. The result is that such children become the butt of jokes and ridicule by their classmates and emerge as individuals who are not empowered with education but as individuals with a low self esteem.

With a low self esteem, they become easy targets for being bullied and harassed, at times rather violently which could be traumatic for their mental health. Reports of bullying have been received from schools in both rural and urban areas.. India is home to an extremely competitive academic society**.** A child or teen doing poorly in school may bully a bright child out of resentment. Or bright children may bully those of lesser intelligence or economic status simply to lord their success over them. In Kolkata, 11 year old Oindrilla Das was locked in a school bathroom by senior classmates after school hours. The trauma she endured was so great it resulted in her death several days after the attack.

By definition, bullying generally involves an imbalance of power with the bully having dominance over his or her victim. This imbalance could be due to a number of deprivations - age, physical strength, social status or intellect. It is time we stopped to think. Is there a need to relook at the education policy and examine it for its fallacies? This is important because we need to plug any loopholes that may exacerbate capability poverty and existing deprivation in the country. The renowned economist, Amartya Sen has stated that a nation's wealth lies in its human potential. He has said that 64 percent of a nation's wealth comes from its human capital, 20 % from its natural resources and 16% from its economic growth i.e. GDP per capita.



As we talk of reaching education to the most deprived populations of the country through effective outreach, there is news that says that the quality of education provided by the government school system has been questionable. While it remains the largest provider of elementary education in the country, forming 80% of all recognised schools, it suffers from shortage of teachers and infrastructural gaps. Several habitations lack schools altogether. There are also frequent allegations of government schools being riddled with absenteeism and mismanagement and of appointments made on political convenience. Given this situation can the Right to Education act ensure that the education system is used to reach out to and invest its resources in those who are deprived? Deprived economically, socially, physically and mentally?

There are some more dimensions of the RTE act that are instrumental in perpetuating exclusion adn deprivation. The act excludes children under six years of age and in this sense could be viewed as promoting age deprivation. Furthermore, the act has no provision to take education to children with disabilities – more correctly, children with special needs (CWSN). Despite the promise of universal access to education, children with special needs form the largest out-of-school group in India. According to the 2014 National Survey of Out of School Children Report, about 600,000 (28%) special-needs children between six and 13 years of age are out of school. It must be noted that in India 45% Indians with special needs are illiterate. Among children with special needs, as many as 44% of children with more than one disability are out of school, and children with mental (36%) and speech (35%) disabilities are more likely to be out of school than those with other kinds of disability.

Finally the act provides for admission of children without any certification. However, several states have continued pre-existing procedures insisting that children produce income and caste certificates, BPL cards and birth certificates. Orphan children are often unable to produce such documents, even though they are willing to do so. As a result, schools are not admitting them, as they require the documents as a condition to admission. This is another example of how the implementation of the right to education act needs to be revisited as its poor implementation is in fact exacerbating deprivation.

From the data above, it is evident that even though the RTE Act was meant to promote inclusion and entitlements it is in fact becoming a vehicle for promoting deprivation in terms of insufficient outcomes relating to illiteracy and deficient social relations, lack of inclusion of the special needs of the disadvantaged, and is in fact fostering low self-esteem and powerlessness among the children in certain situations as explained above. There is no doubt that the intent and approach of the act was well meaning but its implementation has been riddled with fallacies that require urgent attention.

Author was formerly Country Director of Engender Health in India. She started her career in early Eighties as a Women Development Officer with the Swedish International Development Authority, (SIDA). Since then she has been associated with various international organization on the cause of women.

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If you can find a path with no obstacles, it probably doesn't lead anywhere

- Frank A. Clark

Indian Education System : Observations And Suggestions

Dr. Ekta Srivastava & Prof. Hari Om Gupta

The education system in India is in dire need of an overhaul. India, though looks up to its younger population with a lot of hope, is unable to provide the basic need of a robust education system.

Looking around we can easily notice the big divide in the society in terms of parents able to send their kids to the so called good private schools and the others who because of meagre income sources have to send their kids to government schools. When results of these schools are compared it is found that the students of the private schools are indeed doing very well as compared to the students of the government schools especially state government schools. So are the private schools really imparting the best of education? A deeper analysis shows that majority of private school students depend on private tuitions and coaching centres instead of their schools. Apart from this it is a known fact that government school teachers are selected through a stringent process of screening and testing and out of lakhs of applicants only a few hundred are able to land up with coveted government teaching jobs. Thus government schools have a pool of talent as compared to private schools. Hence many private schools which are essentially profit driven often hire teachers that lack subject expertise or the required skill and training. Hence, we are fully aware that the results are no indicators of a good school.

A generation back when private schools had not mushroomed, the state government schools had a heterogeneous group with students from diverse economic strata and educational backgrounds of the parents. This provided a strong peer group with an insight into the diversity of the society and a great platform for learning for the underprivileged. But in the current times state government schools with more or less the students from a particular economic section of the society are struggling with issues of discipline, irregular attendance, lack of effective teaching etc. The teachers have developed a laid back attitude which further aggravates the problem.

An interesting fact here is this that though the state government schools are in miserable condition, the central government schools are still doing very good. So when the expertise of teachers in both state and central government schools are almost at par, why this gap? We might get the answer if we look at the influx of both these schools. We notice that central government schools are still preferred by central government employees across all levels as the course pattern is same all over the country and helps their children to cope up in cases of transfers in the mid-session as well. So the Kendriya Vidyalayas are still fortunate to have a heterogeneous group of students and hence the overall culture of the schools is maintained.

Gone are those days when a student securing good marks in the Boards was assured of cracking the competitive exams as well. In the present scenario, boards all across India are competing with each other by inflating marks and promoting rote learning. Students are left baffled and frustrated when they have scored marks as high as 95-97% but fail to show well in the competitive exams like IIT JEE, NEET etc. These exams test the application based conceptual knowledge of the students whereas the schools and the Boards rely only on rote learning and set patterns. The schools either lack good labs or do not encourage visiting the labs. The emphasis is only on scoring in the written exams.

A lot is required to be taken care of at the school level. Though we have an educated generation but they lack proficiency in any skill that would make them employable. Efforts should be made to introduce a number of skills in the school, wherein a student should be required to take up at least one skill and develop it. Over here we need a new education system and unconventional teachers who encourage and reward creativity, original thinking and innovation at all levels. A student is allowed to come up with newer methods of looking at and solving simple problems. They will then be stimulated to come up with out-of-box thinking and ideas. Classes should move out of closed doors and explore the surrounding fields, factories, roads etc to witness the application of the information received in the classes. Teachers should help students to identify their weaknesses and strengths and try to convert these weaknesses to strengths. It is very important that both the teachers and the students are involved in the process of teaching and learning with an open mind. Both of these need to be good listeners to reap the

best of benefits from this process. A teacher needs to notice the non-verbal cues in his students and act accordingly.

There are other factors as well that require attention on the part of the authorities. Often the parents are sending their kids to far off premier schools and thus expose them not only to long commuting hours but security risks as well. Often the students are not able to get admission in their area and are forced to opt for far off schools. The government must step in and define the catchment area for each school. Apart from solving transportation and other security issues this step would contribute to strengthen this network of students and parents in a close proximity to share and pass on information effectively.

On the flipside government teachers also face many difficulties when they are expected to fulfil all the other administrative duties in the public sphere. This is done at the cost of sacrificing their primary responsibility of taking classes. This also needs to be addressed.

In a country like India where poor teacher-student ratio is a big issue, technology can be utilized to cater to the needs of the students. Through online courses students from different geographical locations can have access to world class education. The educational resources like electronic books, podcasts, digital libraries, educational games empower students. Learning through technology is easier and effective for the students as they are in complete command. This learning takes place on their pace as compared to a traditional classroom where the class runs at the pace of the teacher.

There are other societal and structural issues as well. Till date in India, teaching is not the profession that generally the best of students will aspire to join. It is still for those who are not able to join a dream profession of theirs and thus land up with teaching as a substitute. It is difficult to believe that these dissatisfied teachers will be able to motivate the students and fulfil the responsibilities of a teacher with a positive approach. We are in need of a reform wherein the society encourages its brightest of children to aspire to become teachers. Discipline and accountability is to be assured and good number of teachers teaches with dedication, i.e., by heart & mind. With the advent of these changes the respect for this profession and the teachers will definitely grow manifold and will reduce the wastage of time of students.

Even when we look at the higher education in India, though many newer Government and private institutes have come up but they lack in lot many areas and hence even the premier institutes of India like the IIT's and IISC are unable to find a place in the top 200 institutes of the world. One important reason for this is the very rigidity of the academic system in India in terms of teaching and evaluation. The present system works as a hindrance for the innovators.

Another lacuna is that the higher education in India targets to prepare students only for the service industry. Unless we are able to come up with a plan to prepare students for manufacturing industry, software developer, AI, entrepreneurship etc we will not be able to provide good employment opportunities to our youths. Hence there is an urgent need to start new programs with the help of well trained teachers equipped with good infrastructure.

Realization of the problem is almost half the battle won. Almost everybody agrees with the gaps existing in the present education system in India both at school and Higher education level. Now we should march ahead with well thought changes and start encouraging original thinking, clarity of concepts, creativity and innovation along with fixing responsibility of all stakeholders.

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CONTEMPORAY EDUCATION IN RETROSPECT

Dilip Sane

This article attempts to look at the Education in India and how has it been evolving and morphing since the ancient times; are we now going in the right direction? Or have we lost our orientation and have steered away from the right course? If it has lost its track, then what can be done to come back to the right course? What is expected of an excellent Education System and what are the objects that control it as well as those which depend on it?

The seed of this article was sown in my mind by a childhood friend who has been involved in online teaching of unprivileged children in a selfless manner. He is currently in core team of Gyan Vigyan Sarita. We together had education from middle school in technical stream till engineering graduation and therefore common experiences and memories of our humble background and remained family-connected, even now. It is also natural for such friends to compare schooling then and schooling now, discuss the pros and cons of the education systems and of parenting of respective eras, of later half of 20th century to the one we see now. It is common among many of our era to insist upon education based more on Learning rather than on teaching. In the process in-depth knowledge becomes more importance than merely having more marks with poor understanding of the subject. *We have found this philosophy hugely beneficial in our own profession and it has helped us to excel in one's respective field of specialty.*

Coming to the first which is when we began our childhood and naturally our schooling. Some of us belonged to a community which still retained some traditional values. At home we followed strict hygiene; grownups did insist on discipline though it was not harsh. Parents as well would keep an eye though to ensure that we do not waiver too much. Saying prayers and reciting a few ones in Sanskrit was a must. We were loved indeed but rarely pampered by parents. Grandparents are as usual a different breed altogether, during any era, and we are living it. We adhered to the Vedic rituals whenever appropriate.

Having correct and in depth knowledge of the subject was important and focus was given more to learning by heart all the fundamental principles of the things. Striving for this and being willing to sacrifice the comfort even for acquiring the education came as second nature. Electricity was not available to all. Kerosine lamps and Candles were common things. Multiplication tables from 2 to 20 had to be memorized completely without mistake. Stories from Mahabharat, Ramayan, Panchtantra, Aesop's Fables were told and listened to intently. These were the things which laid the moral fabric of our life and prepared most of us to have self-discipline and stand to our values even when tide was against us. We were encouraged to play outdoors as long as we kept aside a couple of hours in the morning and after the evening for studies. Costly games and sports activities were not available to us, but group and team games indeed were. Handball, football, cricket, hockey, gillee-danda, kabaddi, kho-kho, marbles, kite-flying, pitthu or satoliya, spinning lattus or tops, hide-and-seek, racing, chor-sipahi, climbing trees (which were then in abundance) and playing around them were our sports. These activities ensured overall fitness and agility. Indoor games mostly were limited to Carom, Ludo, Snake & Ladder, Antyaksharee, telling and listening to stories, etc. TVs or gadgets of any kind were unheard of.

Mostly the public schools were available to children right from poor families to middle class. Schools in general were reasonably alright and just met the requirement to impart knowledge meant to be imparted. Many a 6 year old had to walk anywhere between 1 to 4 kilometers from home to get to schools. Teachers in general were thorough and insisted on children having fundamental knowledge. Tests and exams also were designed to test the depth of the knowledge. Though, teachers also were financially poor yet they knew their subjects well. These schools rarely if ever focused on sports and other activities, their main goal was academic upliftment. Private tuitions were unheard of. Teachers did devote personal attention in class for the weaker students. Fathers usually did not interfere with education and studies. Their presence alone usually was sufficient to encourage the law and order of the home. Children were expected to come back home in time for evening prayers, a must. In all, in spite of the hardships of the time those were the golden days we still cherish. One thing though is certain and it is that most of us did well if we consider the resources then available to our parents and now with us during parenting. We managed well in whatever we had and never felt anytime like we were deprived someway or we lacked something. This may probably, solely, because of the moral values and upbringing on one hand and on the other hand to the behavior of parents and grandparents. They actually practiced what they preached; they loved us, cared for us without over indulgence and pampering. *We cannot help but wonder at the contrast between the education and schooling in cities those days and what we see now*. Sharing this context is considered essential for correlation by the contemporary young generation.

Let us now consider the **Ancient Indian Education System or simply the Vedic Education System.** Our ancient texts and even the history tell us clearly about its living practices. It is well known that it created near super-humans and as such it could be said to be the best system for the mankind and its survival in this World. It inherently evolved from the Vedas and Vedic Culture or वैदिक धर्म. It can be considered to be the best for not only the students and parents but also for the society and for the environment

as well. The reason being that Vedas dictated a total inclusive and harmonious coexistence of all beings and everything within the creation itself. This system was intimately connected with the Varna (वर्ण) based social structure (वर्ण व्यवस्था) of the time. It was thus based on the actual aptitude and qualities of the candidates. Each person went through the four stages in life referred as आश्रम व्यवस्था. These stages were age based and were known as ब्रह्मचर्य आश्रम or Brahmacharya (bachelor or celibacy, student age, upto 24 years of age), गृहस्थाश्रम Grihastha (householder, between age of 24–48), वानप्रस्थाश्रम Vanaprastha (retired, between age of 48–72) and सन्यासाश्रम Sannyasa (Wandering Ascetic Stage, renunciation. After the age of 72).

Old Texts (e.g. Tirukkural, a religious text written over 5000 years ago, by the Indian poet Kaalingar) reveal a complete in-depth **knowledge of good parenting**. In effect a sound advice was given on how to raise the children, about the psychological issues that children may have, how to recognize these issues, what are the causes of such problems, etc. These texts also offered suitable solutions to the parents. These solutions advised parents about how to adjust their own behavior and how to reconcile.

Let us summarize what the Vedic Education was and how it was practiced.

(a) Free and accessible to all (universal) and there was no distinction made in rich and poor. Sandipani Muni had his Ashram where Bhagavan Shri Krishna, a child from rich Yadav family, as well as Sudama, one from a poor Brahmin family both received education and were treated at par and were trained to develop a brotherly love.

Many Research findings have proven that belief systems, personality traits are formed and firmed between the age of 0 to 7 years. This in fact seems to have been utilized even in our Vedic System. Where the Holistic education started at home and children were taught via music, words, daily chores, interacting with people around them, books and nature which helped to enhance their creativity and empathetic nature.

(b) Education was a private affair of the people managed entirely by teachers coming from Brahmin families, Sages and such learned men.

(c) These teachers were highly learned and were revered in the Society and were more honored than the Kings and Rulers. Education was considered a religious activity and was thus treated honorably and with reverence.

(d) King and Ruler of the country had nothing to do with education directly, thus it remained good and pure as recommended by the वैदिक धर्म.

(e) Students/pupils (up to 24 years age) stayed in Gurukul गुरुकुल (the house of the teacher) away from the parents, maddening crowds and the Society. Gurukul or Ashram was the school thus. Ashrams were usually located in close proximity of vast Nature close to the river and such water bodies, mountains and forests and definitely away from the hectic activities of the society.

(f) An Ashram could have many teachers and masters to suit the profession. Teachers and students lived and behaved as part of a single family where teachers were the parents.

(g) Education was for education's sake, and not for examination or for getting a job. It was for a holistic, complete or total development of personality viz. intellectual, physical, moral and social. System focused on creating student with strong body, a powerful mind, and adapt in all kinds of physical and sport activities. It also gave them an in depth knowledge and skills based on the Varna of the student i.e. the qualities, aptitude and inclination. The main aim of this education was to prepare the pupils on the basis of respective duties for the suitable trade and livelihood in their real life. Physic al training was real life and included strenuous activities in the natural environment. Imparting a cooperative, coordinating, and supportive mind towards each other, towards the society and towards all that exists in Nature was of paramount importance. That is why nothing was ever done which would risk harming the Nature. Training of Mind was inherent as there was no written or printed matter. Knowledge was retained and recollected totally on memory. Knowledge of performing arts and music was also imparted which helped in relaxation as well.

(h) However, these teachers were usually poor and Ashram depended for livelihood and survival on the goodwill and charity of the people and alms. This was however offered with honor and never considered like extending alms.

(i) Education focused to develop a strong moral character in student. Self discipline, Self-reverence, self-knowledge and self-control and strict code of conduct were the qualities that had to be mastered by the students under the guidance of teachers. In depth knowledge of Vedic Dharm was standard and its extent and depth depended on the Varna of the student. Spiritual base necessitated training on yoga, meditation etc. Brahmins received complete and full in depth knowledge and were expected to become the teachers.

(k) Teachers were sole judge of the achievements of students.

(l) Girls were not educated publicly as boys but privately in their homes by parents, elders or husbands. They also received highly intellectual education of very high level as well. We all are aware of the names of Gargi, Maitreyi and other Lady scholars of the time.

(m) Education was focused on individuals and was not institutionalized. The teaching was mainly oral through debates and discussions which received due attention.

(n) Equal, if not more, emphasis was given on learning by the student and not merely on teaching. For his part a student has to learn and study using the methods of श्रवण (Attentive Listening), मनन (Thinking on the subject heard to consolidate it in the memory), निदिध्यासन (delve and probe deeper into the knowledge which you acquired with the help of contemplation and self-inquiry in order to examine, analyze and evaluate what you learned). Teachers gave stress on students indulging in स्वाध्याय or Self-study using above methods. Entire knowledge had to be retained in memory for ever and written documents were unheard of.

(o) Teaching was practically honorary. At the end of studentship some honorarium (Gurudakshina) could voluntarily be paid to the teacher either in cash or in kind.

This is the era during which great warriors, thinkers, musicians, performing masters, philosophers, scientists, architects and engineers, and saints etc. took birth and made great contributions to all fields in India.

One cannot help but wonder as to why such a good holistic and all inclusive education system was not readopted in spirit with necessary enhancements after the Nation got Independence? The Indian subcontinent in fact has a long history of education. It was home to several advanced civilizations.

In the centuries that followed after the Era of Lord Krishna, Mahabharat, and the Bhagwadgita a slow and steady rot seems to have set in which eroded this system. Finally it lost its intrinsic and inherent values during successive invasions sultanates of Turks, Moghals, Portugese and English. These invaders and their Rule accounts for a period of total of over 741 years and caused the real damage. British in particular were more interested in creating students to suit the functioning of their rule without really empowering the student in holistic manner.

In the 19th as well as in the 20th century there was a period when some communities and some families continued retaining some old traditional values and practices which gave us some renowned personalities. **Post Independence Education System** as we know is not all much good in the way the Vedic Education System was. In fact we know that it has failed to create any renowned Scholars, Inventors etc. on its own. In this 21st century now our education system is nothing but sort of a thought less spaghetti of the British system and others from developed nations and some left over concepts of our own. We have survived because of the inherent genetic intelligence and spirit which has been passed to us since ages. Our own students have excelled in developed Nations by migrating there due to better environment and opportunities found there.

The state of education in India in this 21st Century is not too bad but it is not much good either. Usually it seems that all our Schools and Institutions in the recent decades seem to have been looking up to the West and to the developed nations, idealizing and even adopting their practices and habits. Parents too join the bandwagon trying to emulate such new trends. Some of these are indeed useful and help keeping in pace with developments and advances in technology. Others are doubtful at best and sometimes not suitable for our culture, our philosophy and our social environment. Children also seem to be getting more and more burdened for the scores and far too less attention is given to in depth knowledge of the subject. In the process we have thoughtlessly lost the grip on our ancient gems of education system which were outlined in earlier paragraphs. Rest of the World on the other hand is now becoming aware of those gems and are gleaning our ancient text and sifting to those. They are now realizing and appreciating the value of our ancient language Sanskrit.

What is then the problem with present system of education? Unlike the Vedic System ours does not focus on identifying the inherent skills, aptitudes and abilities of the students. Instead it focuses on the curriculum and on how the marks can be maximized by the students.

Less or no focus is on sports and other outdoor activities as stress is on obtaining higher and higher marks. This has its negative impact of the overall development of students. The number of Indian Students who have some sort of psychiatric problem is at a shocking 12%. This situation is worsened as our system does not provide for counselors. That job is then left to teachers and parents mostly who have their hands full in these days of nuclear families. If the child is lucky the Grand parents may be available close at hand and to some extent may fulfill one void in student's life.

India spends about 6% percent of its GDP on providing education. There is a sort of sheep mentality for moving with the herd. This is seen in parents as well as in students when it comes to selecting the subject of studies or in selection of a school, college, or institute. This becomes evident when we see the statistics. The percentage of employable or employed from the total passed out in various streams is shocking. A mere 47% in engineering graduates, a whopping 93% of MBA pass out and 55% of from field of Medicine remain unemployed.

The Governments, State and Central, allow new Educational Institutes to come up without a proper check up on quality of infrastructure, of faculty etc and the results are poor quality of graduates in many fields. This has a cumulative effect again on the standards of education. Caste based reservation system again takes some toll from the education quality.

Children and teachers alike are turning towards the digital devices more and more for the knowledge and reference instead of empowering their own minds and making it the repository of the knowledge.

Is there any way in which any entity can be made everlasting, so to speak and that too in an environment which itself is changing and evolving rapidly with time? Western philosophy probably does not have a suitable answer to that. However, a pertinent answer may be found in our own Vedic philosophy which is so concisely and precisely summarized for us by Lord Shri Krishna through Shrimad Bhagwadgita provided one has a deep and clear understanding of it.

In Bhgwadgita they have given us a Life Style doctrine that recommends Harmonious Coexistence of humans with all the constituents in such a manner that each flourishes with the help from others around it. None cause destruction of the other (beings i.e. things that exist). All this is within an entity that is called the बृह्माण्ड् or Universe . It focuses on three main constituents within this Universe namely the Jeev or a Being (humans, animals, all other beings and things that exist), Samaj or Society (consists of families, community, Nation, and the world), and finally this Srushti सृष्टि or the Creation around us (i.e. the planet and all that it holds, five main elements viz. water, earth, sky, air and fire).

Applying this philosophy to any Education System should definitely necessitate those elements necessary to achieve its basic goal which is to educate the students. While doing so and in order to adhere to the Vedic philosophy outlined above should also have elements which will ensure that both the student as well as the system also should evolve and ensure that it (i) does not cause any damage to the three main entities (Beings, Society, Nature) (ii) also inculcates the values which ensures that the students learn to live in harmonious coexistence with other humans, society, other beings and all that exists on our planet etc (iii) makes the society it educates feel responsible and ready to make up for any loss, fair wear and tear, caused to the three elements.

Conclusion: *All our post independence education systems seem to have remained far away from achieving what could have been achieved. The wisdom and lessons of parenting, upbringing and of education in ancient India, is the finest example of the true treasure that our ancestors have left us with. It is high time that we come around and think of creating a system which will have the best of our Vedic legacy and modern system.*

Author graduated in Mech. Engineering from Jabalpur in 1972. After initial professional training he started his career as Marine Engineer in **Shipping Corporation of India Ltd (SCI), Mumbai,** as a Junior Marine Engineer in beginning of 1974. He completed necessary competency examinations to become Chief Engineer in 1983. He continued sailing through all the oceans and seas around the World, in all kinds of weather and climates, rough to very rough and fair until December 2010 reached. Despite being a sailor he remained all through a teetotaler and a happy family person. He is an avid reader and thinker.
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Science in general and Physics in particular are not a subject to learn, but an area of observation and exploration by correlation, integration and analysis of repetitive nature, and then conclusion.

It is a real thrill, full of fun.
But, it can't be done in dicrete manner, it has to be done patiently, like climbing stair far a faster and purposeful journey.
This is where role of education come in; it is to streamline the process.

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Nothing is more important in our national life
than the welfare of our children.

- Harry S. Truman (33rd President of the US)

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Quality Education – Concerns

Prof. G.L Asawa

Prevention is better than cure" is the universal truth. Unfortunately, in our country, this is not being followed for some of the issues which have now become causes of great concern. One such issue is the ever-increasing huge population (about 17% of the world's population with only about 4% of the world's water and about 2.5% of the land to support) which, obviously, is the result of the absence of proper population policy for the country which must have been in force soon after the independence.

This huge population is the root cause of poverty all around, malnourishment of the children, non-availability of essential items like nutritional food, drinking water, proper sanitation etc. all of which affect all aspects of one's life including education. Likewise, the reservation policy (which was to be in force only for few years after independence must not have been made permanent or almost eternal, as it appears to be) does not help in enhancing one's merit or performance. Both of these (i.e., the absence of a suitable population policy and continuance of reservation policy) have immensely affected adversely the performance in almost all sectors including the quality of education in our country at all levels from primary to post-graduate levels.

In order to cater to the huge number of children to be educated, we need large number of educational institutions with suitable infrastructure and large number of well-educated and well-trained faculties. Unfortunately, we have neither the good school/college infrastructure/environment nor properly educated and trained faculty for imparting education. Barring few elite institutions such as IIT's, AIIMS, Central Universities, Doon School, St. Xavier's Schools, St. Stephen's College etc., all our educational institutions lack proper buildings, classroom furniture, proper libraries, adequate sports facilities, properly qualified and trained faculty in adequate numbers.

The result is for all of us to see. None of our higher educational institutions (including elite institutions whose student intake is obviously, from the poorly-equipped schools and as per the reservation policy and the faculty selection too is as per the reservation policy) finds a place in the list of 50 top educational institutions of the world. This is so in spite of our country having the second largest population in the world and also being in top six economies of the world and aiming to be 5-trillion-economy in the next five years or so.

In spite of the growing economy, large majority of our population continues to remain poor and uneducated to support the education of their own children. Even if the malnourished children are made to attend school, the conditions back home do not permit them to devote all their time (as they have to share some of the responsibilities of their parents) for the studies and their personality development. Very often in many of the villages, the schools have no proper building and the students have to sit in open for their lessons in all kinds of weather. Number of teachers are usually not even as per the norms which themselves are less than desirable.

The teachers are selected as per the reservation policy and also the political interference. Therefore, the teacher is not equipped with adequate knowledge to impart good quality education to do justice to their duties. He is also unable to give proper attention to an individual child's requirements due to poor student-teacher ratio. As a result, there is large number of the non-performing (as per the set criteria) students. When non-performing students fail (as per the set criteria), the administrative issues crop up, and the school administration is taken to task. And, therefore, compromising on the set criteria of evaluating a student becomes the societal necessity and is so common these days. In future, during their higher studies or employment, one cannot expect good performance from such students whose foundation (in terms of learning) has been so weak. Many of these students, at the end of their education, will become eligible for the recruitment as teachers and will have to be inducted as faculty either due to the reservation criteria or because of the need to fill the vacancies etc. This would further harm the quality of education.

It is not uncommon to notice that the students at the secondary level are encouraged to attend coaching classes instead of the regular classes as the rank of the school concerned depends on the number of their students competing successfully in the competitions. The objective of all such coaching classes is not to make the students learn basic fundamentals of the subjects but to prepare them so that they may answer the questions of their examination papers and solve the numerical problems.

Barring few elite institutions, the conditions in the government-run higher institutions are similar to what is prevailing in the schools. The colleges do not have proper laboratories and no funds to pay for consumables. The colleges are inadequately staffed. In several colleges, the classes are not held and the teachers are busy in commercial activities and the students have to fend for themselves.

Our political environment too is primarily responsible in adversely affecting the quality of education. It is so common to notice political interference in the matter of selection as well as academic matters. There is lot of corruption in matters of selection and transfers of teachers and staff, and even day-to-day administration.

Private educational institutions (primary to post-graduate levels) have also mushroomed in the past 2-3 decades. But, most of them have invested only on infrastructure and not on faculty. Most of these private institutions have been built up for commercial gains besides gaining social reputation. For this reason, their aim is to have only good percentage of the passing students and rarely bother for the quality of education their students are imparted. The result is that we have huge number of qualified professionals who, however, are not employable.

The quality of education being imparted in our educational institutions has already worsened and needs immediate steps to prevent further worsening and, in fact, reverse the worsening process to improve the quality. But, this is not likely to happen only by addressing the educational institutions alone. All that affects the education will have to be simultaneously addressed. It must be emphasized that the learning - teaching process is not a stand-alone activity. It includes

(1) the learner who has to be reasonably competent and motivated to succeed for the desired level of learning. The student is the most important component in the process of learning – teaching.

(2) the teacher who should not only be properly educated and well-trained but should also be passionate about teaching.

(3) the learning environment not only at the school or institute level but also at the learner's home and in his society as well.

At the end, it is only the state which can help improve the quality of education at all levels by reversing all policies which have been impediments in delivering the good quality education. Involvement of private sector in the field of education requires strict monitoring by the Governmental agencies in order to maintain the desired standard of education.

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The moment I have realized God sitting in the temple of every human body, the moment I stand in reverence before every human being and see God in him – that moment I am free from bondage, everything that binds vanishes, and I am free.

- *Swami Vivekananda*

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Take care of your thoughts,

For they are formed and moulded by our thoughts.
Those whose minds are shaped by selfless thoughts,
Give joy when they speak or act.
Joy follows them like a shad,
that never leaves them.

- ***Gautama Buddha***

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EDUCATION FOR UNDER-PRIVILEDGED

Dr. Bandita Bagchi

I have been kindly invited to express my thoughts regarding the educational needs of deprived children for Gyan Vigyan Sarita readership. This is a vast topic which entails continuous process of learning. Educational needs cannot be defined within the limits of any term. Practically, there is no end to being educated and no one should consider himself educated enough. It is education that matters most. In this article I will keep elaborating on the phrase "education for unprivileged". Before I get into a larger discussion about all these, I would like to narrate a small story.

Once I was at the local vegetable vendor, who has employed few young boys as helping hands. They are apt using a smartphone, charging the customers on the card-machine, Paytm, and even delivering the veggies at our homes. And not to mention they are also well dressed in proper western-wear. One day I picked up a bunch of spinach and asked the boy (A) to give me one third (1/3rd) of the bundle. He was blank. So, I asked him, what happened, is there any problem? He replied: Madam, I did not understand what you asked for? Hence, I took the initiative to enlighten him about the basics of maths. He very intently listened to me and then went ahead to divide the bundle in three equal parts and handed me one part of the entire quantity. He was a quick learner I realised. After having dispensed me the right amount, he immediately retorted, that he has never been to school, so he doesn't know. I said, no harm in it, you leant it today. Idea is one should learn at each and every walk of life. He was happy that I made him comfortable and there was no need to be embarrassed. Soon he was busy doing his job.

According to Confucius – "If you plan for one-year plant rice, if you plan for ten years, plant a tree, and if you plan for hundred years educate children"

Here in the above narrative one may consider the boy is like a rice plant, he has learnt short-term stuff to help him earn a livelihood in an urban setting. Maybe he is an un-privileged child because he has not got formal education and proper schooling. Possibly, because he comes from an economically weaker section of the society. Now, if I consider his condition to a boy of similar age who has come from the village and does not have an understanding of traffic signals, does not know what is a card and hence cannot afford to earn a livelihood (B) as the first case (A). Now I would consider B as even more un-privileged than A. Let us consider another instance where a professionally qualified person is unable to make to the top. Shouldn't he be considered as an un/under-privileged person? So, I consider privilege is a relative term. Here in this instance, I did educate the boy out of the classroom and he also being an intelligent person learnt the lesson.

According to the Microsoft founder Bill Gates: "It is fine to celebrate success, but it is more important to heed the lessons of failure."

Herein the boy did pay attention to the failure of not being able to comprehend the order, hence, he was very quick in learning the solution to the error. It is very important that people develop willingness to obtain education. This is a major challenge here in India. Even today, millions of children go without any access to education. Several crores of children in India continue to remain out of school, as cited in the above instance. It's a huge social problem plaguing modern-day India all across urban and rural set-up. Strong measures are needed to ensure the benefits of education touch everyone.

The underprivileged community does not have access to quality education and hence people should come up with a social responsibility to target the disadvantaged community. We should aim to solve this inequality in education by providing quality education to distressed kids. Even though such thought is welcome nowadays, practically it is difficult to achieve. There are two main causes to it, **a)** the rising population of poor or under-privileged, and resulting mindset, wherein, **b)** every person born is considered as an addition to the manual labour. People fail to realise that the person can grow into a skilled worker when the resources are available, and the higher the population lessor will be the resource. Hence, the goal of universal elementary education is a long way from being achieved. Statistics have shown that children of uneducated mothers are more prone to problems like malnutrition and anaemia. Illiterate adults are also less likely to send their children to school, for the reasons mentioned above. Education is, in all probability, the most influential tool required to break the vicious inter-generational cycle of abuse, malnutrition, poverty and oppression. Even though education would mean to develop the capacity to think, be rational etc. however the first step towards it is to achieve literacy.

India is a country that is still struggling with the problem of illiteracy. The literacy rate in the country stands at 74.04% (according to the National Census, 2011). When it comes to children, the effects of illiteracy are manifold. In addition to this, about 35% children in India with disabilities remain out of Elementary school (District Information System for Education – DISE,

2011-12) and the National Dropout Rate at the Elementary Level is over 40% (DISE, 2011-12).Literacy thus requires a lot of attention.

What can we do?

Create Awareness: We need create awareness and be responsible citizens of the country, we need to be sensitised towards the harms of child labour and refrain from hiring children for work which will, in turn, discourage parents and children to choose money over education. The need of the hour is to make communities aware of their rights and proud of child's education. Educated communities will not just create better citizens but also ensure better employment and enterprise

Education Across Gender: When it comes to education, girls lag behind boys significantly. This situation arises due to the patriarchal mindset of a lot of families in India. Girls are often viewed as future housewives and family caretakers. They are often deprived higher education and, in some cases even school education. Being educated gives an equal opportunity to women to be skilled workers, who use their learning as a boon that will help better the future of their families and communities. Educated girls also help end unfair social evils like child marriage and dowry and improve maternal health.

Bolster the Existing System: Indian government has several programs to eradicate illiteracy, yet lots more needs to be done. Here comes the individual and collective social responsibility to educate the under-privileged. In 2015, the NGOs touched the lives of over 1 lakh children in the city of New Delhi via the Childhood Care and Development programme which was involved in street children rehabilitation, child labour rescue, and maternal and new-born care. In 2016, Save the Children brought almost 90,000 children into the fold of education. It marked a new beginning in the lives of these children. In Bengaluru, they have been advocating implementation of Right to Education for the street children with various school authorities and also help in building up capacities of 26 Anganwadi centres and 60 primary schools that children. In Kolkata and Mumbai, they operate Mobile Learning Centres where dropouts, child labourers, slum children and street children come and are mainstreamed into education.

Affordable Education: Working towards affordable and easily available basic education is another aspect that we can cover to ensure social development. We need to come up with projects which will provide international level education to the underprivileged children. Through such projects, we can help children acquire skills for better living, as they grow up bringing positive changes in their lives, families and communities and thus alleviate themselves from the clutches of vicious cycle of poverty. This will ensure absorption of people into the mainstream.Working in alignment with several ongoing schemes will be instrumental in ensuring prosperity for all.

In any given scenario around us, education is a powerful tool which empowers communities to turn around their lives. According to Bill Gates "Discrimination has lot of layers that make it tough for minorities to get a leg up." If any member of a family is educated, especially women, it can help coming generations to break the inter-generational cycles of poverty. Education is a great enabler – it makes people skilled and equips them to engage in meaningful professions and thus contribute to their own and society's socio-economic well-being. In order to achieve that we need equal opportunities for all.

Author is an academician, neuroscience-researcher and mentor with sole interest in nurturing curiosity, identifying talent and channelizing the pupil into right direction. Professionally, have represented my country at several occasions in India and abroad. On a personal level have known life from a rural to urban set-up and hence believe in compassion, and try to remain humane under all conditions.

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Education is not filling of a pail, but lighting of a fire.

- William Buttler Yates

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शिक्षा का बाजारीकरण : एक भयावह सत्य

प्रमोद दिवाकर पाठक

आज के समय में शिक्षा का जिस प्रकार से बाजारीकरण हो चला है, यह स्थिति वास्तव में देश में विस्फोटक रूप ले सकती है। इस चिंता की अभिव्यक्ति इस लेख में निहित है।

शिक्षा की हर योजना का केंद्र बिंदु केवल और केवल छात्र ही होना चाहिए, किन्तु आज तो शिक्षा बाजारवाद और पूँजीवाद की ओर बढ़ रही है। गरीब विद्यार्थी उच्च शिक्षा से वंचित हो गया है। आधारभूत मूल्यों पर आधारित शिक्षा का महत्व घट गया है, दर असल शिक्षा की सम्पूर्णता ही समाप्त हो गयी है। हम मानवीय मूल्यों से दूर होते जा रहे हैं।

मेरे विचार में विद्यार्थियों को साहित्य , नैतिकता, समाज विज्ञान तथा मानवीयता की शिक्षा केवल स्कूल में ही नहीं अपितु चिकित्सा, तकनीकी और अन्य व्यवसायिक शिक्षा प्राप्त कर रहे विद्यार्थियों को भी आवश्यक है। इससे समाज में बेईमानी व भ्रष्टाचार जैसी समस्याओं के प्रति जागरूकता आयेगी।

हम वस्त्र, कला और संगीत जैसे अनेक क्षेत्रों में पश्चिमी देशों की आँख मीचकर नक़ल करते हैं , किन्तु अनुशासन , स्वच्छता, समय की पाबन्दी व् देश के संसाधनों की रक्षा करना जैसी अनेक अच्छी बातों का अनुसरण क्यों नहीं करते ?

मेरे विचार में हमें हमारी स्कूली शिक्षा का माध्यम अपनी मातृभाषा अथवा राष्ट्रभाषा में प्रोत्साहित करना चाहिये। यह बच्चों को शिक्षा को अच्छे तरह से आत्मसात करने में सहायक होगा, साथ ही वे हमारी संस्कृति से भी जुड़ते जायेंगे।

यदि हम अभी -अभी के उदहारण लें तो हमारे इसरो के चेयरमैन श्री पी . शिवन, चंद्रयान-२ के मुख्य वैज्ञानिक श्रीमती ऋतू करिधल व श्री स्वामी अन्नादुरई तथा हमारे अत्यंत प्रिय मिसाइल-मेन व् पूर्ण राष्ट्रपति स्व. डॉ. ए. पी. जे. अब्दुल कलाम ये सारे महानुभाव अत्यंत कमजोर आर्थिक परिस्थिति से आये, और इन्होंने अपनी स्कूली शिक्षा अपनी मातृभाषा में ही पूर्ण की। इसके बावजूद इन्होंने विश्व पटल पर अपनी ही नहीं अपितु अपने देश का गौरव स्थापित किया।

शिक्षा के क्षेत्र में सामाजिक कार्य करने वाले समस्त महानुभावों से मैं अनुरोध करता हूँ की आर्थिक स्थिति से कमजोर बच्चे जो क्षेत्रीय भाषाओँ में शासकीय अथवा अशासकीय शालाओं में पढ़ते हैं तथा जिनके पास बड़े -बड़े स्कूलों व कोचिंग की फीस के पैसे नहीं हैं , उन पर विशेष ध्यान दें। आने वाले समय में हो सकता है कि देश को उन्हीं में से कोई नया मिसाईल मेन प्राप्त हो।

लेखक, ग्लोरियस हेल्थ केयर प्राइवेट लिमिटेड के डायरेक्टर हैं। सामजिक कार्यों में उनकी रूचि है। वे महाराष्ट्र के शिक्षण मंडल जबलपुर में सचिव पद पर अपनी सेवाएं दे रहे हैं ।

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They are only saints or prophets who can keep forgiving evils.

Anyone who supports and/or camoulfleges inactions or evils of others, on pretext of divinity or any other excuse is an accomplice in the evil. Such persons are against cause of the larger good and are opposed to the passionately committed selfless mission.

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There are two educations.
One should teach us how to make a living,
and the other how to live.

- John Adams

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शिक्षा के व्यवसायीकरण से निर्मित शिक्षा की दुकानें

संकलन - चित्रांगद उपाध्याय

शिक्षा एक अति महत्वपूर्ण निवेश और मानव संसाधन विकास में एक अनिवार्य तत्व है। प्रत्येक अर्थव्यवस्था में इसे हमेशा से सम्मानजनक स्थान दिया गया है। इसका अभिप्राय है लोगों की पढ़ने-लिखने और समझने की क्षमता। इसका मूलभूत पहलू ज्ञान, विवेक और संस्कृति है। यह व्यक्ति की अंतर्निहित क्षमता और योग्यताओं को निखारने में सहायता करती है। सुपरिभाषित शिक्षा प्रणाली आर्थिक विकास, सामाजिक परिवर्तन और आधुनिकीकरण और देश की अखंडता की कुंजी है। यह अर्थव्यवस्था के विभिन्न वर्गों के लिए जनशक्ति विकसित करती और यह ऐसा आधार है जिस पर नवपरिवर्तन, अनुसंधान और विकास पुष्पित और पल्लवित होते हैं। इस प्रकार से शिक्षा राष्ट्रीय और अंतर्राष्ट्रीय स्तरों पर सामाजिक, राजनैतिक और आर्थिक लक्ष्य हासिल करने में देश की सहायता करती है। यह स्वच्छता, जनसांख्यिकीय-रूपरेखा, उत्पादकता और जीवन की गुणवत्ता में सुधार को प्रभावित करती है।

स्वतंत्रता से भारत सरकार के लिए निरक्षरता का उन्मूलन एक मुख्य राष्ट्रीय चिंता का विषय है। भारत के संविधान के तहत, आरंभ में शिक्षा राज्य का विषय था, अर्थात यह राज्य की विशिष्ट जिम्मेदारी थी। परन्तु 1976 के 42वें संशोधन अधिनियम ने इसे राज्य सूची से समवर्ती सूची में रख दिया है। इस कदम ने केंद्रीय और राज्य दोनों सरकारों को समवर्ती सूची में रख दिया है अतः यह दोनों सरकारों को समवर्ती रूप से क्षेत्राधिकार देता है। जबकि शिक्षा में राज्यों की भूमिका और जिम्मेदारी मोटे तौर पर अपरिवर्तित रही हैं। हालांकि, केंद्रीय सरकार ने शिक्षा की राष्ट्रीय और एकीकृत विशेषता के प्रवर्तन, सभी क्षेत्रों के लिए गुणवत्ता और स्तर बनाए रखने की बड़ी जिम्मेदारी ली है, जिसमें शिक्षण, व्यवसाय तथा शिक्षा की अपेक्षाओं की देश में निगरानी और अध्ययन शामिल है। दूसरे शब्दों में इसका लक्ष्य सभी स्तरों के शिक्षा पिरामिड में सक्षम जनशक्ति आधार का विकास करने, अनुसंधान और विकसित अध्ययन की पूर्ति तथा शिक्षा के अंतर्राष्ट्रीय पहलुओं में उत्कृष्टता का संवर्धन करना था। आज के भारत में जन-जन तक शिक्षा को पहुंचाना एक महत्वपूर्ण मुद्दा है। जहाँ एक तरफ राज्यों द्वारा संचालित सरकारी स्कूल हैं, जिनमें गरीबों के बच्चे ही पढ़ने के लिए आते हैं, वहीँ दूसरी तरफ प्राइवेट स्कूल हैं जिनके शिक्षा के व्यवसायीकरण व निजीकरण के चलते शिक्षा न सिर्फ महंगी हुई है बल्कि एक धंधा बन चुकी है।

शिक्षा का व्यवसायीकरण: भारत की जनसंख्या 130 करोड़ पार कर गई हैं. इतनी बड़ी आबादी के लिए शिक्षा की समुचित व्यवस्था करना सिर्फ सरकार के भरोसे संभव नहीं है। इस समस्या को निपटाने हेतु सरकार ने निजी क्षेत्रों की भागीदारी भी इस क्षेत्र में सुनिश्चित की है। इस प्रकार शिक्षा के निजीकरण का अर्थ है : शिक्षा के क्षेत्र में सरकार के अतिरिक्त गैर सरकारी भागीदारी . वैसे तो ब्रिटिश काल से ही निजी संस्थाएं शिक्षण कार्य में संलग्न थी किन्तु स्वतंत्रता प्राप्ति के बाद निजीकरण को बढ़ावा देने के लिए अनुदान एवं सरकारी सहायता के फलस्वरूप भारत में निजी शिक्षण संस्थाओं की बाढ़ सी आ गई है। स्थिति अब ऐसी हो चुकी है कि इस पर अंकुश लगाने की आवश्यकता महसूस की जाने लगी है क्योकि अधिकतर निजी शिक्षण संस्थाएं धन कमाने का केंद्र बनती जा रही हैं, एवं इनके द्वारा छात्रों एवं अभिभावकों का शोषण हो रहा है। शिक्षा के निजीकरण के यदि कुछ गलत परिणाम सामने आए हैं. तो इससे लाभ भी निश्चित तौर पर हुआ है।

भारत में शिक्षा का निजीकरण : शिक्षा के निजीकरण के कारण तेजी से शिक्षा का प्रचार हो रहा है। जिन लोगों को प्रतियोगी परीक्षाओं में असफल रहने के कारण किसी व्यावसायिक या अन्य पाठ्यक्रम में प्रवेश नहीं मिल पाता , वे अधिक धन खर्च करके मनोवांछित शिक्षा प्राप्त कर सकते हैं। इस तरह शिक्षा के निजीकरण के कारण देश का धन सकारात्मक कार्यों में लग रहा है। नई शिक्षण संस्थानों की स्थापना के कारण नवयुवकों को रोजगार के नए अवसर उपलब्ध हो रहे हैं। शिक्षण से सम्बन्धित व्यवसायों को भी गति मिल रही है। निजी शिक्षण संस्थाओं में प्रतिभावान छात्रों को ही अवसर मिलता है। पिछले कुछ वर्षों में उच्च शिक्षा प्राप्त करने वाले लोगों की संख्या में तेजी से वृद्धि हुई है।

शिक्षा निजीकरण के लाभ: इतनी अधिक संख्या में प्रति वर्ष सरकारी नौकरियों का स्रजन कर पाना संभव नहीं है। निजी संस्थाओं की अधिकता के कारण इन लोगों को भी रोजगार के अवसर उपलब्ध हो रहे हैं। इस तरह शिक्षा के व्यावसायीकरण / निजीकरण के कारण देश के आर्थिक विकास को गति मिल रही है। यही नहीं शिक्षा के क्षेत्र में निजी भागीदारी से उत्पन्न प्रतिस्पर्धा के फलस्वरूप शिक्षा की गुणवत्ता में भी सुधार हो रहा है। निजी शिक्षण संस्थानों में योग्य शिक्षको को बेहतर वेतनमान पर भर्ती किये जाने से शिक्षकों की दशा में सुधार के साथ-साथ शिक्षित लोगों के लिए रोजगार के अधिक अवसर उपलब्ध हो रहे हैं। इस तरह शिक्षित लोगों के जरिये रोजगार के साधन उपलब्ध कराने एवं शिक्षा की गुणवत्ता में सुधार हेतु शिक्षा में निजीकरण को बढ़ावा देना उचित है।

निजीकरण के नुकसान : शिक्षा के निजीकरण के कारण कोचिंग एवं ट्यूशन संस्कृति को बढ़ावा मिला है। बड़े-बड़े उद्योगपति भी शिक्षा में धन का निवेश कर रहे हैं। शिक्षा में धन के निवेश को अच्छा कहा जा सकता है किन्तु उनका उद्देश्य शिक्षा का विकास नहीं बल्कि धन कमाना होता है, जिसके कारण कई अन्य समस्याएं उत्पन्न हो जाती हैं। उद्योगपति धन का निवेश करने के बाद धन कमाना चाहते हैं। इसके लिए वे शिक्षकों एवं अभिभावकों का शोषण करते हैं . शिक्षा के व्यावसायीकरण से भारत में निजी शिक्षण संस्थाओं की बाढ़ सी आ गई है किन्तु लाखों की संख्या में मौजूद इन निजी शिक्षण संस्थाओं में से नब्बे प्रतिशत संस्थान या तो शिक्षण की गुणवत्ता पैमाने पर खरे नहीं उतरते या फिर उनके पास पर्याप्त मात्रा में शैक्षिक संसाधन नहीं हैं। इन सबके अतिरिक्त निजीकरण के कारण फर्जी शिक्षण संस्थानों की संख्या भी निरंतर बढ़ती जा रही है, जो चिंता का विषय है।

शिक्षा के व्यावसायीकरण के प्रभाव : इस तरह निजी क्षेत्र में प्रबंधन की अक्षमता एवं मनमानी के कारण न तो शिक्षा के उद्देश्यों की प्राप्ति हो पा रही है और न ही गुणवत्ता के पैमाने पर ये खरे उतर पा रहे हैं . इसके साथ ही निजी क्षेत्र के शैक्षिक संस्थानों द्वारा शोषण एवं गलत मार्गदर्शन के कारण लाखों छात्रों का भविष्य अंधकारमय हो रहा है। यही कारण है कि शिक्षा के निजीकरण के औचित्य पर सवाल उठाए जा रहे हैं। पहले धनी व्यक्तियों द्वारा शिक्षण संस्थाओं की स्थापना सामाजिक सहयोग एवं उत्तरदायित्व निभाने के लिए की जाती थी। अब इसका उद्देश्य सामाजिक सहयोग न होकर धनार्जन हो गया है। इसलिए शिक्षा के निजीकरण से जो लाभ होना चाहिए, वह समुचित मात्रा में समाज को प्राप्त नहीं हो रहा है। यदि शिक्षा के निजीकरण में

मुनाफाखोरी की प्रवृत्ति पर रोक लगाई जाए एवं शिक्षकों की सेवा शर्तों का संरक्षण सरकार द्वारा हो , तो शिक्षा के निजीक रण के लाभ वास्तविक रूप में मिल पाएंगे।

शिक्षा की अनिवार्यता के दृष्टिकोण से इसके सार्वभौमीकरण की बात की जा रही है। इस कार्य में निजी सहभागिता अनिवार्य है , इसलिए शिक्षा के उद्देश्य का निजीकरण तो अनिवार्य है , किन्तु इसमें इस बात का पूरा ध्यान रखा जाना चाहिए कि शिक्षा के उद्देश्य बाधित न होने पाएं। आजादी के बाद भी हम अपने देशी बच्चों को शिक्षा के द्वारा विदेशी ही बना रहे हैं और उन्हें व्यक्तित्व निर्माण के मानवीय -नैसर्गिक मूल्यों से दूर भी कर रहे हैं। आज की शिक्षा का यही लक्ष्य रह गया है।

देश में उच्च शिक्षा का अलग मंत्रालय है, साथ ही राज्यों में भी ऐसा ही है। लेकिन ठेका यूजीसी (यूनिवर्सिटी ग्राण्ट कमीषन) को दे रखा है। इसमें भारतीय संस्कृति के विकास के प्रति कटिबद्ध ऐसे लोगों की संख्या बहुत कम है जो उच्च शिक्षा के माध्यम से देश में शिक्षित वर्ग को पैदा कर सकते हैं। व्यक्ति आज जितना अधिक शिक्षित होता है , वह समाज के काम आने के स्थान पर स्वयं के लिए जीने लग जाता है। वह समाज के लिए विदेशी हो जाता है। हम एक ओर जातिवाद को समाज का नासूर मानते हैं, वहीं इस व्यवस्था ने शिक्षित वर्ग की अपनी जातियां और पंचायतें खड़ी करवा दी हैं। चिकित्सक, वकील, सीए, अधिकारी, हर वर्ग की राष्ट्रीय संगठनात्मक कार्यशैली , जातियों की तरह ही कार्य कर रही हैं।

इससे भी बड़ा नुकसान उच्च शिक्षा को शैक्षणिक आधार देने के बजाए गुणवत्ता को विस्मृत करके बाजारवाद की तरह चलाना है। स्नातक तो ऐसे निकल रहे हैं - हर साल जैसे कारखानों से टीवी -फ्रीज निकल रहे हैं। सब के सब एक जैसे। ज्ञान में 'अंगूठा छाप भी इसी गति से बढ़ रहे हैं। आगे पढ़ने वालों के शोधग्रन्थ कोई पढ़ता है क्या दस प्रतिशत भी पढ़ने लायक नहीं मिलेंगे। यूरोप -अमरीका में शोध करने वालों को बरसों लग जाते हैं। यहां आप किसी से धन देकर लिखवा सकते हैं। वायवा भी हो जाता है। डिग्री भी मिल जाती हैं।

शिक्षा में राजनीति का आना और स्वार्थपूर्ति के आगे देश को अंधेरे में धकलते जाने का एक प्रमुख कारण बन गया है। यूजीसी के नियम कायदों की भी धज्जियां इसीलिए उड़ती रहती हैं , जिसको चाहो पर्ची भेजकर कुलपति बनवा दो , प्रोफेसर बनवा दो। परिणाम देने की न बाध्यता है, न प्रतिबद्धता। इसी का परिणाम है कि हमारे प्रोफेसर शिक्षा जगत् में भी देश के बाहर अपनी पहचान नहीं बना पाते। कितने विदेशी लोग हमारे शोध ग्रन्थों का हवाला देते है ? अपने पेपर्स में हमारे पास बजट होते हैं , गुणवत्ता नहीं होती। कोई हमारे विश्वविद्यालयों की विभागीय संगोष्ठियों का स्वरूप नजदीक जाकर देखे तो सब कुछ स्पष्ट हो जाएगा। इने -गिने चहेतों के बूते यह आयोजन शिक्षा के चेहरे की पुताई के लिए काफी है। देश एवं समाज के प्रति कहीं लेशमा त्र दर्द दिखाई नहीं देगा। जिस तरह के पेपर पढ़े जाते हैं , उनका संकलन पढ़ने से स्पष्ट हो जाएगा।

एक ओर यह चर्चा सुन रहे हैं कि यूजीसी के स्थान पर नई व्यवस्था तैयार की जा रही है। दूसरी ओर यूजीसी के नए फैसले भी दूरदृष्टि विहीन दिखाई पड़ते हैं। अब नया निर्णय आया है कि एक स्नातक (चार वर्षीय कोर्स करके) सीधा पीएचडी कर सकता है। तब शोधग्रन्थ कैसा होगा जो आज एक निबन्ध अच्छा नहीं लिख पा रहा , उसे पीएचडी देकर समकक्ष सरकारी नौकरी में लगाना विकास को कैसी गति देगा ? कौन फिर स्नातकोत्तर (एम ए जैसी) पढ़ाई करना चाहेगा? डिग्री के लिए शोध लिखवाना, पास करवाना, कितना बड़ा कारखाना बन जाएगा ? आज तो 75 प्रतिशत हाजिरी के झूठे प्रमाण -पत्र ही बहुत बड़ा व्यापार हैं। ऐसे लोगों को नौकरी मिले तो क्या यह यूजीसी का अपमान नहीं।

महत्वपूर्ण प्रश्न यह है कि - क्या डिग्रियां बांटना महत्वपूर्ण है ? आंकड़ों का संग्रह जनता को दिखाना महत्वपूर्ण है? जिस शिक्षा में गुरू का कोई दायित्व नहीं रह गया उसके पढ़ाये छात्र - छात्राएं दर-दर की ठोकरें खाएं एवं प्रोफेसर दो लाख का वेतन पाए तब क्या यह देश शर्मसार नहीं होना चाहिए? आज शिक्षा और मिड-डे-मिल की सोच में अंतर ही क्या रह गया है ? अच्छे नागरिक पैदा करना शिक्षा विभाग का उद्देश्य नहीं रह गया है। शिक्षित व्यक्ति देश के काम आता है या नहीं , यह शिक्षा नीति का अंग ही नहीं है। हम तो जो हैं , उसी के सहारे विश्व गुरू बन जाने के सपने देखते हैं। आज तक हमारा कोई भी संस्कृत या वैदिक संस्थान हमारे शास्त्रों के ज्ञान को विज्ञान की भाषा नहीं दे पाया। हम पाश्चात्य वैज्ञानिकों के प्रश्नों के उत्तर आज भी देने की स्थिति में नहीं हैं। तब क्योंकर संस्कृत सेवा के लिए प्रोफेसरों का सम्मान किया जाता है, यह सम्मान उन विदेशियों को जाना चाहिए जो अ पनी शोध से हमारा मान बढ़ाते हैं।

आज उच्च शिक्षा ही हमारे ज्ञान का सबसे बड़ा अपमान बन रही है। व्यावसायिक शिक्षा का इससे कोई संबंध नहीं है। आवश्यक यह है कि जीवन और प्रकृति का स्वरूप, सामंजस्य और दायित्वबोध ही इस शिक्षा का लक्ष्य हो। आज जैसे -जैसे हम उच्च शिक्षा में आगे बढ़ते हैं , हम पर दुधारी तलवार की मार पड़ती है। एक, देश-धरती से हम दूर हो जाते हैं। अकेले अपने पेट के लिए जीने लगते हैं। हमारा व्यक्तित्व अपूर्ण होता चला जाता है। आत्म -ज्ञान शून्य होता जाता है। या तो हम मानवता का निर्माण करें या शिक्षा के कारखाने ब न्द कर दें। आज विदेशी सामान हमारे यहां बनने लगा -भारतीय हो गया। वैसे ही विदेशी शिक्षा भी भारतीय कहलाने लग गई।

संकलन-कर्ता, कार्यकारी-निदेशक, महाराजा कॉलेज उज्जैन हैं । एम.एससी. (भौतिकी) एम.एड (स्वर्ण पदक विजेता), पीएच.डी. (शिक्षा) के पश्चात भारतीय शिक्षा प्रणाली पर कई पुस्तकों के विकास में राष्ट्रीय शैक्षणिक अनुसंधान और प्रशिक्षण परिषद (एनसीईआरटी) में महत्वपूर्ण भूमिका निभाई है। इन्हे एन.सी.ई.आर.टी से प्रतिष्ठित राष्ट्रीय अभिनव पुरस्कार नवाचार पर मिला था। इन्हे बिहार राज्य के लिए प्रमुख साधन व्यक्ति के रूप में प्रतिनिधित्व करने के लिए एनसीईआरटी द्वारा भी चुना गया। डॉ उपाध्याय ने छात्रिय स्कूल प्रसारण कार्यक्रम के सलाहकार के रूप में "आकाशवाणी" के साथ काम किया और छात्रों के लिए AIR पर कई शैक्षणिक कार्यक्रम प्रसारित किये। ई –मेल: chitrangad@yahoo.com

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ADVANTAGES OF NEW EDUCATION POLICY 2019

Prof. Neha Tripathi

Education is a national agenda and is the catalytic tool that can transform the future of our children and youth. Approximately half of India's 1.2 billion people are under the age of 26, and by 2020, it is forecast to be the youngest country in the world, with a median age of 29. To reap the benefits of this demographics, a new National Education Policy has been proposed to meet the changing dynamics of the population's requirement with regards to quality education, innovation and research, aiming to make India a knowledge superpower by equipping its students with the necessary skills and knowledge and to eliminate the shortage of manpower in science, technology, academics and industry.

New education policy seeks to junk 10+2 format 'high-stakes' exams. The policy recommends replacing the current 10+2 format with 5+3+3+4 structure. Replacing the 10+2 system, replacing high-stakes class10 and 12 exams with subject wise 'modular' assessments anytime between 9and 12, census exams for class 3, 5, and 8, to track progress throughout the school experience and deregulating higher education to allow students to opt for courses, exit them midway and resume them at fully autonomous public and private institute, these are some of the key recommendations of new education policy.

The key to the policy is an overarching emphasis on a 'liberalised' and flexible education system which allows for mobility as well as exposure to the liberal arts. The policy document recommended by a nine-member committee headed by eminent scientist, Dr. Kasturirangan - calls for restructuring of both, higher education and school education regulatory regimes and assessment/examination systems. The policy recommends replacing the 10+2 format with a 5+3+3+4 structure. This implies five years of a 'foundational stage' that will include three years of preparatory and classes 1 and 2. It will be followed by three years of pre-primary stage, three years of middle school and four years of secondary stage. this suggests board exams in 5th and 8th. Each year of secondary stage will be divided in two semesters, each semester having five to six subjects.

To encounter the "harmful effects of board and entrance exams" in the higher classes, the panel recommends restructuring them to a 'modular' format, allowing students to take the board exam in each subject at the end of semester in which they take the subject.

This proposed new pattern, i.e. 5+3+3+4 format of schooling, which includes having board exams in class 8th, has certain advantages.

(1) Psychological aspect:

a) Up to this stage (13-14 yrs), the children are somewhat grown up, and exposing them to the experience of board exams will make them prepared to handle the board exams in higher classes.

b) The students who will score poor marks will become serious by themselves, and correct themselves. As this is the beginning part of their teenage, they can understand good and bad much better, and it is easier to mould oneself at the younger stage. On the other hand, when students continue with wrong habits and practices of studying up to class 10th, it is difficult for themselves as well as teachers to correct them.

(2) Educational Aspect:

a) In present scenario, i.e. the existing 10+2 scheme, the students have to study all subjects with all their components up to tenth - i.e. Science (physics, chemistry, biology), Social Science (History, civics, geography) and Maths (Algebra, geometry, trigonometry) in detail, whether they are interested in that subject or not. In this process, most of the students feel overburdened with the subject in which they are not interested and do not plan to make a carrier in that field. Sometimes they even lose interest in their own subject, in which they plan to make a carrier.

b) Another aspect in existing scheme is that, the course content of class 9th and 10th demands a huge number of well qualified and specialized teachers in all these core subjects, keeping the huge number of schools in view. But, because of this huge demand, the teachers available and recruited mostly are not specialized in the subjects taught, and subjects are taught by under specialized teachers, resulting in degraded quality of teaching. This is another important reason for students losing interest.

c) The other important issue is, the time available to build up the basics of the subject in which the student plans to make a carrier. If the student chooses his subject in class XI, as is done in the existing 10+2 format, he has only two years to prepare for his subject of interest. Plus, by this time, the pressure for carrier building is so much imposed on him that he feels sand witched between school studies and preparation for competitive exams. Also the course content is quite vast. This is too much on the part of the student to study with concepts and interests, plus the additional pressure of cracking the national entrance exams such as JEE, etc. in school time itself.

d) In the proposed, New Education Policy 2019, with four years of secondary stage i.e. 9th 10th, 11th and 12th,

the student will have to study all the subjects only up to class VIII, and the course content will be simpler. Thus the student gets introduced to basics of all subjects, but is not overburdened up to class 8th. From class 9th class onwards the student will have the opportunity to opt for subjects of his choice, without any compulsion and pressure of competitive exams. Also, because of various streams available from 9th class onwards, the number of specialized teachers required in each stream will be lesser, and we can have specialized teachers for each stream. This will improve the quality of teaching in secondary classes and the students will have better clarity. The chosen subjects will be studied with interest by the students, and will result in better understanding of concepts. In later stages, i.e. 11th and 12th, the student gets adjusted, prepared and matured enough to focus on preparations for the competitive exams. This will help in reducing the unnecessary burden and pressure mounted on the students for carrier making.

In a nutshell, we can say that the New Education Policy 2019, not only aims to rebuild the young India, preparing the youth to be skilled, confident and self dependent, but also supports the young generation mentally by keeping it away from unnecessary burden and pressure of studies and carrier.

Author is Ph.D.from I.I.T. Delh' 2008. During research, filed a patent and got awarded for Two journal papers for top cited article 2005-10, in Elsevier. Did M.E.(Communication Systems)'1995 and BE (E&T)'91 from GEC, Jabalpur. She has been a meritorious student all through. Presently working as Professor, Department of Elec. and Commn. in Government Engineering College, Ujjain, (M.P.).

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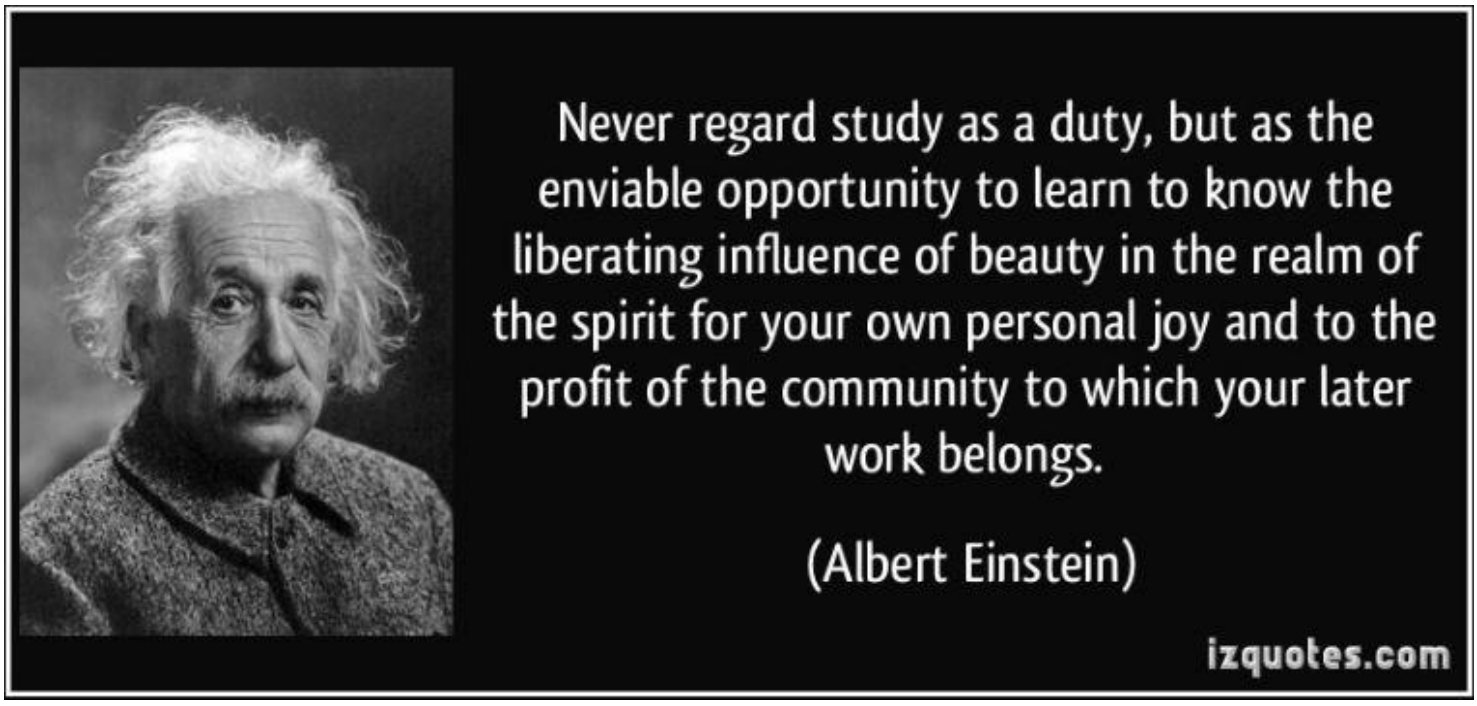

Obstacles do not block the path, they are the path

- Anonymous

वरिष्ठ से वरिष्ठता का प्रयास

विनोद प्रकाश गुप्ता

नॉएडा सेक्टर 50 में हमने 2008 से शुरू कर दिया था बच्चों को पढ़ना जीविका के लिए तो हम सभी प्रयास करते हैं किंतु मनुष्य जीवन का उद्देश्य मात्र इतना ही नहीं, क्योंकि सभी प्राणी जानवर सहित ये कार्य करते रहते हैं। हमें मानव जीवन कई हज़ार योनियों के बाद मिला है ताकि हम दूसरों के हित में भी कुछ कार्य कर सकें ।

भारतीय योग संस्था दिल्ली और देश भर में निशुल्क योग कक्षाएँ चलाता है। उसी के सानिध्य से मैंने 2004 में सेवा निवृत्ति के बाद योगाभ्यास करना प्रारम्भ किया था और मैंने पूर्ण निष्ठा से उसे सीखा और एक वर्ष के बाद मैं योग शिक्षक बन गया और जीवन में बहार आ गयी।

ईश्वरीय प्रेरणा प्राप्त कर झुग्गी झोपड़ी में रहने वाले बच्चों को पढ़ाने हेतु वर्ष 2008 में कक्षा खोली, जो 11 वर्ष से चालू है। जिसमें क़रीब १५० बच्चे पढ़ रहे हैं इसमें नर्सरी से लेकर 12 वीं तक के छात्र हैं । सरकारी स्कूल से लेकर अन्य स्कूल के बच्चे इसमें पढ़ते हैं। इनमे से कुछ को नौकरी मिल गयी है और कुछ आगे की प्रफ़ेशनल स्टडी कर रहे हैं ।कुछ सिवल सर्विसेज़ और कुछ डिफ़ेन्स की तैयारी कर रहें हैं । बात है बच्चों का उत्साह बढ़ाना और मार्ग दर्शन करना इसके लिए विभिन्न विभागों के प्रतिष्ठित व अनुभवी लोगों के सहयोग और मार्गदर्शन बच्चों को उपलब्ध कराने की ज़रूरत है। सौभाग्य से नॉएडा ऐसा शहर है जिसमें वर्तमान में सरकारी और ग़ैर सरकारी सेवा निवृत लोग रहते हैं जिनकी सुविधाएँ समय-समय पर प्राप्त की जाती हैं और बच्चों को उपलब्ध कराई जाती हैं । इस प्रयास को आगे बढ़ने में सनशाईन सोसाइटी की अहम् भूमिका है।

वरिष्ठ होना एक नैसर्गिक प्रक्रिया है , परन्तु वरिष्टता के लिए प्रयास करना आवश्यक है।

इस क्षेत्र की सफलता के किनारे पर खड़ा हूँ , आशा है एक दो वर्ष में सुखद परिणाम मिलना प्रारम्भ हो जायेंगे।

लेखक 74 वर्षीय उत्साही समाज प्रवर्तक हैं। वे स्टेट बैंक ऑफ़ इंडिया से जनरल मैनेजर के पद से सेवा निवृत्त होने के बाद उन्हीने सामाजिक सेवा के क्षेत्र मैं कदम रखा। सनशाईन सोसाइटी के सदस्य हैं। अपनी शालीनता, कर्मठता एवं सेवा भाव के कारण वे अत्यंत लोकप्रिय हैं।

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MIND POWER

D.V.S.Durga Prasad

"All power is within you. You can do everything and anything." This is a valuable quote given by Swami Vivekananda. This means that - there is an enormous energy reservoir in human. All of your actions are directly related to your mind. It is the mind that directs all the activities of your personality. The human mind has unlimited reserves of energy.

When we decide to do anything, the mind at once releases energy and we perform with the aid of this energy. The mind is the prime source of energy and whatever we do, can only be done with the help of this energy.

Man himself is the master of his destiny. It all depends on how much a person has unfolded his mind and how much energy the mind has released. You achieve greater or smaller successes in life depending on how much energy your mind releases. But the quantum of success depends on one's own planning. Wise planning makes one an achiever and unwise planning makes one lag behind in life.

Try to utilize your mind and you will certainly achieve anything you want to in life. This is because the mind is a very powerful tool and within it, the mind contains amazing potential and great energy that can work wonders if only you give it room to express itself in the right direction.

Author is aa dedicated teacher of English at R.K.Mission School, Sitanagaram, A.P. He is coordinator for Interactive Online Mentoring Sessions (IOMS) being held at the school. In addition to teaching, he is passionate about grooming children as good human being.

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शिक्षक की सामाजिक भूमिका

अजीत मुरुमकर

हम सभी जानते है कि बच्चे किसी भी देश का भविष्य होते है, और इस भविष्य का निर्माण करने वाला अध्यापक है ।अतः देश के भविष्य का निर्माता वही अध्यापक है।

अध्यापक सामाजिक व्यवस्था द्वारा दिया गया ऐसा उपहार है जो हमेशा बिना किसी स्वार्थ के और भेदभाव रहित व्यवहार से बच्चों को सही गलत और अच्छे बुरे का ज्ञान कराता है। प्रत्येक समाज मे अध्यापक की भूमिका महत्वपूर्ण होती है क्योंकि समाज उन्ही बच्चों से मिलकर बनता है जिनको अध्यापक एक लम्बी प्रक्रिया के दौरान परिपक्व बनाकर समाज मे श्रेष्ठ इंसान बनाने की जिम्मेदारी अध्यापक लेता है । एक अध्यापक ही बच्चों को अपनी ज्ञान रूपी गंगा में स्नान करा कर अच्छा नागरिक बनाने की दिशा में प्रयास करता है। इतिहास इस बात का साक्षी है कि सफल व्यक्तित्व के पीछे गुरु का महान हाथ होना अनिवार्य है ।

शिक्षक की भूमिका विद्यार्थी जीवन मे बहुत महत्वपूर्ण है। इसी बात को समझते हुए अध्यापक के कुछ उत्तरदायित्व है जिन्हें निभाना उनकी एक आवश्यक जिम्मेदारी है। उदाहरणार्थ, बच्चों का हृदय बहुत कोमल और नाजुक होता है । शिक्षण के दौरान सबसे पहले उनका ध्यान शिक्षक के व्यवहार पर जाता है । सबसे पहले विद्यार्थियों का ध्यान इस बात पर जाता है कि शिक्षक के हाव भाव किस प्रकार के होते है । शिक्षक के बोलने का लहज़ा भी विद्यार्थियों को प्रभावित करता है। शिक्षक की भाषा-प्रयोग अपने आप मे बच्चों पर अमिट छाप छोड़ने वाला होता है । शिक्षक का पद अपने आप मे महत्वपूर्ण तो है ही, इसके साथ-साथ चुनौती पूर्ण और कठिन भी है, परंतु किसी भी स्थिति में असम्भव कदापि नही है ।

एक श्रेष्ठ शिक्षक बनने के लिए मेरे विचार से कुछ आवश्यक शर्तें होनी चाहिए जैसे - संयम, सदाचार, विवेक, सहनशीलता, सृजनशीलता, शुद्ध उच्चारण, शोध वृत्ति, प्रभावशाली वक्ता एवं सुंदर लेखन आदि अनेक ऐसी बाते है जो किसी भी शिक्षक को अच्छा शिक्षक बना सकती है । देखा जाए तो बच्चे संसार रूपी बगिया के फूल है जो अपनी सुगंध से पूरे वातावरण को सब कुछ सुगंधित कर डालते है । यह गुण, अध्ययन के दौरान , विद्यार्थियों को अपने योग्य शिक्षकों से प्राप्त होता है। ।और शिक्षक गण उस माली के समान है जो अपनी देख रेख में पौधे लगा कर उनका सर्वांगीण विकास की दिशा में कार्य करते है । अतः शिक्षकों को ऐसा पथ प्रदर्शक बनकर रहना होगा जो केवल किताबी ज्ञान ही न दे बल्कि इन बच्चों को जीवन जीने की कला सीखा दे और अपने आप मे हमेशा के लिए समाज का एक उदाहरण बन जाये ।

लेखक अंग्रेजी एवं वाणिज्य के शिक्षक है। साथ ही वे ग्वालियर में Star Kids Public School के संस्थापक हैं. अध्यापन के अलावा वे संगीत कला पठान-पठान उनकी रूचि है ।

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Rare are the persons ready to accept challenge; mostly people evade it on pretext of lack of Time.

Those claiming lack of time allow it slip off their grip like sand foget that Time is a perishable irrecoverable resource,.

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My best guide, my well wisher, my best friend, my best anchor

Is my TEACHER

—00—

CLASS ROOM SKILLS – A NECESSITY

Smt. Jaya Samdekar

A skill is a specific behaviour of activity which requires doing a particular work or job or task. The performance of the concern activity is automatically improved through its learning and practice.The skills have been identified, isolated, collected and classified from the source like research studies, class room interactions analysis, theories of teaching and observations & experiences of investigation.

Class room skills provide an insight to a teacher to be able to takedecisions about teaching and teaching activities. It helps in prediction of consequences of teaching and may change the flow of activities in the class room.

Essential requirements for a teacher in the class room are as under -

- Control over attention & interest.
- Transfer to learning.
- Helpful to solve discipline problem.
- Helpful in development of mental activity.
- Clarify the subject matter.
- Provide effective motivation
- Experiences on teaching interaction
- Experiences on communicative expression
- Effective class room management skills
- Good communication with the parents of high expectations
- Knowledge of curriculum standards
- Knowledge of subject matter

These requirements can be fulfilled with a set of skills called **Soft Skills** in a teacher so that he/she can focus the overall learning environment in the class room at all levels These skills are -

a. Problem solving Skills– A students at a learning stage sees teacher as a role model. Thus students look upon their teacher very optimistically to solve their problems which can be academic and some type non-academic, yet affecting their academic pursuit. A teacher possessing problem solving skill is seen by students as savior and highly respected.

b. Decision making Skills– Class room is a stand-alone environment in which teacher is the master and all students are his followers. In this environment, where more than two persons involved, issues are bound to come up. Occurrence of issues increases with size of the class. Thus at every moment during a class teacher is called upon to take decision to varied issues occurring every other moment

c. Creativity Skills - Successful teachers are creative in many ways. They can guide to the students to express their thoughts effectively through creative pictures as per need.

d. Communicative Skills - This is required to convey one own feelings and. In is one of the best way to sharing the thoughts from one to another. When one starts communicate the other side becomes active and anxious to listen. This starts the process of understanding across the persons being communicated. Understanding creates a mental partner and it increases the size of group of sharing the thought as communication goes forward.

e. Collaboration Skills - Collaboration is one of the best skills in classroom. Teacher and students must collaborate with each other;it will accelerate the learning process without any misunderstanding.

f. Likeable Personality- This is one of important skills in classroom that makes a teacher acceptable to students. This trait of personality makes a person worth communicating on first sight. In absence of this a major part of effort goes in creating a n environment where children are receptive to the teacher.

g. Self Discipline - A biggest and importance skills of classroom of the 21^{s1} century is the self discipline equally for both, teacher and students. A person conscious of self-discipline is aware,punctual and consistent to all, in the surrounding.

h. Organizational Skills: Class room is a unit of a school and it has to work within the framework of school. Despite sovereignty of each school its academic requirement are regulated by state or central educational board. Thus, dynamics of class room is free to function as long as over laying academic requirement are being met. of school, Thus, for a teacher to continue to exercise his class room skills it is essential to make a conscious effort that it does appear to be stepping out of organization.

i. **Critical Thinking Skills:** Genesis of every action is in thoughts. Quality of thought depends upon how critically they have been analyzed, evaluated and concluded. Biologically all are equal and the only factor that discriminates two individuals is their thought process. In view of this critical thinking of a teacher deeply influences him/her in every activity.

j. **Leadership Skills:** A teacher is not only a master of his class by but a leader in the class room as much as a player in the team. He uses synergy of the class room to its upliftment in all dimensions viz. academic, intellectual, social, behavioral and humanitarian and any other quality that is expected of a responsible citizen.

k. **Patience Skills** Every problem has a cycle and takes its own pace to settle. Therefore, it is always not possible to expect instant solution to each and every problem. This is where patience becomes one of the most important skills. It must be followed teachers and as well as students to handle a situations with the positive source and energy.

Class room skill in a teacher evolve gradually, it is just not like wearing coat.Teachers can develop the classroom skills over time through best practice showed by other teachers, continuing education and classroom experiences.As a teacher you can help to develop somebody's subject knowledge and intelligence. But, development of thought process and personality of a class is much beyond teaching a subject. Teaching skills in classroom is an incredibly rewarding things and worth practicing.Good teachers are needed everywherein any schools, college, colleges and institutions. Classroom skills are to educate the younger ones as well as at the work place in corporate world before betting to teach adults and colleagues.

Technology provides better solution to increase effectiveness and depth of penetration in a modern society. Identifying the most important classroom skills in this environment is a matter of in-depth consideration. It is a matter of confidence in one's ability to handle emotions with objectivity in a disciplined manner. Finally, the phrase 'best method of teaching by example' cannot be ruled out.

Conclusions: *As we move ahead in 21st century, an era of competition with coexistence, efficiency with human sensitivity, increasing demand with scarcity of resources students are citizens of tomorrow not only of country but will have access and capability to impact on global scale. It is therefore extremely important for we teacher to think, analyze, develop and evolve skills that will make their students better citizens in times ahead. An effort has been made in this article to share some thoughts culminated out of experience of about Two decades in teaching. It is believed that we as community of teachers would focus on class room skills alongwith academic skills to be able to meet out the expectations that society has from us.*

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We are about to sacrifice our civilization for the opportunity of a very small number of people to continue to make enormous amount of money...

But it is the sufferings of the many which pay for the luxuries if the few...

You say that you love your children above everything else. And yet you are stealing their future.

- Greta Thumnberg

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वन नेशन ...अप टू ट्वेल्व वन एजुकेशन

निरंजन धुलेकर

मैं छात्र था , फिर अभिवावक हुआ और उसी दौर से गुजरा जिसमें से भारत का हर बच्चा और माता पिता गुजरते हैं ।

आज एक भूत पूर्व छात्र और अभिभावक की नज़र से पूरे परिदृश्य को देखने का प्रयास किया और किया सच का सामना ।

हम और आप सभी अपने बच्चो को बेहतरीन शिक्षा देना चाहते हैं , नेता और राजनीतिज्ञ भी भाषणों में ख़ूब शिक्षा देते ही नही बल्कि सुनहरे वादे भी करते हैं ।

दिक्कत क्या है ?

कक्षा एक से बारहवी तक किसी भी विषय के , बेसिक्स ही पढ़ाये जाते हैं जो कभी बदलते नहीं , बदलते तो हैं बस पुस्तको के कवर और उनकी क़ीमतें ।

आज की स्तिथि यह है कि हर स्कूल अलग , पुस्तके अलग इसलिए पाठ भी अलग , इसलिए लूट भी अलग लेकिन .. ख़ूब ।

हर स्कूल कहता है हम अच्छा पढ़ाते हैं , हम से पढ़िए हम दुनियादारी भी सिखाते हैं ।

प्राइवेट स्कूलों में अपनी लिखी पुस्तक कोर्स में लगवाने के लिए लेखक महोदय टूटे पड़े सो अलग इसलिए जोड़तोड़ , धन्धापानी कि दुकान अलग , डोनेशन भी अलग , ड्रेस भी अलग ।

ले दे कर पूरा शिक्षा माया जाल .. सरस्वती के ऊपर लक्ष्मी जी विराजमान क्या और कैसे हो निदान ?

यह भृमजाल तोड़ना हो तो कुछ ऐसा अलग से करना ही पड़ेगा जो आज तक नही किया गया ।

पूरे भारत मे सभी सरकारी और निजी स्कूलों में इंटरमीडिएट तक यदि केंद्रीय विद्यालय का पाठ्यक्रम , पुस्तकें और टाइम टेबल लागू कर दिया जाए तो सभी को फायदा होगा ।

कम से कम शुरू करने के लिए सभी सरकारी विद्यालयों में ये लागू करने में तो कोई भी दिक्कत नहीं होनी चाहिए ।

देश मे कहीं चले जाइये एक निश्चित दिन वही पाठ पढ़ाया जा रहा होगा .. हर विद्यालय की हर कक्षा में ।

कोचिंग ऐसा नासूर बन गया है जो विद्यालयों के शिक्षकों की विद्या और शिक्षण सम्प्रेषण पर ही प्रश्नचिन्ह लगा देता है ।

कोचिंग में भी एक एक क्लास में चालीस पचास बच्चे ही पढ़ते हैं । वहाँ भी क्लास ही लगती है पर रकम भी मोटी उगाही जाती है ।

बच्चे जो स्कूल में न पढ़ या समझ सके वो वहाँ सीखने की उम्मीद करते हैं और अभिभावक अपने कर्तव्य पूरा कर के संतुष्टि महसूस करते हैं ।

पर बच्चे स्कूल में पढ़ते क्यूँ नहीं , वहाँ उन्हें वो सब क्यूँ नही मिलता जो निजी कोचिंग में मिलता है ।

क्या शिक्षक द्वारा क्लास में दिए जाने वाले शिक्षण की क्वालिटी का , मिलने वाली तन्ख्वाह से सीधा संबंध है ? अधिक पे मिलने पर वो अधिक ज्ञान देगा, क्या सोच ये भी हो सकती है ?

मुझे याद है कि ख़ास तौर पर नौवीं से बारहवीं तक स्कूलों में बच्चों को ट्यूशन उसी शिक्षक के यहाँ जाने को प्रेरित किया जाता था जो क्लास में गणित , बायो , फिजिक्स या केमिस्ट्री पढ़ाते थे .. ये एक पत्थर से दो शिकार जैसा था !

एक तरफ मात्र वही ज्ञान मिलता था जो परीक्षा में प्रश्न बन कर खड़ा हो जाता , दूसरा प्रैक्टिकल परीक्षा में भी कृपा दृष्टि प्राप्त हो जाती थी । आंतरिक परीक्षाओं में यही अलिखित नियम आज भी लागू हो सकता है ।

जो मेधावी छात्र होते है उनकी स्वतः पाठ को पूरा करने होम वर्क को रोज़ ख़त्म करने की प्रवृत्ति होती ही है परंतु , बाकी और अधिकतर बच्चे ऐसा नही करते ।

स्कूल जाना और ट्यूशन जाना उनके दिनचर्या का एक हिस्सा होते हैं जो उन्हें करना ही है ।

परीक्षा में दस में से दो या तीन सवाल ही टेढ़े या कठिन होते थे जो प्रथम या द्वितीय श्रेणी में बच्चो को बाँट देने के लिए तैयार किये जाते थे .. और आज भी यही मोड्यूल काम करता है ।

कुछ ही बच्चे मूलतः बुद्धिमान ,सजग और पढ़ाई को लेकर संजीदा होते हैं इन्हें पढ़ाई करने के लिए कहना नहीं पड़ता ।

ये स्वयं कोर्स सिलेबस पूरा करने में जुट जाते हैं और अच्छा खासा समय घर पर पढ़ाई में भी देते हैं ।

परंतु स्कूलों का उद्देश्य तो उस बच्चे को प्रथम श्रेणी के लिए तैयार करना है जो ... क्लास में सबसे कमजोर हो ।

शिक्षक के प्रशिक्षण की पूरी परीक्षा इसी छात्र को मेधावी बनाने में होनी चाहिए ,परंतु ऐसा होते मैंने तो कभी देखा नहीं । कक्षा का सर्वप्रिय बच्चा वो जो सबसे तेज़ हो पढ़ाई में शिक्षकों का भी यही दुलारा ।

आपने देखा होगा ...सबसे तेज़ बच्चा कक्षा में सबसे आगे बैठता है और कक्षा के अन्तिम छोर पर वो बच्चा बैठता है , जिसे पाठ , सबसे अधिक साफ सुनने और स्पष्ट देखने की आवश्यकता है ।

यही बच्चा शिक्षक का सबसे प्रिय छात्र होना चाहिए पर ऐसा होता क्यूँ नहीं ?

आज तक जितने भी टॉपर्स बच्चो के इंटरव्यू सुने सभी ने यही कहा कि उनका अपना टाइम टेबल था , कमिटमेंट था कि उन्हें ये कोर्स अपने बूते पर पूरा करना है ।

यानी शैक्षिक सफलता का मूलमंत्र स्वाध्याय ही गुंजा ।

क्या कक्षा आठ से आगे हम चिकित्सा , कानून , एकाउंटेंसी , इंजीनियरिंग , वास्तु शास्त्र , होटल मैनेजमेंट , जैसे अनेक भावी स्पेशलाइज़ कोर्सेस के बेसिक पाठ छात्रों को ऑप्शनल में पढ़ा सकते हैं , आने वाले चार सालों में वो कितना कुछ बेसिक्स जान सीख जाएगा , बहुत समझदार हो गए हैं छात्र अब ।

ये नया भारत है बेहद वाइब्रेंट और जाग्रत ! अब शिक्षा के क्षेत्र में भी वो पुराने कोर्सेस और ढर्रे काम आने वाले नहीँ ।

कोई भी नया विचार आते ही उस पर पक्ष और विपक्ष भी आ जाते हैं । विपक्ष मतलब जो भी पक्ष करे उसे हर हाल में बेहद बुरा कहने वाला ... यानी राजनीति शुरू ।

अनेक राजनीतिज्ञ अपने क्षेत्र की शिक्षा में बेहद दख़ल रखते हैं यानी इनके या तो स्कूल खुले हैं, मेडिकल या फिर इंजीनियरिंग कॉलेज ।

और इस सब के पीछे खड़ा है अनाप शनाप पैसों का व्यापार । हो भी क्यूँ न , जब पाँच करोड़ लगाए तो पचास तो वसूलेंगे ही ... बच्चो से ।

सभी सरकारी केंद्र और राज्य सरकारों के अधिकारियों के बच्चे अगर केंद्रीय विद्यालयों की तर्ज़ पर खोले गए इन विद्यालयों में पढ़ने लगें तो पढ़ाई , और स्कूलों का स्तर अपने आप अच्छा होगा ये उम्मीद ज़रूर की जा सकती है ।

केंद्रीय विद्यालयों को एक अच्छे स्तर के स्कूलों की श्रेणी में रखा जाता है .. सीट मिलती नहीं जल्दी । ताज्जुब होता है कि इस तरह के विद्यालयों की देश मे भरमार क्यूँ न की गई ?

प्राइवेट स्कूलों में भी यही पाठ्यक्रम , पुस्तकें एवं समय सारणी रखी जाती तो शायद शिक्षण में एकरूपता आती और अविभावकों और बच्चो को भारी दिक्कतों का सामना नहीं करना पड़ता ।

कहीं भी किसी भी शहर के किसी भी विद्यालय में जाइये निश्चित सप्ताह में किसी भी क्लास में , उसी पुस्तक से वही पाठ पढ़ाया जाता मिलता ।

आज देश का एक बहुत बड़ा तबक़ा स्थानांतरण पर एक शहर से दूसरे शहर में सपरिवार जाता है और हर बार बच्चो के दाखिले की दिक्कत सामने आ खड़ी होती है ।

सबसे ज़्यादा दिक्कत बच्चे को आती है , जिसके सामने फैल जाती हैं एकदम नयी किताबे कोर्स और पाठ । उसे एडजस्ट करने में ही दो महीने लग जाते हैं । ये समस्या भी दूर की जा सकती है ।

तो क्यों न बाकी सभी सरकारी विद्यालयों को इसी स्तर पर लाया जाए ..

यानी शिक्षकों को आवश्यक ट्रेनिंग , क्लास रूम्स को सुसज्जित करना , प्रयोगशालाओं को भी उसी स्तर का बनाने के साथ साथ ... हो जाये वन नेशन , वन क्लास , वन कोर्स , वन बुक , वन टाइम टेबल और वन यूनिफॉर्म भी ।

इतना होने पर अपने आप हो जाएगी .. वन नेशन , वन क्लास और .... वन फी !

जो निजी स्कूल इस व्यवस्था को अपनाना चाहें उन्हें सरकार की तरफ से प्रोत्साहन दिया जाए , आर्थिक मदद की जाए ।

एनसीआरटी को और अधिक सशक्त किया जाए , इसका विस्तार किया जाए और पुस्तको के कोर्स निर्धारण और उनकी आपूर्ति ससमय सुनिश्चित कर के हम शिक्षा को पूरे देश मे बेहद सस्ता और पारदर्शी भी बना सकते है ।

देश मे शिक्षा की एक ही एपेक्स बॉडी हो जिसके निदेशक मंडल को और अधिक कसा ज़िम्मेदार बनाया जाए ।

पुस्तक की पढ़ाई का क्षेत्रवार माध्यम (यानी भाषा) बदल सकता है पर पाठ होगा एक ही !

वन नेशन वन एजुकेशन एक ऐसा अस्त्र साबित हो सकता है जिससे निजी स्कूलों के महामाया जाल के किले को तोड़ने में आसानी होगी !

वक़्त लगेगा ज़रूर पर शिक्षण क्षेत्र में एकरूपता , नवोन्मुख और सस्ती विधाओं को लाने , मनमानी रोकने , लूट और भ्रष्टाचार को समाप्त करने वाला शैक्षिक हमला शुरू तो करना ही पड़ेगा ।

क्या बच्चो के बस्तों का बोझ कम नही किया जा सकता ? जो चेप्टर पढ़ाया जाना है उसी पाठ के चुने हुए पन्ने ज़ेरॉक्स कर के स्कूल की तरफ़ से बच्चो को क्लास में दिए जा सकते हैं जिसे वो घर ले जाकर रखता चले !

वो पूरी क़िताब क्यूँ ले जाए ? पुस्तको की क्या वाक़ई ज़रूरत है ? पुस्तके स्कूल में ही रखी रहने दी जा सकती हैं ।

क्लास में पढ़ाया और परीक्षा में पूछा भी उन्ही पन्नो में से ही जाए , बच्चे के कनसंट्रेटशन से पढ़ने में सहायक सिद्ध हो सकता है और घर पर अभिभावकों को भी बच्चो की मदद करने में आसानी ।

फिर भी यदि उचित समझा जाये तो बच्चो को स्कूल की तरफ से सालाना सस्ते भाड़े पर भी किताबें दी जा सकती हैं , जिनको वापस ले कर गर्मी की छुट्टियों में ठीक ठाक कर के अगले वर्ष पुनः उपयोग में लाया जा सके ।

देश के महान शिक्षाविदों ने भी निश्चित रूप से इस संबंध में विस्तृत चर्चा , विचार , विमर्श, चिंतन और मंथन अवश्य ही किया होगा ।

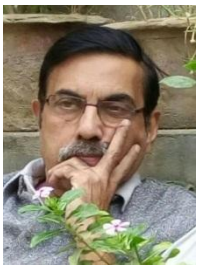
मुझे एहसास है कि विद्वानों के विचारों के आगे मैं शायद कहीं टिक न पाउँ क्यूंकि मैन पर एक बात महत्व की है कि जहाँ चाह वहाँ राह । अगर सब मिलकर ये सब करने पर आमादा हो जाएं तो क्या नही हो सकता ।

समस्याओं की लंबी फ़ेहरिस्त हो सकती है पर समस्या होती ही इसलिए है क्योंकि उसका समाधान भी होता ही है , आज नहीं तो कल ... या कुछ सालों बाद ।

तैयारी तो आज से ही शुरू करनी होगी । किसी एक राज्य में पायलट चला कर ही देख लिया जाय ।

ऐसा नही की कोई जानता नहीं ये सब , पर आवाज़ लगानी पड़ती है तभी सवेरा भी हुआ माना जाता है ।

आज मैं अपने विचार .. एक भूतपूर्व छात्र और अभिभावक की दृष्टि से रख रहा हूँ .. देखिये आप के किसी काम आ जाये तो !



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GROWING WITH CONCEPTS

Concepts of an expert are not like a static foundation of a huge structure; rather it is like blood flowing in a vibrant mind.

During growing into an expert, each one must have used best of the books available on subject and received guidance of best of the teachers. Authors might have had limitations to take every concept thread bare from first principle and so also must be the constraint of teacher while mentoring a class with a diversity of inquisitiveness and focus. As a result, there are instances when on a certain concept a discomfort remains. The only remedy is to live with the conceptual problem and continue to visualize it thread bare till it goes to bottom of heart and that is an ***ingenious illustration****.*

In this column an effort is being made to take one topic on Mathematics, Physics and Chemistry in each e-Bulletin and provide its illustration from First Principle. We invite all experts in these subjects to please mail us their ingenious illustrations and it would be our pleasure to include it in the column.

We hope this repository of ingenious illustrations, built over a period of time, would be helpful to ignite minds of children, particularly to aspiring unprivileged students, that we target in this initiative, and in general to all, as a free educational web resource.

This e-Bulletin covers – a) Mathematics, b) Physics , and c) Chemistry. This is just a beginning in this direction. These articles are not replacement of text books and reference books. These books provide a large number of solved examples, problems and objective questions, necessary to make the concepts intuitive, a journey of educational enlightenment.

Looking forward, these articles are being integrated into Mentors' Manual. After completion of series of such articles on Physics it is contemplated to come up representative problems from contemporary text books and Question papers from various competitive examinationsand a guide to theirsolutions in a structured manner, as a dynamic exercise to catalyse the conceptual thought process.

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Virtual Class Room: Part-I

Deepak Verma

Virtual class room (VCR), should not remain a buzzword and therefore in this article efforts have been made to present various question and technological environment involved in it. As the name suggests, is a class that has the students and teachers linked together on a network using the Internet or intranet etc, while physically being miles apart, interacting and studying in real time. Using Web-based interactive programs both the trainers and the learners interact in a "real" time environment.

What is a VCR?: **A virtual classroom is a software-based teaching and learning environment that mimics the qualities of face-to-face classroom instruction. Teachers and learners can participate in live online classes, communicate with each other, hold discussions and watch videos or presentations, among other features. Much like in a physical classroom or training session, a whiteboard serves as the organizing feature.**

VCR can connect learners and instructors from across the globe, making education and training vastly more accessible, as anyone can receive the benefit of high-quality instruction with little more than a device, an Internet connection, and a set of user credentials.

Costs can also be reduced dramatically, as there is no need for transportation. VCR can also save money on expenses related to staffing, production of books and other materials and the need to occupy physical classroom space.

VCRs are also quite flexible in terms of potential uses. They can be used to teach and tutor online, but also make great options for those seeking to host collaborative group projects or training exercises. These are frequently used for employee and partner training and webinar hosting. Businesses can stage conferences, host meetings or product launches and extend common office functions into the digital realm.

Typically find VCRs classrooms are embedded in an advanced learning management system. These systems are comprehensive online learning platforms used for educational and organizational training purposes.

Benefits of a VCR: **Virtual classrooms have become much more prominent in recent years, as interest in online learning has soared. By moving the classroom experience online, educators, students, trainers, and administrators can take advantage of numerous benefits that aren't present with the face to face instruction.**

Some of the most important uses of a VCR include:

- **Live On-demand Interactions:** The ability to schedule courses and meetings when it's convenient. Schedules are flexible, course times can be easily extended, and teachers or trainers can host online "office hours."
- **Learner-Centered Instruction:** Face-to-face instruction is a teacher-focused model where learners play a reactive role. VCRs offer a different model; one that's interactive, immersive, technology-driven and centered on the learner. When students or employees aren't merely passive observers, they can tap their innate creativity and engage with the learning process on a deeper level.
- **Option to Record, Review and Build an Archive:** If learners fall behind during face to face instruction, seeking help outside the class from a teacher, tutor fellow student or colleague is their only viable option. VCRs solve this problem, as recorded courses can be reviewed at will. Instructors, on the other hand, can review prior courses to see what works and what doesn't. This functionality helps improve learner performance while helping teachers refine their skills. The recording also allows for the creation of course archives that can be accessed anytime.
- **Targeted Teaching, Training, and Tutoring:** With face to face education, teachers by necessity must take a one size fits all approach to instruction. VCR allows for more targeted instruction. Breakout sessions can be formed to allow learners to progress at their own pace.
- **Fast and Accurate Evaluation:** Grading tests and papers is one of the most time-consuming — and tedious — tasks that teachers face. VCR helps to minimize that burden by offering automated evaluation. Teachers can use the time they save to focus on value-added activities. Trainers, meanwhile, can use VCR to generate more accurate insights about employee skill development.
- **Easy and Reliable Feedback Gathering:** In a physical classroom with 30 or 40 learners, it's difficult to gauge who is learning and who isn't progressing properly. VCR allow teachers, tutors, and trainers to gather feedback through the use of real-time polling, hand raising, and other interactive features.
- **Opportunities for Peer-to-Peer Learning:** The social and collaborative tools in a VCR allow students and employees to leverage the collective knowledge of their peers. Students and employees can also provide encouragement and positive reinforcement when needed.

Benefits such as these are a great illustration of the power of online learning — and the tremendous value a VCR provides in terms of delivering online instruction.

Not all VCR products are created equal. However, to fully maximize the benefits offered by online learning, it's imperative to choose a virtual classroom with the right mix of functionality, reliability, and price.

What to Look For in VCR?: Those seeking the most advanced virtual classroom software should consider a cloud-based solution that offers a full slate of comprehensive features. The right tool should possess powerful, cutting-edge functionality and seamless user experience. Key factors in VCR are as under -

- **Live video streaming:** Though it is considered the most obvious feature of any VCR software yet there are few considerations that should be kept in mind when selecting a platform, such as HD video conferencing, secure live streaming, multi-way audio-video communication, and low latency to ensure a great user experience. Not all virtual classroom software support HD streaming and multi-way communication. The most advanced software, like WizIQ offer HD (720p) and SD (640p) live streaming, depending upon the internet bandwidth of your audience. Also, it comes with unlimited audio and 5-way video streaming allowing you to create a collaborative learning experience.
- **Whiteboard:** As said earlier, a whiteboard is the most important organizing feature in a classroom, whether offline or online. It is possible to write, annotate, explain, brainstorm and collate ideas using a whiteboard. Therefore, when looking for a VCR platform, make sure the whiteboard software is already integrated and meets all your requirements. An advanced whiteboard will also have features intact to teach technical subjects like physics, electrical sciences, math, geography, chemistry, and others.
- **Live recording:** Most VCR, nowadays, offer liver recording feature but the flip side is that recording happens on your device. This means it will consume your internet bandwidth and the quality of the live streaming more likely goes for a toss. Advanced VCRs offer server-side recording capabilities, which does not interfere with the live lecture streaming and the end user experience. Rather the lecture is captured on the backend at the servers of your service provider and is available for viewing immediately after the class is over.
- **Collaboration and moderation tools:** Because it's a kind of distance learning, you need to ensure that your audience has all the means to reach teacher, collaborate with other students during the live lecture. It's of the utmost importance to opt for a tool that offers the maximum number of collaboration tools, such as email integration, public and private chats, transferrable audio-video and writing controls, etc.
- **Polls, Surveys, and Feedback Forms:** To ensure a collaborative learning experience and measure the understanding of learner(s), a virtual classroom should gives ample options to design interventions. Therefore feature like platform should support to conduct polls and surveys, ask questions and collect feedback.
- **Test and Assessment:** A comprehensive tool will gives an ability to conduct pre and post-class tests and assessments. Checking learner understanding is quite crucial to the success of an e-Learning initiatives. Therefore, look for a platform with a built-in test creation software.
- **Code editor:** Where teaching of programming languages is required a feature called prospective VCR tool is a must. It should facilitate shared development environment while supporting syntax highlighting, default error recognition and suggestion support.
- **Analytics:** How successful a lecture was? This is the result that is drawn from testing different permutations and combinations. So, look for a tool that gives insights into learner behavior and their engagement levels. A good tool is strong on e-Learning analytics and offers detailed information on student log in, log out times, attendance, session duration, etc.

Other key factors: When evaluating VCRs, it is vital to pay close attention to the other key features:

- **Fast and Intuitive Integration:** The most advanced VCRs allow one to teach or train online directly from your Web browser with the press of a few buttons. One can integrate the VCR with existing websites or learning platforms with no third-party plugins or downloads required.
- **Mobile Optimization:** In present era is life and work is heavily dependent on use of mobile devices, and therefore online learning solution should support that reality. Therefore, one must look for a VCR that is optimized for mobile learning and works equally well smartphones, tablets and other devices.
- **Tools for Deeper Engagement:** High-definition video, social functions, interactive whiteboards, text messaging and other core features are essential to the task of creating a deeper, richer and more engaging learning experience. This, in turn, creates better teaching and training outcomes.
- **Seamless administration:** The right VCR tool should allow for the easy scheduling and management of courses while offering automated reports that can offer a

window into student, employee and instructor performance.

- **Stability, Scalability, and Support:** The best VCRs use technologies such as server-side recording and high-definition video conferencing to ensure that the user experience is seamless. Support for the WebRTC standard which ensures that the virtual classroom can support multiple high-quality video streams. Scalability is also a key; as one grows in the environment, it obvious to expect that power of VCR is commensurate to the growth.

VCRs are an indispensable tool for today's educators and trainers, and the most effective way to harness the benefits of online learning for your purposes.

By choosing a tool with the right mix of functionality, intuitive design and scalability, you can help your students or employees learn and retain material more effectively, and generate a greater return on your online learning investment.

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Virtual Class Room: Part-II
(Technology and Software Systems)

Deepak Verma

Virtual Classroom (VCR) is one of the significant features of E-Three Learning Platform (software for online teaching/training) and has been brought out in Part-I of the article. VCR being a web-browser based tool is independent of any other user side software. There are almost no downloads for this tool and this makes the tool time efficient for the user. Professors or students can just browse the link and login to the virtual classroom, just like they walk-in to the traditional classroom. It is equipped with various useful tools to engage participants and make the learning experience similar to traditional classroom with additional benefits of technology thus it is right to say E-Three is the best software for online learning/training.

VCR is largely useful as people from diverse geographical locations can be part of the classroom. Thus it is right to say that VCR is an online meeting solution that helps people to interact with each other regardless of the geographical barriers. It is considered as an alternative to traditional, location-based classroom, as it saves on expenses of physical infrastructure.

Synchronous Learning: In this type of learning process, students and professors connect and interact with each other in real time. This is indeed a very significant process where students get answers to their queries & questions then and there. Interaction with professors and peers makes the learning process interesting and enriching for students.

Support for Live Audio-Video: Audio and video are both enhanced and lucrative features for better understanding in VCR. Various tools are available for text-based chat, verbal interaction through audio conferencing and sharing ones own video through web-camera. Professors can share the audio and video, thus establishing one-to-one relation with students. This builds confidence in students about the pedagogy methods and allows professors to communicate effectively with the students. Moreover, the students asking questions can share their videos with the fellow students.

Recording Class Lecture (Session Recording): The entire classroom session can be recorded in video format and stored in library for future reference. This feature is extremely useful, especially for absent students, who can review the recordings later and understand the concepts elaborated by the professors. Moreover, the students can also refer to the recordings for revision purpose, at their convenience.

White Board: White Board is a tool for drawing graphics or diagrams in VCR. It comes handy when professor wants to visually explain any abstract concept in subjects like mathematics and science. If any student has a query, which needs some graphical explanation and the professor does not have an apt graphic for it, then even a crude diagram can be extremely beneficial for emphasizing on the concepts.

Sharing of Learning Resources and/or Desktop Screen: The resource-sharing feature in VCR allows professors to share varied content in different formats with the students in real-time while delivering lectures on various course topics. This resource sharing feature supports sharing of various file formats - MS Word, MS Excel, PowerPoint Presentations, PDF files, flash presentations, flash videos etc. While teaching, the professors can exhibit all the operations from the desk, by sharing a particular application or the entire desktop. This resource-sharing feature is extremely useful for sharing various course materials like topic notes, subject diagrams or graphs, explanatory videos etc. With this type of supportive and

informative course material, learning becomes interesting and gives an interactive experience.

Classroom Control by Professors & Active Student Participation: In VCR when professors deliver lectures to the students while explaining or elaborating concepts, theories from a particular course topic, ideally one sided process of communication is followed, and students are not permitted to talk/ express themselves at the same time in order to avoid chaotic situations. Though, all the participants from the VCRs are connected through audio and/or video conference, the participation rights are controlled by the professors. During the lectures, in case the students come across a particular doubt or query, while the professors are explaining, the students can set their status to "raise hand" which indicates that the student has a question which needs to be addressed by the professor. However, only one student can ask question at a time, in order to avoid confusion as well as commotion and to maintain focus and clarity on queries asked. Since the professors have the control rights, they can respond to the question or else disable the status of "raise hand" and take the question at the end of the session.

Multi-Level Fallback Mechanism for Continuity of Class: VCR feature in E-Three Learning Platform is designed and developed with a comprehensive multi-level fallback mechanism. This helps to ensure continuity of the class in-spite of technical hindrances. VCR is a web-based tool, which is solely dependent on Internet connectivity. If in the remotest possibilities, participants get disconnected from VCR, then immediately a fallback mechanism is activated. With pre-configured Skype or similar accounts of all participants, a common Skype call is initiated to connect all participants to further carry on with the class. In case all the participants lose Internet connectivity then the successive portion of the class would be conducted through a telecon.

Live Tech Support: E-Three Learning Platform provides an option for institutes and corporate organizations to set up Live Technical Support for its users. TLT helps its clients to set-up the required technical infrastructure. With this feature, technical support representatives of the institutes or corporate organizations will be able to provide text based chat and live tech support to their users. As an option, institutes or corporates can buy the technical support service from TLT.

Author is M.Sc (Physics) and M.C.S. from DAV, Indore. Currently he is working as Technical Lead (Network Operations-Core Team) in MP State Electronic Development Corporation. Bhopal. He is involved in creating e-Learning environment in government schools in Madhya Pradesh.

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Compunication (Computer with Communication capability i.e. internet) has forged the world, fragmented into narrow boundaries into a global village. All that we need to do is connect the most deprived persons into through strings of education. Compunication provides the much needed solution in the form of Virtual Class Rooms.

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Nature is a beautiful integration of different entities. Mathematics and science only discover them.

Euler's Identity $0 = 1 + e^{j\pi}$ ***is an excellent example of integration. Each of the constituent was discovered independently, by different mathematicians, at different point of time.***

Yet they all complement each other.

Lest it not be there whole nature shall have to redicovered

TEACHING WITH TECHNOLOGY - ONLINE TEACHING

"Education is for Life, not for a Living"

Saraswathi Tenneti

Digital Classrooms, Virtual Classrooms and Online Teaching have become the most common buzz words in Educational Technology. The concept of Online Teaching which is gaining greater prominence comes with its own set of challenges. One of the predominant factors related to online teaching is the connectivity between the teacher and the taught. It also comes in as a handy tool for enhancing the learners capability. However, it is to be noted that there are a number of factors that have to be taken into consideration. This may not apply in one-to-one teaching but, so far as institutions and organisations are concerned, a certain amount of precaution and care is to be taken.

As a teacher of English Language, the first problem that was encountered was to create an ambience where interactivity could be ensured. The second problem relates to content material and the right use of audio-visual methods with proper feedback, sustained interest and progression in levels of efficiency. While it is true that the learner's interest can be captured through audio-visual methods, there is always a danger that some of the learners can tend to become passive recipients rather than active respondents. Moreover, the different levels of understanding of students can result in an imbalance of interactive sessions. This often results in a kind of one-way communication. It is therefore essential to take adequate care to ensure that the teaching platform caters to diverse kinds of activities. Monitoring the students and ensuring that all the students are participating in the varied activities becomes a crucial factor.

Assignments and feedback are equally important. Thus the content material should be designed in such a manner that it is not too cumbersome both for the teacher and the taught. The use of Power Point Presentations and Audio Clippings should be tailored to meet the needs of the learner. It is therefore essential that the assignments should be such that they are easily done and do not go over the head of the students. Creativity and ease of application to complete the assignments are crucial factors. The learner should be able to have easy access to resource material.

Another major factor that comes into the picture in online teaching is the proper use of technology. While the teacher may be fully conversant with technology and its features, the learner too should be provided the proper ambience to make full use of the teaching-learning resources. This involves a facilitator at the other end, that is in the classroom who is both technologically and academically proficient to enable the learner to grasp the fundamentals of being interactive. This is all the more important considering the fact that technology in the classroom may not always be fully functional, resulting in gaps and silences which can be a hurdle at both ends.

In some cases, there may be financial constraints and it is essential that the budgetary allocation is studied in detail and proper measures taken to ensure connectivity both technologically and academically. It is observed that the facilitator or the teacher at the other end plays a very crucial role in the classroom.

Since a decade, we have been experimenting a great deal to be able to reach out to the learners at different places. Our experience has shown that the learner has been provided with an opportunity to experience the importance of expressing himself or herself with greater confidence. Recorded classes can be made available to the learners who are unable to attend a particular session. It also provides a window to the institution to rope in experienced / retired faculty to share their knowledge / expertise with the learners. It can also help in cutting down the budget. It is thus a win-win situation where the senior faculty take it up as a kind of service which is not really very strenuous. This provides an opportunity for the teaching faculty to have some breathing space that enables them to supplement their own resources. The teacher in the classroom will thus be in a position to correlate diverse views and amalgamate the content to suit the needs of the students.

Online teaching facilitates the giving and taking of resources that are both local and international. The exposure that is provided through different faculty enables the learner and the teacher to expand his or her horizon and interact with a large cross-section of people belonging to different languages and different cultures. It also helps in the accumulation of a large amount of resource material which can be handled in different ways to produce different kinds of content material. In the long run, there is a huge repository or a treasure house of both knowledge and material which can be utilised in different ways. All said and done, online teaching can be both frustrating and challenging in the initial stages but satisfying and rewarding in the long run.

The author is an are experienced teachers at Rajamahendravaram, with more than four decades of teaching experience and are presently engaged in handling online classes for Soft Skills and Life Skills at Ramakrishna Mission and TKR Academy of Art, Culture and Communication.. She has been teaching and training students at the Ramakrishna Mission, Rajamahendravaram and taking classes at Vijayawada

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Digital Footprint In Education

Ashwini Rajurkar

Education has evolved over the centuries, from the ancient education system of "Gurukula" where students used to live with the teacher in same house to "Day boarding school" where student spend most of the time in school except vacation days to the approach of current schooling system where students spend only few hours in a class room teaching with physical presence of the teacher.

The new phenomenon, which has gained a lot of popularity over the last few years is "Online education". It is a remarkable approach which has changed the way education looked like.

Though there is no replacement of personal or face to face class room teaching but change is the basic rule of nature, and change towards good is what we call progress. With the changing world scenario, everything is moving towards digitalization. With internet reaching every corner of the world, things are moving towards an "online" approach, these days, almost everything is available online and it is no wonder that online teaching is gaining more popularity. Here are few reasons for the increased popularity of online education,

- Lack of availability of time with both students and teachers,
- Increasing distances and long travelling times,
- Increased traffic congestions causing waste of time for students
- Higher exposure to technology for students and teachers
- Ease of exchanging notes via online measures
- Availability of books online.

Teaching with blackboard days has moved towards online teaching. The use of internet has made a single teacher available to the whole world instead of being local. Students don't have to travel for hours to approach a teacher to gain knowledge. At the risk of sounding cliché, "Time is money" and online teaching saves a lot of time. One can sit at home and gain knowledge from a teacher who might be sitting in another continent. It is convenient, saves time, can be accessed from very remote areas and can use audio-visual aid. Online teaching has proved in recent years a big boon to both teachers and students. The major advantages over a traditional education approach are, new methods viz. pre-recorded videos and lectures become available. A student can decide to attend online sessions for topics he finds difficult. Surface writing tools like bamboo-pen simulate classroom teaching and use of animation has revolutionized online education. Right from simple things like solar system to complex science phenomenon can be understood very easily by students with the help of animation which simulates the reality in good way. The cost of online education is much cheaper once you have your initial setup. Laptops / desktops and Internet are what one needs and these things are easily available to majority of students in urban areas. It can still be a challenge though in some remote villages where internet is not available or people can't afford things like laptops. The online education is further evolving with the introduction of teaching Apps on Mobile phones. With these apps students can access any study material anywhere with just on a click of a button instead of carrying the heavy books along. Interestingly use of these apps is not very costly. Now some NGOs have even started making all such facilities available free of cost which is making the digital approach even more popular.

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Technology is a tool to enhance effectiveness within the natur; not to destroy it.

Freedom: The Ultimate Goal

Charu Yeotikar

The great French thinker Rousseau said, "Man is born free but is in chains everywhere". What is a free man and what is the importance of freedom for human beings is what we will try to understand in this article.

Till the world was not divided in geographical boundaries and all species used to wander freely from one place to another, the whole earth belonged to everyone. All the species used to live together in jungle and the law of jungle was "Might is Right". Survival was tough for delicate homosapiens so they formed their communes and sheltered in caves. They were our early ancestors as cavemen and hunter gatherers. As homosapiens developed cognitive skills they domesticated other species and thus animals started losing their freedom.

In its journey from archaic humans such as Neanderthals, homoerectus to homosapiens and then up to modern humans gradually the brains developed and robustness reduced. *With its cognitive powers the homosapiens started showing their supremacy over lower cognitive species. This game of destruction of inferiors was very well played for a long time till most of the species became either extinct or endangered or rare.*

Mother Nature had always been generous to all its children and provided the necessary resources to all the living beings. In its journey from hunter gatherers to agricultural establishment humans understood the importance of possessions. From possession started the greed. Hunter gatherers were free population but after shifting to agriculture, labours were needed and a very cruel system of slavery was established. Slavery had a long history from old civilizations. *Among all the crimes man had committed perhaps slavery is the most heinous crime. It's a direct attack on the freedom of one fellow by another fellow being. Snatching a man's freedom and use him as a puppet can't be justified in any way. Slavery was legal in many societies long back and is abolished now. But human trafficking is still existing and nearly 40.3 million people are involved in one form or other form of slavery as debt bondage, domestic servants, sex slaves, forced marriages, child soldiers and labours etc.*

The history of great revolutions is a record of struggle of common men to achieve their freedom from clutches of tyranny. The French revolution of 1789 to 1799, American civil war of 1861 to 1865, Bolshevik revolution of 1917 to1923 or Long march of China of 1934 to 1935 all revolts were to honour human rights and maintain human dignity. The basic principles of French revolution Liberty, Equality and Fraternity or that of American civil war of Government of the people, by the people and for the people which laid the foundations of acceptance of human freedom. In comparison with these two revolutions the Bolshevik revolution of Russia and Long march of China brought more control over the people by their rulers.

Friedrich Engels and Karl Marx the two thinkers lived in free democracy of Britain but their communist manifesto had no takers in Europe. So seeds of communism were planted in Russia and China.What had happened to the ideology of communism? In few decades the people rejected the ideology, even the heroes of red revolution Stalin, Lenin, Trotsky's statues were removed from their motherland. The same case is that of heroes of Long March of China. Mao Zedong and Zou Enlai's policies had been highly disliked by the their own countrymen and were reverted. Marx and Engels were not alive to see the death of their brain child. Why communism is rejected? Because it didn't honour the freedom of man but believed in controlling man. Not only to control but to control with iron fist. Such ideology converts the whole nation into a large prison.

Revolt is not only the story of oppressor and suppressor but also that of the society and a nation. A big lesson we learnt from the French revolution is that revolution eats its own children, where Maximilien Robespierre, Jacques Pierre Brissot and other heroes of French revolution had gone? The heroes who had enlightened the lamp of freedom were lost to the darkness and then arises another dictator like Napoleon Bonaparte, who made his imprint in the history.

Medieval period was the darkest age in the history of the world. That was the time of imperialism. The looters were invading all over Africa, Latin America and Asia, suppressing the masses only to establish the supremacy of their fair skin. The principle of imperialism was to abuse and rob men and women so as to control the resources of their colonies to benefit their own motherland.

When Lokmanya Tilak said, " Freedom is my birth right and I will take it". He didn't demand for his personal freedom but his demand was for his nation. Because he knew that a free nation can only give freedom to its native. Is it right? The freedom of citizens depends upon what type of political system he or she resides. Let us have a look at the various political systems practised on the earth. The main political models are Democracy, Republic, Autocracy, Military rule, Dictatorship, Communism, Socialism, Fascism, Aristocracy Monarchy, Anarchy, etc. Irrespective of its drawbacks democracy is considered as the best system. Democracy which is followed by U.S., European countries, India, Singapore, etc. also defers from one country to another country.

A country is formed by its citizens and the nature, habits, culture, religion and ideology of its natives, which decide the fate and faith of that country. It's very weird that in the era of colonization when British were conquering one after another country to develop its empire at the same time by Magnacarta right they were setting norms for its institution to strengthens democracy in its own country while suppressing the rights of other countryman .

Except democracy all other models control the lives of its citizens with iron fist. In military rule civilians can be arrested without any reason and can not apply to judiciary. Even autocracy rules over its country in such a manner that people strive for their freedom. Most of the middle east countries are good examples of autocracy. When Syrian people revolted against their ruler and civil war started and millions of people were migrated and instead of taking refuge in the neighbouring countries preferred to go to Europe. Which has entirely different culture than their own? Why? Because the democracy of European countries appealed to them and they wanted to taste the freedom which neither their own country nor their neighbouring countries could have provided to them.

After couple of decades communist regimes could understand the unrest of its people and had to provide certain freedom to their people. Most of the African and Latin American countries are striving hard to survive in their implemented laws by their rulers.

It's not that people are happy with their democratic form of governments that is why generally after every election, ruling party is defeated by the same voters who brought it to the power.

After all what is the desire and demand of the public? Out of 195countries on the globe perhaps Nordic countries are providing best governance to their people.

What we learnt from the history of revolutions is common man can be suppressed up to an extent and for certain time. When sufferings reach to the point of intolerance of common people then they unite together and fight against the tyranny. Sometimes it succeeds, other times it fails. Success brings a new chapter in the life of a country. If the heroes of the revolution honour the freedom of mankind then they lay the foundation of democracy as in United States. Sometimes the heroes of the revolution remove one dictator and start dictating their countries. In that case common man passes from one period of darkness to another one..

The life of a country is far larger than the life of a man. There is no country on the earth which had not gone through ups and downs. Tyrants come and go, generations suffer and fight, sometime they gain sometimes they lose.

This article is incomplete without mentioning the highest form of freedom i.e. salvation or liberation better known as 'MUKTI' for us. In Hinduism there are four types of Mukti- 1.Saalokya (सालोक्य) where a devotee goes to heaven; 2 Saamipya (सामीप्य) where a devotee lives in vicinity of God; 3. Saaroopya (सारूप्य) where a devotee gets the form of his god and 4th is Saayujya (सायुज्य) where a devotee merges into God. It is the ultimate goal of few highly developed souls { spirited human beings} who achieved it by their very hard penances. Buddha , Tirthankars and number of Rishis could reach to the ultimate salvation. Let us pray for peace for everyone and hope that this millennium understands the value of liberty and human dignity and nobody dares to confiscate it from others.

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One day we all would cease to exist with not takeaway. Let us strive for our beloved descendants to prosper happily and feel proud to perpetuate the rich legacy they are blessed with.

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Non-Violence

Prakash Kale

We are celebrating on this 2nd October, the 150th Birth Anniversary of our father of Nation, Mahatma Gandhi. 2nd October is also observed as "International Day Of Non-Violence". The day has been set by the United Nations to think about importance of non-violence, which has been deemed necessary due to the excessive violence going around in the world now-a-days at all levels. Thus it is appropriate that we try to understand "Non-Violence" on which Gandhi gave much emphasis in his life, its relevance today and what it can contribute to well being of mankind.

I begin with English meaning of verse 62-63 of Chapter 2 of Bhagwad Geeta. It explains the fact that for any end fruit/result (bad or good) some original seed/action is there or as corollary, any original action or thought leads to another action, thought or consequences. This way it also explains the different basic causes, due to which a man resorts to violence or which ultimately leads to violence.

"While concentrating on objects of senses a person develops attachment to the sense objects, from attachment desires are born, from desire (due to non fulfillment) anger arises. From anger delusion occurs, from delusion bewilderment of memory, after forgetfulness of memory, the loss of spiritual intelligence, and losing spiritual intelligence one perishes."

As per above, attachment to physical objects, desire, anger, memory loss (of what is right or wrong) etc. are causes due to which a man acts wrongly (violently) and falls from high standards of non violent behavior.

Violence need not be absolute bloodshed. It can be as simple as, declaring self superior to other, ignoring someone in front of you, imposing your religion, ism or ideology on other, not paying/ giving what is rightful of others. In short its span is from mental agony to physical assault. When Punjab's farmer burns stubble, causing pollution in Delhi or Sardar Sarovar Dam in Gujarat is filled to its capacity, without considering suffering of submerging MP village residence, they are actions of violence. Any act or thought which shows indifference, aggression, hostility, cruelty, sadism and carnage etc are only the different form of violence. To put it properly, violence is basically of 3 kinds. First is by way of speech. A person can hurt his fellow human being by using harsh words. This kind of violence is as bad as the act of physical violence (second type). The third type is violence by thought. Such thoughts do not hurt anybody, but is violence of a kind. The one harboring such thoughts would definitely not be peaceful mentally and would remain stressed. ***True state of absolute non violence can be reached only when violence by words, action and thoughts, all can be removed.***

Where is the beginning of all this, a mis-belief that I /we am/are separate from other? What we do to other does not affect me/us. In my view seed of violence rests in us, with misconception of duality- self and other (person/object), mine and others, good and bad and so on. Unless dualism from mind /personality, whether from individual being or nation state goes out, we cannot eliminate violence from our life. Declaring self as non violent and consequently declaring other as violent itself is an action of violence. All of us may not reach the level where we can adopt concept of non-dualism (all is one) so I will deal with it at later part of article. But first, can we at least improve our behavior towards other, so that chances of violence are reduced in our life.

There are some theories and trends that have emerged in last 3-4 centuries, which unfortunately have given legitimacy to violence. First is Darwin's theory of evolution- purely a scientific theory about natural selection (of fittest genes) etc. and has been socially interpreted as justification for strong over weak; in it there is no immorality if weak is suppressed or exploited, for one's own advancement. These concepts have played havoc with society's harmony and peace. Corollary to this is that weak you will perish and this induced fierce competition in the society to be stronger to survive and grow.

Second one is rise of meritocracy in society replacing aristocracy. Though it is much desired advancement in sociology as it opened door of progress to all mankind based on quality and competition. But its overemphasis on success at any cost, has changed human behavior, eliminated compassion and empathy, destroying relations and family and making life miserable for all. It has created a new twist of uneven competition where the rich can win can grow at the cost of poor and thus seed in an envy among them against winners. Thus life/ society has created conflict and hatred arising out of endless terrible competitions.

Third is, as per GEETA, human mind works are classified as three types of Gunas- Sattva, Rajas and Tamas- of the nature. A mind that is dominated by Rajas is not ideal, yet the quality needed to have some sort of determination and ambition in life (like meritocracy). But it brings with it hyperactivity, restlessness, anxiety, fearfulness and agitated mind. These persons are competitive, too egoistic and have too much pride. Rajasic people are materialistic, crave power and success, but in the wrong sense, and will

go to any lengths (bad/good means) to get what they want. They hold their beliefs very strongly, try and sway others in their direction. These people cannot forgive/ forget and do hold grudge. So not only does the Rajas Guna cause problems between people, but it leads to hatred and a disturbed mind as well. All this is form of violence and also cause of violence. For perpetuator of Violence also (practitioner of Rajas Guna) suffer as stated in Geeta, verse 16 of chapter 14 says- **the result of rajas is sorrow.**

Further, an individual with inflated ego does not like anybody opposing his views and may become violent. Greed for acquiring power, fame and wealth (even of another person/ nation) has been the basic cause for violence (/war). Jealousy on seeing another person with better things or resources, also leads to violence. As said in the beginning, ego, greed and jealousy are the basic causes underlying violence and these basic traits have crept in society/mind through Darvin Theory, Meritocracy and Rajas Guna. Recent example is plastic, though a very useful material has become cause of pollution due to its indiscriminate use. Similarly too much emphasis on Rajas traits are creating psychological pollution in society and it is at the root of all forms of violence.

Thus violence has many disadvantages for individuals, communities and even nations. So many people are killed or maimed due to violence at a large scale. Children are left homeless and orphaned, people are displaced and become jobless and refugees pour in and live under conditions which are prone to diseases. Apart from this, the affected individual gets traumatized mentally due to the shock of witnessing such inhuman acts and is affected in multiple ways. Further the person or persons responsible for the violence also do not live peacefully after committing it. They live in constant fear of being caught or punished for their wrong doing and retaliation by their victim. Thus perpetuator is also constantly unhappy and stressed.

However, violence has become so pervasive in the world today that only when something gruesome or shocking happens there is often debate about how to check violence. But the world treats an evil with a greater evil. Use of force to set a wrong into right or to discipline a wrongdoer has been adopted as a norm. But is violence justified for a good cause? This is a critical question today and most people would react "yes" to it by pointing to terrorism, crime, the need for defense of vulnerable sections of society and so on. The issue of arms proliferation is based on the premise of promoting violence as a power and justifying use of weapons as a necessity to maintain peace, law and order. But history is witness to the fact that violence begets more violence. We can subjugate an enemy by use of force but can we subjugate hatred, resentment, mistrust and wickedness through force? No.

A person, society, nation or world at war or violent conflict cannot progress, let alone carry on its normal way of life. When survival, basic human rights and security are threatened, how can people think of creative and progressive pursuits? The only antidote and solution of problems created by violence is to promote a culture of ahimsa – nonviolence. Ahimsa is considered the highest duty in Hinduism and its many other religious traditions. In ancient India, people practically lived by the principle of 'Ahimsa Parmo Dharma' (non-violence is supreme conduct). Nonviolence by promoting rational and non-aggressive ways of solving problems can redress almost all problems of our world – ecological, economic, political, social, cultural and religious and nations will have no need for hoarding lethal weapons of mass destruction. Such a society or nation can devote itself to raising the bar to achieve the best in spirituality, science, commerce, art, education and other spheres of human activity. Imagine how much of mental, intellectual, cultural and creative energy will be at the world's disposal to invest in more progressive and constructive work. They can reach the highest level of human experience in terms of quality of work and relationships. Such a world is not a utopian dream but a reality that can be made possible in the present times.

To adopt a policy of absolute non violence, it is necessary that we remove the underlying causes of violence-described earlier as mental pollution. If every person can overcome his ego and greed, jealousy etc. it will be a big step in curbing violence. If a person learns to be happy in the achievement of others, feels good to see others prosper, he will always remain happy and carefree. No thoughts of violence will ever enter his head. If all people practice to shun these negative traits, the violence going around in the world will be much reduced and it will become a much better place.

To achieve that goal we can practice Patanjali's Ashtanga (eight elements) Yoga's first two elements. Ashtang Yoga is rooted in the notion of developing a positive personality. To improve individual physical and mental health, out of its eight elements, now a day's Asana and Pranayam are becoming popular and being practiced by large number of people world over. But to get full benefit out of it and remove violence from our mindset, everyone needs to practice, first two elements of Ashtang Yoga, Yama and Niyama, as ethical discipline or the practice of correct conduct is necessary for success in yoga. This is the basis of "Yama and Niyama" the two moral backbones of yoga. They define the attributes to be practiced in everyday life by everyone. Yama is the first limb and means 'taking a

vow' while Niyama is the second limb and means 'rule of conduct'.

There is a deliberate order in the five yamas. Ahimsa (non-violence) comes first because one must remove one's brutal nature first. Then comes satya or truthfulness, third is asteya or non-stealing. Brahmacharya or continence, which is the fourth one, is a divine attribute. The fifth is aparigraha, non-covetousness. With this the person is now free from cravings, unnecessary wants, the desire to possess and enjoy, and his heart expands manifold. The niyamas also consist of five limbs, namely shaucha, internal and external purification; santosha, contentment; tapas - austerity, swadhyaya, self-study and Ishwara pranidhana, surrender to divinity.

Yama and Niyama are inter-dependent. Niyama strengthens and safeguards Yama. For example, if one is contented, one will not steal, hurt others or tell lies and will find it easy to practice non-covetousness. When one is sufficiently advanced in the practices of yamas and niyamas, one can face every temptation by calling in the aid of pure and restraining thoughts. When the mind becomes pure it attains the state of steadiness and becomes one-pointed. If these positive qualities are not cultivated, the mind cannot be led to steadiness. With this we have removed basic causes of violence from our mind.

Wish to go further? This brings us back to concept of duality and non duality. Typically one lives either from duality (ego) consciousness or from soul (unity) consciousness. It makes a huge difference in terms of how one formulates relationship to the world, the meaning of life and realization from it, the nature of reality, engaging in certain practices etc. Dual [of ***Dualism***] means two—specifically, the two are set up in opposition and separate in some essential, irrevocable way. Duality is the concept and experience of life where one chooses to judge people, places and things. In doing so, one takes sides with either the right side or the wrong side. "***'Non-duality***' (Sanskrit word 'Advaita'), simply means 'not two' and points to the essential oneness (despite the compelling appearance of separation and diversity, wholeness, completeness and unity of life), one reality, which exists here and now. Oneness is all there is – and we are included." It points to an intimacy, a love beyond words, right at the heart of present moment experience.

In reality, dualism is illusion and there is only one world, one people, one creation, one choice. But humanity, being collective, has split the quality and value of people's choices into their choices. This split is "duality consciousness" when really there is simply "non duality". It must be understood and accepted that all citizens of Earth (and other creatures and matter) are one. It should be understood that one's good or bad act vibrate in cosmos and affect all equally. ***It also means perpetuating violence against other is illusion and is ultimately violence against self. It is just like teeth cutting own tongue.*** Thus moving from duality to nonjudgmental, unity consciousness, will save energy, time and create world peace as there is no conflict and violence.

As a rational student of science one might be skeptical about all that is stated above. But, interpreting this in context of **"Quantum Field Theory**" and "**String theory"** in Physics which, in simple words, states that we all, including matter, are not separate particles as considered in classical Newtonian Physics. It is all a part of big wave and governed by single force. So is any vibration, **sorrow or happiness** at one place spread all through; all are not separate but only manifestation of one and connected to other. Ultimately there is no **other** to inflict violence upon.

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"A hundred times every day I remind myself that my inner and outer life are based on the labors of other men, living and dead, and that I must exert myself in order to give in the same measure as I have received and am still receiving."

Albert Einstein

India – A Few Changes It Could Do With

Suyash Khare

At the stroke of midnight hour August 15, 1947 India, did not rise to life and freedom? When our leaders self-congratulated themselves to have achieved 'freedom', nothing significant had changed at grass roots, except that browns had replaced whites. The landless labour working in mines continued his deplorable life under dominant caste contractors, the life of peasant drenched in sweat under the scorching sun and the stigma of pollution still belonged to untouchables and Pauranic literature ruled the hearts of 'Independent Indians'.

The only thing that had changed after independence was that we got a dream: a dream of an egalitarian society that guarantees social justice, liberty, equality, and fraternity to all of its citizens. With the goal well laid out, it was left for future generations to draft plans to achieve final aim of social, economic, and political transformations. Today, our generation is fortunate enough to pick up the baton and chart solutions for 21st century resurgent, powerful yet backward India. This would require certain changes as outlined below -

Political Changes: Today, India is suffering from a multitude of problems on many fronts. In political realm, we witness a paradox. On one hand we have accepted democracy as the best form of governance rejecting monarchy, colonialism; on the other, we find democracy being hijacked by elite oligarchy, 'Avatar' worship, and dynasty rule.

We must bring in at least 20 year cooling off period before which close kin of a retired party leader cannot inherit party leadership. We should also amend the constitution prohibiting one candidate from getting elected more than twice to post of Prime Minister as is followed in mature democracies like the U.S.A. We should also make it mandatory for new entrants in politics to first contest local level elections before contesting for Assembly or Parliament. Stepwise growth is essential to understand ground realities before one acquires a responsible position in government to be able to gain necessary skills and expertise to an incumbent of responsible position. In a representative democracy, political parties are meant to serve people not individuals.

Another crisis faced by our political setup is the rampant criminalization of politics. Association for Democratic Reforms (ADR) reports that 188 out of 543 16th Lok Sabha members (about 34%) have criminal cases against them, many of which are of serious nature like murder, rioting, etc. Representation of People Act, 1951 should be amended to disallow political parties from giving tickets to candidates who have serious criminal charges filed against them at least 6 months prior to elections and where court has accepted the charge sheet.

In addition to this, Political Parties should usher a merit-based system like any other professionally run organization by adhering to tools like Right to Information Act (2005), as also recommended by Chief Information Commissioner), internal elections, etc. This will not just attract young talent but also develop quality standards and future benchmarks of good governance which unfortunately are absent in present political setup.

Finally, no democracy prospers without an active citizenry. People get the leader they deserve. Contemporary falling political standards are simply a reflection of our social and moral degradation. Selling votes in exchange of bill payments, loan waivers, money or liquor reflects the path our democracy has embarked to which is turning it into 'mobocracy'. The spirit of stakeholder mentality needs to be rekindled in them. Although steps like NOTA (None of The Above) were introduced to bring this change, they lacked substance and was seen more as waste of vote by people. Hence, NOTA should be given more powers like re-polling to take place in the constituency where NOTA gets more votes than any of the candidates.

Administrative Changes: No political setup can be successful without effective and efficient administrative machinery which is able to translate vision into reality. A socialistic ambition, as pure and well-intentioned it may be, is ineffective if it is not complemented with managerial efficiency i.e. the 'how' of governance.

Although various commissions have provided solutions to reform administrative machinery, they have not been implemented in spirit by different governments of the day. These reforms - structural, procedural, attitudinal, and psychological are as under-

Procedural Reforms:

Sensitivity training: For example: In Jan Maitri project, introduced by Kerela Police Department policemen are shown visuals of common man's desperation in their training period.

Lateral entries: Appointing of Sam Pitroda, Nandan Nilekani type, out of the box thinkers from private sector who can think globally and act locally are good examples.

Quantified Performance Measurement Benchmarks and Objective Appraisals: In 360-degree Appraisals

consumer feedback and subordinate opinion as well. ACR be replaced with APAR which unlike ACR is non confidential and aims at hand holding subordinates rather than 'controlling' them.

Structural Reforms::

One Stop Grievance Redressal Mechanism: For e.g. Aayakar Sewa Kendras bought in by Income Tax department.

Digitization of procedures: Implementing ERP (Enterprise Resource Planning like SAP). This Business Process Re-Engineering will result in quick, holistic, informed decision making that too in real time. It can track business resources viz. cash, raw materials, production capacity and the status of service delivery

Citizen Participation in Governance: Regular Jan Sabhas, Social Audits, will bring in transparency, innovative and targeted solutions, stakeholder mentality where in people don't consider themselves as passive beneficiaries but as active contributors.

Legal Reforms:

Amend Article 311 of the constitution that gives enormous discretion, immunity to civil servants.

Mid-career examination and performance review need to b introduced. Poor performers should be allowed to leave. No officer has the right to hold an office of public importance indefinitely just because he cleared some examination many years ago.

Strengthen 'Prevention of Corruption Act'-1988, to include collusive corruption in it.

Streamline, rationalise conduct rules. Revoke provisions of over regulation like requirement for attestation from a gazetted officer, etc. as was rightfully accomplished recently.

Code of ethics would go a long way in building a motivated work force in wake of an unpredictable, complex, changing environment.

All states should enact Lokayukta act in consonance with U.N. declaration against corruption of which India is a signatory.

Form a Civil Service Board as in Maharashtra to reduce political interference in official appointments, promotions which will reduce nepotism, sycophancy, corruption in government.

Reforms in Bureaucratic Mindset:

Officials should think of themselves as servants and not masters. For example, Julious Robero, Kiran Bedi, and Prakash Singh are all President award winners because they worked to serve the people.

These people were built of the qualities of empathy, kindness, courage to stand up against powerful lobbies. For e.g. Kautilya's vision of an ideal Sachiv (officer).

Our final aim should be less government and more governance. In words of Mr. Narayana Murthy, "Indian Civil Service (ICS) was replaced by Indian Administrative Service (IAS) post-independence. Now time has come when we replace Indian Administrative Service with Indian Management Service (IMS)".

Changes in Economy and Business: Apart from improving public service delivery, the above-mentioned reforms will also improve our Ease of Doing Business ranking which presently stands poorly at 130/189 as per World Bank's Doing Business Report (2016). An informal discussion with an average Indian businessman will reveal difficulty of doing business in India. As many functions in a business that many regulators are in govt – labour inspections, emission watch by NGT, construction monitoring by municipalities, Forex regulations by RBI, equity market by SEBI, taxation by I.T, CBEC, etc., and so on. Furthermore, there are legal hurdles- delays in land acquisition, federal issues, fuel supply shortage, sluggish freight movement, poor infrastructure, no buyer's protection. In each of these sub sectors we need a change. Labour Reforms from Rajasthan, time bound, transparent land acquisition from Gujrat, reliable procurement of electricity as in Chhattisgarh, robust credit supply as in Maharashtra, seamless mines to industry to market to consumer connectivity as in Gujarat west coast, one stop clearances as in Telangana's innovative Right to Clearance, effective dispute resolution mechanism and minimum labour unrest as in Punjab. Solutions are scattered. Centre should be a facilitator in integrating these dispersed solutions and fitting them as per local requirements. This will flourish Make in India campaign harnessing our demographic dividend and pushing us at par with China type economies.

Industrial reforms also mean venturing into new sunrise sectors, going beyond textiles, jewellery, I.T. and finance. Sectors like Food Processing hold an immense potential as they have a forward and backward linkage impact benefitting farmers, consumers and economy as a whole. Similarly, Tourism, being labour intensive, local, traditionally exposed, sector that too requiring minimum capital investment in a geographically gifted country like ours is a blessing we have not availed it so far.

Likewise, education sector too holds a promise. India can create a cadre of 'Indian Education Service' which will export teachers to the world capturing the minds of people into local tunes and this will be real victory that no hard power can beat. India will restore its status of 'Jagat Guru' once again, in post Asoka era as envisaged by Swami Vivekananda.

Social and Lifestyle Changes: "An average Indian is dissatisfied today" says the 'World Happiness Report' (2016) published by Sustainable Development Solutions Network which ranks India at 118/158 countries. It lies below many war-torn nations like Palestine(108), Pakistan(81). etc. In common life we observe students unhappy about his college administration (FTII, NIT) a tenant un-happy about landlord, citizens blaming politicians of corruption (IAC), and the chain is infinite. Post LPG, with permeation of television, DTH, etc to farthermost corners, injection of consumerism in minds, etc. There has been rise in desires in people which has led to estrangement, jealousy, and self-centeredness. Happiness is lost in pursuit of overtaking one's neighbour e.g. buying a longer car than his', pressurising one's child to score more than his neighbours' child and similar demonstrative effects in other spheres of life. Common middle-class Indian has turned into a money-making robot lost somewhere between his office and home. Ironically, he still feels he is 'normal'. There can be no cure without a diagnosis.

The solution to this conundrum lies 'within' us. Reconnecting to one's internal self was the thought of this year's World Culture Festival in Delhi. Appreciating the smaller beauties of life viz a child's smile, planting a tree, telling one's parents that you love them and your children that you will always stand by them. We should be sincere and not serious in our pursuit of life.

In our pursuit to reconnect with our innate self, no other country in the world has done research greater than India. In the today's world, crime, hatred, terrorism, restlessness etc are fast breeding but India has its peaceful future. Unfortunately, our own GenX is turning away from it. Therefore, to be prepared for future we need to regularly consult our past. We should develop confidence through school syllabus, familial values, social media, etc. For example, Yoga in school curriculum, World Culture Festival in Delhi, etc are cases in point. It also holds key to solving home-grown problems of Naxalism, terrorism, communalism, through peaceful means that would be sustainable and forge national unity.

Author is a seafarer serving worldwide as a navigating officer onboard cargo ships. He has contributed articles and poems in various magazines and newspapers since his school days. He has been the Chief Editor of Hindi section while in school, and member of multiple English and Hindi debate rooms while in college. He is a food and travel enthusiast and loves being close to nature.

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Who cares what am I, as long as I am not either useful or dreadful.

Can I take first step to complement my usefulness to the other.

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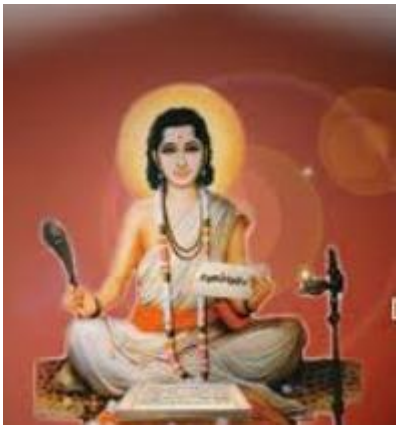
How dare you! You have stolen my dreams and my childhood with your empty words. We will not let you get away with this. Tight now is where we draw the line

- Greta Thumberg
16-years old climate activist
At UN Climate Action Comiittee on 23rd Sept'19

पसायदान – एक विश्व-प्रार्थना

डॉ. श्रीमती सारिका ठोसर



संत शिरोमणी श्री ज्ञानेश्वरजी का जन्म महाराष्ट्र में 12वी सदी में हुआ. उस वक्त समाज में धार्मिक, सामाजिक, राजनैतिक एवं आर्थिक संक्रमण चल रहा था. सामान्य लोगों को जीवन -यापन करना बहुत ही कठिन हो चला था. ऐसे में समाज को उचित मार्गदर्शन करने का अत्यंत महत्वपूर्ण कार्य ज्ञानेश्वरजी ने किया. उन्हे ज्ञानेश्वर माउली कहते हैं . माउली याने वत्सल माँ. एक वत्सल माँ जिस प्रकार अपने निशक्त बच्चे की पूर्ण तन्मयता से देखभाल, मार्गदर्शन करती है, उसी तरह संत ज्ञानेश्वरजी ने तत्कालिक समाज को ही नही अपितु, भविष्यकालीन समाज को भी उचित मार्गदर्शन किया है. उन्होने श्रीमदभगवत गीता का मराठी भावानुवाद किया , जिसे 'भावार्थदीपिका' या 'ज्ञानेश्वरी' कहते हैं . ग्रन्थपूर्ति के समय विश्व-रुपी ईश्वर को उन्होने ज्ञान -रुपी वाग् -यज्ञ की आहुती देते हुये प्रसाद (पसाय) मांगा जो कि, उनकी निर्मल मन की उँचाईयों को छूनेवाला है. लौकिक दृष्टी से उनका बाल्यकाल बहुत ही कष्टमय बीता किंतु इसके बावजूद किसी के लिये भी उनके मन में कटुता का भाव नहीं था. उन्होने सभी चर -अचर जीवों के लिये भी पसायदान में मंगलकामना की है. एक वत्सल मूर्ति माँ की भावपूर्ण अभिव्यक्ति हमें पसायदान में दिखती है. यह एक कालातीत विश्वप्रार्थना , जो मूलत: मराठी भाषा में शब्द -बध्द है, का हिंदी अनुवाद जबलपुर की स्त्री -रोग विशेषज्ञ स्व. डॉ. श्रीमती उर्मिला जामदार जी ने किया है.

श्रीमद् भागवत गीता का भावानुवाद ज्ञानेश्वर जी ने करीब 9000 छंदो में (ओवी) किया है , ज्ञानेश्वरी के समाप्ति के 09 छंदो में उन्होने परमपिता से कुछ मांगा है जो विलक्षण है , जिसका गद्यानुवाद करने का मैं अल्प प्रयत्न कर रही हूँ.

अब हे विश्वात्मक सदये, इस वाग्यज्ञ से तोषिये.
संतोष से मुझे दीजिये, पसायदान यह ..

अब हे विश्वात्मक ईश्वर , आपकी ही इच्छा से, प्रेरणा से, कृपा से संपन्न हुये मेरे इस वाग-यज्ञ (वाणी का यज्ञ) संतुष्ट होकर आप मुझे पसायदान अर्थात प्रसाद-रुपी दान दीजिये.

होवे खलो का कुटिलत्व नाश, उन्हें सत्कर्म में हो रति अशेष.
भूतों में परस्पर विशेष, मित्र भाव ..

दुष्टो की दुष्टता का नाश करके उनकी रुचि सत्कर्म की ओर बढे. चर एवं अचर जो भी जीव है, उन सभीकी आपस में गहरी मित्रता हो अर्थात विश्व में निरपेक्ष प्रेम स्थापित हो.

दुरितोका तिमिर जावे, विश्वस्वधर्म सूर्य उदित होवे.
जो जो वांछत सो वह पावे, प्राणिजात ..

पापका अंधकार मिट जाये और यह दुनिया मानवता-रुपी धर्म के सूर्य को देखती रहे अर्थात इस ईश्वरीय प्रेम के धर्म -रुपी सूर्य के प्रकाश में सभी जीवों की उचित मनोकामनायें पूर्ण हो.

वर्षत सकलमंगलमय, ईश्वरनिष्ठों का समुदाय.
अनवरत भूमंडल में यह, मिले सबको ..

जिनमें विचार, आचार एवं व्यवहार से सभी प्रकार की मंगलता बरसती रहे ऐसे ईश्वर से एकनिष्ट रहने वाले श्रेष्ठ श्रध्दावान महानुभाव भूमंडल पर सभी जीवों को निरंतर मिलते रहें. जिससे इस वसुंधरा पर ऐसे ईश्वरनिष्ठों का समूह निर्माण हो जाये.

चलतेकल्पतरु का आरव, चेतन चिंतामणि का गांव.
मुखरित स्वयं अर्णव, पीयूष के जो ..

अब इन ईश्वरनिष्ठों का – संतो का वर्णन करते हुये संत श्रेष्ठ श्री ज्ञानेश्वरजी कहते हैं कि ये संत तो कल्प वृक्षों के चलते फिरते बगीचे हैं . (जो मानवकी हर इच्छा पूर्ण करता है उसे कल्पवृक्ष कहते हैं) वृक्ष कभी मानवके पास चलकर नही आते किंतु ये संत रुपी कल्पवृक्ष स्वयं चलकर मानव के पास आते हैं और मानव के पवित्र कामनाओं को पूर्ण करते हैं .

ऐसे ईश्वरनिष्ठ संत चिंतामणि के सचेतन गांव है, अर्थात इनके पास ईश्वरीय ऐश्वर्य की अपरंपार राशि है. चिंतामणि (वह रत्न है , जिस भी वस्तु का हम चिंतन करते वह हमे प्राप्त होती है) . जैसे संत विवेकपूर्ण होने के कारण मानव द्वारा चिंतन की गयी उचित वस्तुओं को ही प्रदान करते हैं .

ऐसे ईश्वरनिष्ठ संत पीयुष के (अमृत के) बोलते महासागर है अर्थात भक्ति-रुपी, ईश्वरीय प्रेम-रुपी अमृत के महानिधि है. भक्ति-रुपी अमृत की एक बूंद भी मानव को मृत्यु से अमरत्व की ओर ले जाती है. यदि भक्ति-रुपी अमृत के बोलते महासागर ही हमारे जीवन में आ जाये तो फिर हमारा अस्तित्व ही अमृतमय बन जायेगा. ऐसे संत अपनी अमृतमयी वाणी से हमे भक्ति-रुपी अमृत में भिगोयें रहते हैं .

चंद्रमा जो अलांछन, मार्तंड जो तापहीन.
वे सबको सदा सज्जन, होवे प्रिय ..

ज्ञानेश्वर जी कहते हैं – जिसमें कोई दाग नही ऐसे चंद्रमा की तरह ये संत शीतल एवं आल्हादायक होते हैं. प्रकाश के स्त्रोत रहने वाले सूर्य की तरह ये अज्ञान -रुपी अंधेरे को मिटाकर ज्ञान -रुपी प्रकाश देते हैं, किंतु वे सूर्य की तरह दाहक नही होते , ऐसे जीवनदायिनी संतो के साथ हम आत्मीयता से जुड़े रहें तो हम भी ईश्वरनिष्ठ बन सकते हैं .

किंबहुन त्रिलोक पूर्ण, होवे सब सुख से संपूर्ण.
करे आदि पुरुष का भजन, अखंडित ..

ईश्वरनिष्ठो के साथ जुड जाने के कारण हर एक जीव , तीनों लोक के सारे सुख प्राप्त करके पूर्ण ईश्वरनिष्ठ बनकर उस आदि -पुरुष की अखंडित रुप से भक्ति करते रहे और ईश्वरीय कार्य में अपना पुरुषार्थ कर सबको ईश्वर - भक्ति का बोध कराके सुखी बनाते रहे.

और ग्रंथोपजीविक, इस जग में विशेख.
होवे दृष्टादृष्ट सुख, प्राप्त उनको ..

और इस जगत मे जिन्होने वेद-उपनिषद-श्रीम द् भा गवत,गीता आदि ग्रंथों को संपूर्णत: अपने आचरण में उतार लिया है , उन्हे दृष्य (इहलोक) एवं अदृष्य (परलोक) विजय की प्राप्ति हो अर्थात गृहस्थ एवं अध्यात्म दोनों क्षेत्रो मे उन्हे विजय की प्राप्ति हो.

तब कहत श्री विश्वेशराव, होगा इच्छित दान पसाव .
हुआ इस वर से ज्ञानदेव, सुखी संपूर्ण ..

श्री ज्ञानेश्वर जी की यह प्रार्थना सुनने के बाद विश्वात्मक ईश्वर (ज्ञानेश्वर जी के सदगुरु- बडे भाई- श्री निवृत्तीनाथ) ने कहा , तुमने अपने लिये कुछ भी न मांग कर अखिल विश्वकल्याण हेतु यह पसायदान (प्रसाददान) मांगा है , जो तुम्हे अवश्य मिलेगा. यह सुनकर ज्ञानेश्वर जी परम आनंदित हुये.

(संत ज्ञानेश्वरजी ने 21 वर्ष की आयु में संजीवन समाधी ली थी.)

लेखिका एक स्वतंत्रता-सेनानी एवं आध्यात्मिक संस्कार वाले परिवार में जन्मी हैं | उन्होंने M.A. (मराठी) तथा Ph.D. (मराठी साहित्य) पर की | वर्तमान में प्राध्यापक, चंचलबाई महिला महाविद्यालय, जबलपुर, हैं | आध्यात्मिक चिंतन, विवेचन एवं लेखन उनकी विशेष रूचि है

e-Mail ID: sarikathosar@gmail.com

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प्रार्थना - मूल स्वरुप (मराठी भाषा में)

प्रार्थना देवा तुला ही तू सदा जवळी रहा
मी जिथे जाईन तेथे प्रेमदृष्टीने पहा

दुःख जेव्हा दाटुनिया भार हितो अंतरी
मी कैसे विनवू तुला रे धाव तू गरुडापारी
संकटाशी झुंजण्याला हात दे मजला दहा
(मी जिथे जाईन तेथे प्रेमदृष्टीने पहा)

स्वैर वेगे जीवनाचा धावतो रथ सारखा
संयमाचा पथही माझ्या लोचनांना पारखा
सारथी होऊन आता आवरी अपघात हा
(मी जिथे जाईन तेथे प्रेमदृष्टीने पहा)

आस नाही मज कशाची खंत नहीं मानसी
तू नभाच्या लोचनांनी सर्व काही जाणसी
देह हा कर्मात सरूनी सफल होवो जन्म हा
(मी जिथे जाईन तेथे प्रेमदृष्टीने पहा)

- **अज्ञात**

प्रार्थना (हिंदी अनुवाद)

प्रार्थना तुझसे हे भगवन तू सदा पास रह
मैं जहां जाऊं वहां प्रेमदृष्टि मुझपर रख

दुःख जब घनघोर हो तब भारी मन रहे
कैसे विनती करुँ तू दौड़ गरुड़ से परे
संकटों से जूझने हाथ दे मुझको तू दस
मैं जहां जाऊं वहां प्रेमदृष्टि मुझपर रख

स्वैर वेग से बढ़ रहा है मन निरंतर मेरा
संयम के पथ को परख सके यह मन मेरा
सारथी बनकर इस अपघात से दूर रख
मैं जहां जाऊं वहां प्रेमदृष्टि मुझपर रख

आस कोई न है मुझमें खेद नहीं मन में
तू ढगों सब देखता और तू सब जानता
देह कर्ममें रमकर सफल करूँ जन्म यह
मैं जहां जाऊ वहां प्रेमदृष्टि मुझपर रख

- **ज्ञान विज्ञान सरिता**

Online Education At RKM School, Sitanagram : An Experience

Sudhakar Chigurupati

A Virtual Class Room is an online learning system where both the teachers and the students being taught communicate to each other just like the real class room while they are at different geographical locations. The system comprises of all the basic tools viz, broadband internet connection, computer, projector, web camera, and noise and echo-free sound system with wireless microphones to run a class room effectively. Virtual classes were started in 2017-18 academic year in our Ramakrishna Mission High School, Sitanagaram, Vijayawada, Andhra Pradesh, with the help of Ek Kadam Aur, a NGO. Learning through a Virtual class room offers many benefits which the traditional Chalk-N-Talk method does not provide.

Easy access to the subject experts, effective time management are the salient features of virtual class room. Virtual classes allowed us to schedule classes as per convenience of the available faculties spread across within and outside the country. The instructors who are from India and Abroad are experts in their respective subjects. Usually these virtual classes are scheduled in such a way that they don't disturb our school schedule. Mostly we scheduled the classes from 7:30 am to 9:30 am in the morning. We are glad to state that with the association of such experts including those from GyanVigyan Sarita, our students have been improving their knowledge in Mathematics, Physics and Chemistry for the last three academic years. We are very proud to inform that one of our students T.H.P. Harshita got admission in IIT Dhanbad and another boy M. Janakiram got admission in MBBS in one of the prestigious medical colleges in Andhra Pradesh.

Motivation and guidance of the mentors that our students are receiving, we are pretty sure that many more students of our school will join in elite Educational Institutions in India and Abroad. **Swami Vivekananda** had opined that "*upliftment of the poor and under privileged is possible only by providing them the best possible education*". Now a days the quality education has been becoming a costly affair. This situation is not allowing the poor and under privileged students to get access to quality education. At this critical juncture in our efforts to give best possible education to deprived children, Gyan Vigyan Sarita (GVS), a non-organizational, non-remunerative, non-commercial and non-political imitative driven with a sense of Personal Social Responsibility (PSR), is complementing our efforts. Their initiative is to democratize the education through Interactive Online Mentoring Sessions (IOMS) for underprivileged students, which is the need of the hour. Taking up such a great responsibility after retirement by a small group of Four persons constituting GVS is indicative of their passion, commitment and enthusiasm for the cause. Our association with GVS during the last 2 academic years, which is still continuing has motivated teachers at our school to collectively complement for betterment of the students and the society. At present, sessions of IOMS are conducted by GVS for students of class IX and X thrice a week throughout the academic year. We take it to be our privilege to share our experience and write a few words on IOMS in Fourth Annual (Special Issue) of its monthly e-Bulletin GyanVigyanSarita-शिक्षा, on the special day for all teachers.

Author is Head Master at Ramakrishna Mission School, Sitanagram, Andhra Pradesh. He is M.A., B.Ed. He is a passionate and a dedicated teacher.

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Modern cynics and skeptics... see no harm in paying those
to whom they entrust the minds of their children
a smaller wage than is paid to those to whom
they entrust the care of their plumbing.

- John F. Kennedy

A GREAT GIFT TO THE SOCIETY

Smt. Ch. Anjani Kumari

There are persons who inspire all in the development of the next generation and also for the development of the nation. There are persons who inspire all the teachers and the students to make their country great with a firm foundation for new generation. Those are the great person who treat the students as their grand children and inspire them by telling inspiring quotations of Swami Vivekananda and other accomplished personalities in different walks of life with a thrust to develop the national spirit, environmental awareness and coexistence. This develops students to think beyond self and question with reasoning within and outside their text books. It promotes ability of the students to come up with different types of problems and attempting to solve them on their own.

Such teachers by way of involvement of students outside school curriculum help students to understand importance of time, a most perishable resource. In the process students start appreciating values of system, society, a key to integrations and sustainable coexistence. Students have enormous hidden potential. Teaching subject is one thing, but inculcating the great the power of hope and vision among students is something which is worth emulating from such teachers.

We will always be grateful to such teachers who have infused in us love for continuous learning, inspiring and guiding to realize our potential.

They are the tireless persons like a candle which is burning out to shape our future. Their words of wisdom will be in our hearts forever along with teaching as the attributes of imagination, creativity and kindness. They have also made our world beautiful by telling us about the values, integrity and teamwork to collectively complement each other. They have inculcated scientific attitude and created interest in us to accept challenge of solving complex problems in a simple way. We thank them for being my guide and showing faith and love on us. What makes them unique is besides being a treasure house of knowledge growing age nearing seventies is never a barrier. It involves a huge amount of sacrifice patience and perseverance. We shall always be grateful and thankful for getting plenty of opportunities to participate, discuss and represent this great mission as a family.

Let us once more thank all such persons whose *mission is their identity*.

Author is a teacher of Physical Science at Ramakrishna Mission School from 2012, where IOMS of this initiative has been implemented and is in its third successive year. She is M.Sc., B.Ed.

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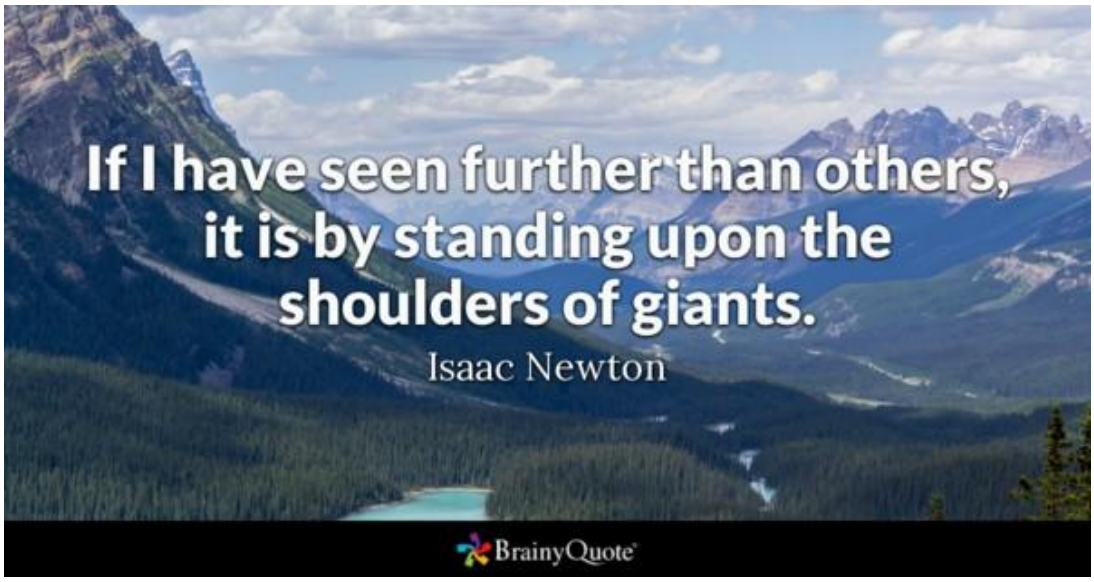

ग्रामीण भारत में शिक्षा

संजय शुक्ला

आज नए भारत का डंका चाहे विश्व में बज रहा हो, आज भी भारत की आत्मा गाँवों में, देश के हुक्मरानों से, अपने अधिकारों की बाट जोह रही है। विश्व के तमाम विकसित देशों के जी.डी.पी. बढ़ाने में वहां की शिक्षा व्यवस्था की प्रत्यक्ष एवं प्रमुख भूमिका रही है। दक्षिण कोरिया जैसा छोटा देश जो 1953 में विभाजन की मार झेल चुका है, अपनी शिक्षा नीति के कारण विश्व की शीर्षस्थ सुदृढ़ अर्थव्यवस्था में शुमार है। वहीं दूसरी ओर सोने की चिड़िया और विश्वगुरु जैसे विशेषणों से अलंकृत भारत आज भी अपनी खोई हुई प्रतिष्ठा को पुनर्स्थापित नहीं कर सका है । एक ग्रामीण क्षेत्र में कार्यरत शिक्षक के रूप में विचार-मंथन करने पर मुझे लगता है कि इसका बुनियादी कारण है हमारे देश में प्राथमिक शिक्षा पर समुचित ध्यान नहीं देना । हमारे नीति निर्धारको ने प्रारंभिक शिक्षा को एक प्रयोगशाला बना डाला है , जहाँ नितनूतन प्रयोग तो किये जाते हैं, परन्तु परिणाम वही ढाक के तीन पात होता है । आज भी हमारे देश में हजारों स्कूल शिक्षक विहीन हैं । स्कूलों में आय.सी.टी. (Internet Communication Technology) के उपयोग की परिकल्पना बनती है परन्तु, दूर-दराज में ऐसे हजारों स्कूल हैं जहाँ शाला-भवन और पीने के पानी जैसी मूलभूत आवश्यकताओं की पूर्ति का इंतजार है । देश में सुरसा के समान बढ़ती बेरोजगारी और डॉलर के मुकाबले भारतीय मुद्रा के तेजी से हो रहे अवमूल्यन के पीछे भी हमारी लचर शिक्षा प्रणाली ही नजर आती है । नेशनल अचीवमेंट सर्वे (NAS) के आंकड़ों से यह स्पष्ट है कि प्राथमिक और माध्यमिक स्तर की औपचारिक शिक्षा पूर्ण कर लेने के बाद भी हमारे बच्चों को किताब पढ़ना नहीं आता । ऐसे में एक शिक्षक होने के नाते मेरे मन में यह प्रश्न आना स्वाभाविक है कि - 2024 में होने वाले पीसा (Programme For International Students Assessment - PISA) टेस्ट में वैश्विक स्तर पर हम देश की साख कैसे बचा पाएंगे ? मुझे लगता है कि आज भी हमारा देश, शिक्षा की वैश्विक आवश्यकताओं को समझकर स्वयं को अपडेट करने हेतु वांछित प्रयास करने में पिछड़ रहा है । हम इस सोच से अभी भी बाहर नहीं आ सके हैं कि आज से 10-20 वर्ष पहले हमारे देश को जैसी शिक्षा, शिक्षक और विद्यार्थियों की आवश्यकता थी वो तेज गति से बदलते भारत के लिए दोगुनी गति से अप्रासंगिक होती जा रही हैं ।

महत्वपूर्ण यह नहीं है की आप कितने सफल हुए हैं, परन्तु महत्वपूर्ण यह है कि क्या आप अपनी योग्यता के अनुकूल सफल हुए हैं? इस तथ्य में भी दो राय नहीं हो सकती कि टैगोर , गाँधी, विवेकानंद, मदर टेरेसा, कलाम जैसे मनीषियों की इस देश में मानवता की सेवा में निःस्वार्थ भाव से अपना जीवन खपा देने वालों की कमी नहीं है । एक ऐसे ही महामना के मार्गदर्शन एवं सहयोग से मैंने भी ग्रामीण क्षेत्र के एक विद्यालय में मासूम, गरीब, वंचित एवं आधुनिक शिक्षा की सुविधाओं से अनजान बच्चों के लिए Interactive Online Mentoring Session (IOMS) के माध्यम से यहाँ की शिक्षा, शिक्षक और विद्यार्थियों को अपग्रेड करते रहने का सफल और सुखद प्रयास किया है। इस IOMS का विकास स्वतंत्र रूप से सुविधाओं और संसाधनों के आभाव में हुआ है, इसलिए यह कहना अनुचित नहीं होगा कि यह ICT का ज़मीनी यथार्थ पर व्यवहारिक रूपांतर है। इस प्रयोजन में IOMS की भावना जीवन प्रबंधन के उस बुनियादी सिद्धांत पर आधारित है जिसके अनुसार " if you are not upgrading, you are downgrading and ultimately you will be outdated."

एतदर्थ देश के राजनेताओं, शिक्षाविदों एवं नीति-निर्धारकों से यह अनुरोध है कि बदलते भारत में शिक्षा की बदलती आवश्यकताओं और चुनौतियों को केंद्र में रखकर ग्रामीण भारत के विद्यालयों तक ICT की सार्थक सहभागिता सुनिश्चित करें । फिर वह दिन दूर नहीं जब भारत विश्व में सुपर-पॉवर का स्थान अर्जित करेगा ।

"कर्मण्ये वाधिकारस्ते माँ फलेषु कदाचन"

लेखक म.प्र. के धार जिले में ग्राम कानवन की एक शासकीय शाला में प्राचार्य हैं । आपको ग्रामीण क्षेत्र में अध्ययन-अध्यापन का 30 वर्षों का अनुभव प्राप्त है । आप राज्यपाल पुरस्कार से सम्मानित हैं ।

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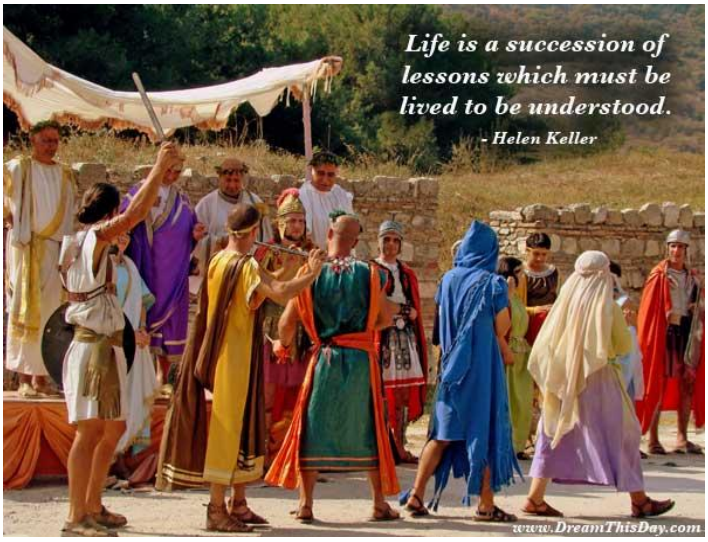

EDUCATION: A JOURNEY

Ravi Sharma

Education is the reason which differentiates human being with the animals. This is the only path which enlightens the human life and makes them worthy of calling themselves intellectuals. However, apart from the philosophical understanding of the education, we should be mindful of this fact that it is the only device which can create a path of success for the downtrodden strata.

With this motive in mind Sarthak Prayash (an NGO) commenced its journey to enlighten the path of those who are less privileged and now it has been 9 years since the journey has been started. However, it has been a journey of debates, conflicts, pain, hard work and persistence. In all these years, we have tried to understand the meaning as well as philosophy of education. We have understood that the aim of education is not only to ensure the path of success by changing the livelihood of a sect of society but also to introduce them to the world of knowledge wherein the sky is the limit. Knowledge which makes them a better human being, which gives them an understanding of what life, is so that they can at least muster courage to uplift their life.

However, the best part is the growth which we have witnessed in these kids as a human being. They have become more humble, helpful and confident. We have seen that after this toil in all these years, now our kids are ready for the world and to treat it as their stage. This has been possible only because of a mentor who introduced these kids to the world of mathematics and showed them that how a subject like maths should be understood. The mentor is currently an active member of the core team of Gyan Vigyan Sarita, a non-organizational, non-remunerative, non-commercial and non-political initiative through Interactive Online Mentoring Session (IOMS) and associated activities. This initiative is driven with a sense of Personal Social Responsibility (PSR) towards deprived children.

These students were taught the philosophy of understanding the need of a subject, its history and growth. It helped students to understand evolution of thoughts apart from learning the subject. This makes whole concept of education easy, interesting, and logical.

We also understood that without good teachers, we cannot create the good students. Since, every time a teacher who may be extremely busy cannot be expected to visit a particular centre, we took the help of technology so that through internet a teacher can teach our students from his home only. The strength of technology may be understood from the fact that first class of a boy of rickshaw-puller in Vasundhara, Ghaziabad was taken by an engineer sitting in Texas, USA. We understood that this is the only way to groom all the students. Now, we have lap tops at our centre in Vasundhara, Ghaziabad and the students at time are benefitted with the online educational website like Khan Academy. Interestingly, they have aligned themselves with this system so well that at times there is a need to only supervise them. May be Artificial Intelligence is a reply to these issues as well.

However, we still believe that in a populous nation like India there is a need for skill centres which can provide vocational training to these kids so that we can ensure their livelihood. But this is a distant dream which may be possible only with the public-private partnership. We truly hope that one day we will be having those centres to further groom our kids.

Author is a B.Com. (H) and LLB from BHU and a practicing advocate for last 16 years. He is a Sr Consultant in PwC and a founder member of Sarthak Prayash.

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As per Darwin Theory talent can grow only in scarcity, too much of support is reatds growrh of the talent.

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शिक्षा में नवाचार

पी. एस. राठौर

दौलत सिंह धारविया

नवाचार (नव+आचार) अर्थात् नया विधान का अर्थ किसी उत्पाद प्रक्रिया या सेवा में थोड़ा या कुछ बड़ा परिवर्तन लाने से है । नवाचार के अंतर्गत कुछ नया और उपयोगी अपनाया जाता है, जैसे कोई नई विधा या नई तकनीक। प्रत्येक वस्तु या क्रिया में परिवर्तन प्रकृति का नियम है परिवर्तन एक जीवंत गतिशील एवं आवश्यक प्रक्रिया है जो समाज को वर्तमान व्यवस्था के प्रति और अधिक व उपयोगी तथा सार्थक बनाती है। इन्ही सब से नवचेतना और उत्सुकता का संचार होता है, इसकी प्रक्रिया विकासवादी और नावगत्यात्मक होती है। परिवर्तन और नवाचार एक दूसरे के पारस्परिक पूरक या पर्याय हैं।

"नवाचार कोई नया कार्य करना ही मात्र नही है वरन किसी भी कार्य को नए तरीके से करना भी नवाचार है।"

व्यक्ति और समाज में हो रहे परिवर्तनों का प्रभाव शिक्षा पर भी पड़ा है। शिक्षा को समयानुकूल बनाने के लिए शैक्षिक विधाओं में नवाचार ने अपनी उपयोगिता और सार्थकता स्वयं सिद्ध कर दी है। ट्रायटेन के अनुसार "शैक्षिक नवाचारों का उद्भव स्वतः नहीं होता बल्कि उन्हें खोजना पड़ता है तथा सुनियोजित तरीके से इन्हें प्रयोग में लाना होता है ताकि शैक्षिक कार्यक्रमों को परिवर्तन परिवेश में गति मिल सके और परिवर्तन के साथ गहरा तारतम्य बनाये रख सके"।

इस प्रकार नवाचार एक नवीन विचार है, एक व्यवहार है अथवा कोई नया तरीका है जो नवीन और वर्तमान का गुणात्मक स्वरूप है। जगजाहिर हैं कि कुछ बदलाव करने के लिए समाज की बेहतरी के लिए जो ठोस कदम उठाए जाते है उससे व्यक्ति और समाज में हो रहे परिवर्तनों का प्रभाव शिक्षा पर भी पड़ा है ।

सोच-विचार कर किये गये नवाचार प्रयोग में आरम्भ में कठिन मेहनत तो करनी पड़ती है, कुछ कठनाईयों का सामना भी करना पड़ता है, इसका आशय ये कतई नहीं कि हम नई पद्धतियों न स्वीकारें, क्योंकि अंत में सफलता मिलनी तो तय ही है।

विद्यालयों में सीखने की प्रक्रिया प्रभावी रूप से संपन्न करने में सबसे महत्वपूर्ण होती है विद्यार्थियों की उपस्थिति । इसके लिए कुछ बेहतर तरीके अपनाने होंगे जैसे साप्ताहिक पुरूस्कार इसके अंतर्गत प्रत्येक विद्यालय में हर शनिवार को बालसभा के दौरान ऐसे छात्रों को पुरूस्कृत किया जाना, जिनकी साप्ताहिक उपस्थिति सर्वाधिक रही हो, ऐसा ही जिन छात्रों की माह में सर्वाधिक उपस्थिति हो उनको भी पुरूस्कृत किया जाना चाहिये। इससे सभी विद्यार्थियो में स्वस्थ्य प्रतिस्पर्धा जन्म लेगी और विद्यालय की उपस्थिति में इजाफा भी होगा। बाल-केबिनेट के सहयोग से भी विद्यालय की उपस्थिति बढ़ायी जा सकती है।

इसके साथ आनन्ददायी शिक्षण ऐसा प्रक्रम है जिससे छात्रों की रूचि अनुसार बिना मानसिक दबाव डालें सहज तरीके से शिक्षण करवा कर विद्यालय की छात्र उपस्थिति बड़ा सकते हैं और इन तरीको को अपनाकर हमारा शिक्षण व्यवस्था को और भी रोचक बनाया जा सकता है ।

इस सत्र से हमारी ग्रामीण अंचल की शाला में प्राचार्य महोदय के प्रयासों से एक नवाचार आरम्भ हुआ है। उसके तहत **ज्ञान विज्ञान संस्था** के सानिध्य से निःस्वार्थ एवं निःशुल्क गणित और भौतिक- शास्त्र की नियमित ऑनलाइन पढ़ाई (Interactive Online Mentoring Sessions – **IOMS**) के माध्यम से कराई जा रही है। ग्रामीण परिवेश की कठिनाइयों के बावजूद छात्र-छात्राओं में इन विषयों को सरल , रुचिकर एवं बोधगम बनाना इस प्रयास का मुख्य उद्देश्य है।

ऑनलाइन कक्षा के दौरान विद्यार्थियों को प्रश्नोत्तर के लिए प्रोत्साहित तो किया ही जाता है, साथ ही हर कक्षा में विद्यार्थियों के व्हाट्सप्प (WhatsApp) ग्रुप बनाकर उन्हें अपने प्रश्न, कठिनाइयाँ एवं शंकाओं को सीधे सुदूर स्थित मार्गदर्शक (Mentor) से पूँछने के लिए प्रोत्साहित किया जाता है। इस प्रयोग में अनुशसित ढंग से व्हाट्सप्प के उपयोग के लिए विद्यार्थियों मैं संयम निर्माण करने की प्रारम्भिक एवं व्यावहारिक कठिनाई के बावजूद विद्यार्थियों मैं इस सुविधा का लाभ लेने के प्रति एक विशिष्ठ उत्साह का अनुभव किया जा रहा है।

इस क्रम को वर्तमान परिस्थितियों में चालू रखना कठिन जरूर है, तथापि प्राचार्य महोदय और शिक्षकों के सहयोग को देखते हुए यह विश्वास किय जाता है कि इससे न सिर्फ छात्र- छात्राओं अपितु शिक्षकों को भी एक नयी सोच का लाभ मिलेगा। यह शाला एवं विद्यार्थियों को उत्कृष्टता के शिखर पर बढ़ने ने लिए प्रोत्साहित करेगा। साथ ही उन्हें व्यक्तिगत जीवन में प्रभावशाली व्यक्तित्व का विकास करते हुए सामाजिक उत्थान की कड़ी बनाने में सहायक होगा।

लेखक उच्चतर माध्यमिक शिक्षक (गणित) हैं। वर्तमान में शासकीय उच्चतर माध्यमिक विद्यालय, कानवन, तह. बदनावर, जिला-धार (म.प्र.) में कार्यरत हैं । शिक्षा में नवाचार उनकी विशेष रूचि है।

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लेखक उच्चतर माध्यमिक शिक्षक (भौतिक शास्त्र) हैं। वर्तमान में शासकीय उच्चतर माध्यमिक विद्यालय, कानवन, तह. बदनावर, जिला-धार (म.प्र.) में कार्यरत हैं । शिक्षा में नवाचार उनकी विशेष रूचि है।

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इस शाला में गणित और भौतिक शास्त्र विषयों मैं विद्यार्थियों का मार्गदर्शन के IOMS माध्यम से किया जाता है, और दोनों शिक्षक इस प्रयोजन में संयोजक के रूप में सहभागी हैं।

—00—

जब हम बदलेंगे तब देश बदलेगा

प्रिय बहनों,

नमस्कार।

विकास में महिलाओं का विशेष स्थान है। कोई भी परिवार, समाज, देश, बिना महिलाओं के प्रगति नहीं कर सकता है।

जिस प्रकार एक महिला पूरे परिवार, समाज को शिक्षित करती है, उसी प्रकार आओ बहनों, अब हमारी बारी आ गई है कि हम प्रधानमंत्री जी की घोषणा "2 अक्टूबर से देश को one time use of plastic bags n bottle etc पर पूर्णतः रोक लगाई जाएगी" के अनुसरण में अपना योगदान दें।

हमारे घरों में बहुत अच्छे मजबूत कपड़े, जिन्हें हम प्रयोग में नहीं लाते हैं, बेकार पड़े रहते हैं। क्यों न हम, उन कपड़ों से सुन्दर एवं आकर्षक थैले बना कर, लोगों को बांटें ताकि plastic bags का प्रयोग कम हो सके। इससे हम अपनी रचनात्मकता को जो रोज मर्रा की आवश्यताओं में खो गई है, उसे जागृत कर सकेंगे । आपके सहयोग के लिए धन्यवाद।

इस प्रकार बनाये गए कुछ थैलों के नमूने यहाँ प्रस्तुत हैं। आपके सहयोग के लिए धन्यवाद। आइये इस क्रम को आगे बढ़ाएं।

निवेदक -कुसुम लता गुप्ता

निवेदक, एक शिक्षक की पुत्री एवं एक प्रतिष्ठित इंजीनियर , शोधकर्ता एवं शिक्षाविद की सहचारिणी हैं। सामाजिक विषयों पर चिंतन एवं उस पर कार्यान्वन उनकी अभिरुचि है ।

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VISION OF VILLAGE

Swati Karve

Introduction: Energy is a basic requirement for economic development. Every sector of economy - agriculture, industry, transport, commercial, and domestic – needs inputs of energy. The economic development plans implemented since independence have necessarily required increasing amounts of energy. As a result, consumption of energy in all forms has been steadily rising all over the country.

This growing consumption of energy has also resulted in the country becoming increasingly dependent on fossil fuels such as coal and oil and gas. Rising prices of oil and gas and potential shortages in future lead to concerns about the security of energy supply needed to sustain our economic growth. Increased use of fossil fuels also causes environmental problems both locally and globally. Against this background, the country urgently needs to develop a sustainable path of energy development. Promotion of energy conservation and increased use of renewable energy sources are the twin planks of a sustainable energy supply. Fortunately, India is blessed with a variety of renewable energy sources, the main ones being biomass, biogas, the sun, wind, and small hydro power are basically different forms of biomass.

Advantages of renewable energy are that it is perennial, available locally and does not need elaborate arrangements for transport. India is implementing one of the world's largest programmes in renewable energy.

Story of a Indian Village Woman: In Indian culture woman are responsible wholly for house hold job. They have to look after children, do cooking for whole family and also maintained the house and all the jobs related to maintain of all member of family. Usually it is observed that Male are given lot of importance in the family, in childhood by mother in young age by sisters, after marriage by wife and in old age by all the lady member of the family.

There is a lot of dictatorship and lady has to undergo lot of pressure and by neglecting herself she takes care of the family.In urban areas there is a gradual change in the position of woman now. The ladies are educating and most of them are working. She is supporting financially and trying to fulfill her house hold job individually or with the help of engaging house hold made or labour in exceptional cases the male member in the family have started sharing house hold job burden. Indian culture dose not encourage males to do house hold chores and female member from her child hood moulds her self for the circumstance.

In villages the situation is not very different; the burden of house hold work is only on females. They are normally less educated, they are usually within laws and due to joint family she as to look after old members of the family, adopt there rituals and, also look after the children. This is not the end of her duties, she has to leave the house early in the morning at about 8 AM every day. If she is working in farm she has to leave in the morning, walk from her hut, work in the field in all seasons. The hard ship is unbearable, the hot sun the killing winter and rains, she works shoulder to shoulders with her male member of the family, if she is working as a labour on construction site or at any place she as to commute to the work place and she has to return home after all hard ship and fatigue of the day, to look the house hold chores.

Before leaving the house she has to cook for the whole family, and for her self, and her husband's tiffin (lunch box). When she comes back she has to cook again for the family. Their economic status is very poor in limited resources, she has to meet lively hood. The family is usually large and resources are limited. Women education percentage in many parts of country is very low and due to this she has to work as labour only.

Average income of female labour is Rs. 5000/- to Rs7000/- out of this income she has to spend for basic needs of the family. If one analyses the food, clothing and shelter are the basic needs which she can hardly meet in such a limited resources.

The under developed villages, lack of resources and lack of education makes the life very hard. Due to poverty and hard work men are victim of drug addiction and the income of male member do not contribute to house hold expenses this results in to social problems like quarrels fights etc. this makes female more unhappy and the burden of the family is on her shoulders. The efforts of ladies increase towards the family.

Methodology used in Villages and poor families for Cooking : The normal cooking is done on mud stove (Chula). The fuel used is usually wood and cow dung cake. In summer they collect small, thin wood, dried leaves etc. from surrounding areas and use them for mud stove. The wood logs usually are stored for rainy season as the broken thin wood, dried broken trees, dried leaves are not available. They also use cow dung cake (Kanda) for cooking. They are available in summers at a cheaper rate say Rs. 50 to 60 for 100 cakes 8" to 10" Ø and in rainy season the rate increases to Rs 80 to 90 for the same 100 cakes. It is difficult to get cakes in rainy season and damp cakes cause lot of smoke and cooking is very

difficult. In nutshell wood logs are the only solution for faster cooking in wet season. They cut trees from forest or near by areas and store for fuel, if fuel is not available then they have to buy wood logs for cooking and it is very expensive and is the only solution.

The average family of 5 to 6 persons, 2 adult and 3 children's requires15tp30% of income, which is too high as has to spend for food and health, house hold things and house maintenance, education for children if any and as we observe through their living style they have to cut short all their needs and what they get is the only "Dry Roti" (home made bread) and salt, clothes, just to cover the body, broken hut and unhealthy, and neglected children.

The traditional cooking system is very harmful and hazardous to the health of woman as well as all the members of the family. The ill ventilated rooms gets filled with smoke and the family suffers from all the diseases. The system is very time taking and it is very laborious. The fuel used is the energy which is wood and reducing the trees from forest. It is a very sensitive issue and is affecting the environment at a very large scale. This result into ecological imbalance.

Cutting of wood and using as fuel is not a proper solution, when the Gobar (cow dung) is available in plenty in rural areas. The use of cow dung is not a very difficult and expensive solution. The average family of 5 persons needs fuel which is produced by 2 buckets of cow dung and water. This can save the tedious disposal system, can save the time of ladies in rural areas this will help in reducing the health hazards caused by smoke and will also reduce the hardship of collection of fuel. This will discourage the cutting of trees and will save the environment.

In India females are considered to be **motherly power** (Matru Shakti) but it is very pain full to say that they are most neglected in the society.

Wood Smoke & It's Problems: The smell of wood smoke evokes fond memories for many people, but for others it has become a danger signal. Wood smoke, largely from wood stoves, has become a major part of the air pollution problem. Smoke is composed of many small particles of carbon compounds from the burning of organic matter such as wood or coal. These small pieces of Organic matter from smoke, along with dust and other small particles of solid and liquid matter suspended in the air, are called particulate matter. Particulate matter is regulated by the federal government as one of the principal air pollutants.

What is Wood Smoke? : Wood smoke is a complex mixture of substances produced during the burning of wood. The major emissions from wood stoves are carbon monoxide, organic gases (containing carbon or derived from living organisms), particulate matter, and nitrogen oxides. Wood smoke contains many organic compounds known to cause cancer (such as benzopyrenes, dibenzanthracenes, and dibenzocarbazoles), and other toxic compounds (such as aldehydes, phenols, or cresols). The particulate fraction is composed of solid or liquid organic compounds, carbon char (elemental or soot carbon – similar to charcoal), and inorganic ash.

Why is Wood Smoke A Problem? The particles in wood smoke are too small to be filtered by the nose and upper respiratory system, so they wind up deep in the lungs. They can remain there for months causing structural damage and chemical changes. Poisonous and cancercausing chemicals often enter the lungs by adhering to tiny particulate matter (such as wood smoke particles).

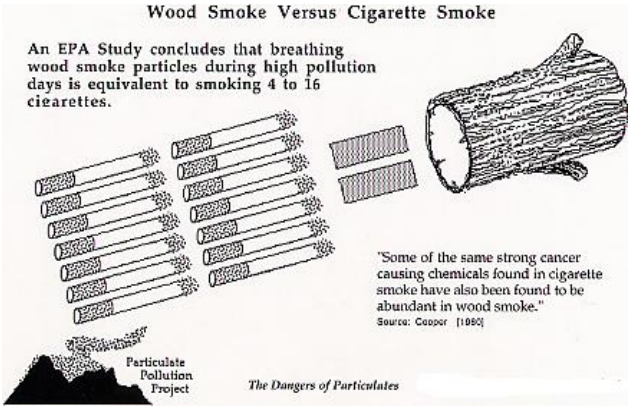
These tiny particles are emitted in neighborhoods, both indoors and out, where people spend most of their time.

Unfortunately, wood smoke is not only in the outdoor air we breathe. The particulate matter in wood smoke leaving chimneys is so small that it is not stopped by closed doors and windows, and often seeps into neighbors' houses. Even more smoke is sometimes released inside homes which heat with wood.

General Effects of Wood Smoke : Wood smoke exposure causes a decrease in lung function and an increase in the severity of existing lung disease with increases in smoke concentration or exposure time. It also aggravates heart conditions and carbon monoxide (a component of wood smoke) causes heart pain. The occurrence of respiratory illness in children has been shown to increase with increased exposure to wood smoke. This includes lower respiratory infections such as acute pneumonia, or bronchiolitis, which are major causes of disease and death in young children.20 Wood smoke aggravates asthma, emphysema, pneumonia, and bronchitis. It irritates the eyes and triggers headaches and allergies. Long-term exposure may lead to emphysema, chronic bronchitis, arteriosclerosis, and nasal, throat, lung

blood, and lymph system cancers (based on animal studies

Wood Smoke And Cancer: The cancer threat from air



pollution is a serious public health concern. Most of the wood smoke cancer research before 1985 focused on identifying the components of soot or the particulate portion of wood smoke, including carcinogens such as benzo(a)pyrene, best known from tobacco smoke research. The first known human carcinogens were from coal tars and chimney soot. The particle or soot component of air pollution has been clearly implicated as a human carcinogen from studies of human cancer victims.

This research found motor vehicles and wood stoves to be the major sources of cancer risk from particulate air pollution in all the urban airsheds studied. Human cancer risks have now been estimated for lifetime exposure to diesel vehicle, leaded and catalyst-equipped gas vehicle, wood stove, cigarette smoke, coke oven (coal), and roofing tar emissions. EPA researchers suggest that the lifetime cancer risk from wood stove emissions may be 12 times greater than the lifetime cancer risk from exposure to an equal amount of cigarette smoke. We must keep in mind that this is not actual cancer risk, but rather an estimate based on bacteria and animal studies comparing the potency of wood smoke to cigarette smoke and other better documented carcinogens. The lifetime human cancer risk estimates from exposure to wood smoke and motor vehicle emissions are theoretical based on such comparative potency tests.

Wood Smoke is More Damaging than Tobacco Smoke: It is here pertinent to cite smoke related death and disease:-

1. Wood Smoke Causes Significant DNA Damage
   - **a.** EPA picture simulating how Polycyclic Aromatic Hydrocarbons, (PAH) adhere to DNA (see the white patch).
2. Coal Smoke Causes Genetic Mutation
3. Asthma
4. Food cooked over wood can cause immediate sensitivity reactions in allergic individuals.
5. Air Pollution contributes to preventable illness and death.
   - **a.** Reactive Airway Disease (RADS)
6. Cancer - Wood smoke may raise lung cancer risk,
7. Wood stoves linked to Mouth Cancer
8. Wood Stoves linked to Pet Cancer

Contagious Diseases that can be caused by smoke are =

1. *Wood Smoke exposure is a risk factor for Meningococcal Meningitis.*

2. *"Exposure to smoke from cooking fires or close contact with a case puts people at risk of contracting meningococcal meningitis. "*

3. *Heart Disease*

- ***a.*** *Heart Impact*
- ***b.*** *Heart attacks are linked to smoke particles.*
- ***c.*** *Heart Myocardial Infarction*
- ➢ *Effects of Concentrated Ambient Particles on the Cardiac and Pulmonary Systems of Dogs.*

4. *High Blood Pressure linked to fine particulate exposure.: Fine smoke particles (PM10) may increase stroke risk. American Heart Association: 2003-10-10*

Immune Disease: Wood smoke may be a risk factor for Sarcoidosis.

Joint Disease

1. *Lung Disease*

2. *Pollution Causes Lung Changes in Children, Associated Press, Chicago Nov. 29, 2001*

3. *Effects of Subchronic Exposure to Wood Smoke on the Respiratory Tract of Rats*

4. *Air Pollution Causes Lung Disease In School-Age Children*

5. *Children Inhale Higher Percentage Of Pollution, New Research Shows*

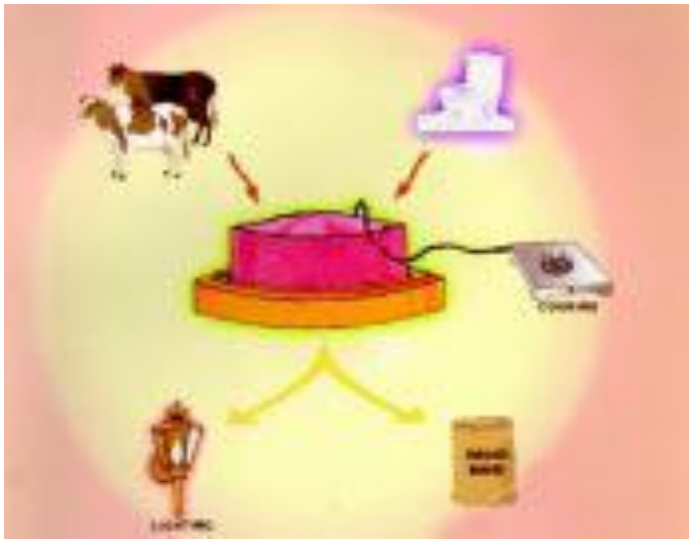
6. *Lungs Develop Better In Kids Who Move Away From Pollution*

7. *University of Massachusetts: Lowell Report on Childhood Cancers*

8. *Asthma*

i. Ear Disease (Otitis Media)
ii. Eyes: Wood Smoke Damage to the Eyes: Cataracts
iii. Children Short Term and Long Term Health Effects From Wood Smoke.
iv. Bio Fuels Linked With Lower Birth Weight.
v. Smog Hurts Boys and Girls Differently
vi. Pollution Causes Lung Changes in Children, Associated Press, Chicago Nov. 29, 2001
vii. Lead and Delinquency
viii. Mental Retardation from Polycyclic Aromatic Hydrocarbon exposure in the womb.
ix. SIDS: Sudden Infant Death Syndrome
x. *Skin: Yushchenko Dioxin Poisoning*
xi. Smoke exposure causes thinner skin.wrinkles.htm
xii. Burn Injury caused by open burning.

One of the Best Answers to Health protection is to adopt Biogas Technology !



Biogas is a clean fuel produced through anaerobic digestion of a variety of organic wastes: animal, agricultural, domestic, and industrial.

Biogas is a clean fuel produced through anaerobic digestion of several organic wastes like agricultural, animal, domestic and industrial. Made from organic waste matter after it is decomposed, biogas is tremendously used as fuel. A relatively clean burning, colorless, and odorless gas, biogas is composed of methane (CH_4), carbon dioxide (CO_2), and some traces of nitrogen, ammonia (NH_3), sulfur dioxide (SO_2), hydrogen sulfide (H_2S), and hydrogen, depending on the feedstock used.

Biogas consists of methane, carbon dioxide, and traces of other gases such as hydrogen, carbon monoxide, nitrogen, oxygen, and hydrogen sulphide. The gas mixture is saturated with water vapor and may contain dust particles. The relative percentages of these gases depend on the quality of feed material and the process conditions. The percentage of methane in the gas determines its calorific value as the other constituents do not contribute to the energy content. The methane content of biogas is appreciably high, at 60%. This provides a calorific value high enough to find use in many energy applications, including power generation. Table 1 provides a comparison of the calorific values of various fuels.

Types of Biogas Plants

Comparison of the calorific values of various fuels	
Fuel	*Calorific value* (approximate)
Natural gas	8600 kcal per m3
Liquefied petroleum gas	10 800 kcal per kg
Kerosene	10 300 kcal per kg
Diesel	10 700 kcal per kg
Biogas	5000 kcal per m3

1)Fixed-dome type

2) Floating drum type

3)Bag type

Application Areas

- **Cooking:** One of the most common use of biogas is for cooking in a specially designed burner. A biogas plant with a capacity of of 2 m3 is enough for providing cooking fuel to a family of four to five.
- **Lighting:** Another use of biogas is lighting gas lamps. The biogas required to power a 100 candle lamp (60 W) is 0.13 m3 per hour.

- **Power generation:** This gas is also used to operate a dual-fuel engine. It can replace up to 75% of the diesel.

Benefits of Biogas Plants

- A non-polluting and renewable source of energy is created in biogas plants.
- It is an excellent way of energy conversion.
- Biogas plants produce enriched organic manure. This can be used as fertilizers.
- Biogas as a gas provides improvement in the environment, and sanitation and hygiene.
- The biogas plants provide a source for decentralized power generation.
- Most important of all, such plants provide employment generation in the rural areas.

Community biogas plants: To overcome the above limitations, the government has set up has set up certain schemes and subsidized loan for the rural community. Few agencies help the farmers in the following ways:

- Provide loans
- Provide subsidies on purchase of materials
- Provide technical know how and training.

Some basic information-

Availability of animal wastes	
Cow	10 kg/day
Calf	5 kg/day
Buffalo	15 kg/day
Pig	2 kg/day
Gas production per kg of wet dung	0.04 m3/day

Biogas requirement for various applications	
For cooking	0.3–0.4 m3 per day per person
For lighting	0.12 m3 per hour per 100 candle power light
For electricity generation through dual-fuel engine	0.6 m3 per kWh
For electricity generation through 100% biogas engine	0.75 m3 per kWh

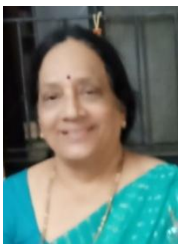
"Energy is an important input for economic development. Since exhaustible energy sources in the country are limited, there is an urgent need to focus attention on development of renewable energy sources and use of energy efficient technologies. The Bio Gas Plant will help affordable fuel in rural area of the country."

Proposed Village Plan :

A conceptual plan for a village is proposed here to have a community Biogas plant, thus, reducing the cost of an individual plant & to encourage Community Living. The ladies from the village can cook here, can look after their families, enjoy cultural activities, and also ,execute practical implementation of " Public Private Participation" theory. This will generate job opportunities and shall also save money, which can be utilized for other common utilities like Education, Health, Sport facilities; and also, upgradation of thr villagers in general.

This project is designed for Economic Bio Gas Plant for villages in India as well as for any village in the world. Presently I am working on Biogas Plant. Proposal will uplift the conditions of villages and will save the life of women in the World; this will also promote the use of non-conventional energy to save the environment.

The ideal village plan is designed to execute the plan in small villages which will encourage the community living and will also generate job opportunities in villages. The proposal is such designed so that it can be implemented in any part of the world where such condition prevails.



Aurthor is a retired chief architect planner,from Housing and Envoronment Deptt, Govt. Ofg Madhya Pradesh. She has specialised in urban management (U.K.). Her hobbies include reading, writing and thinking on issues of social welfare. Despite being a high profile professional her family was first love.

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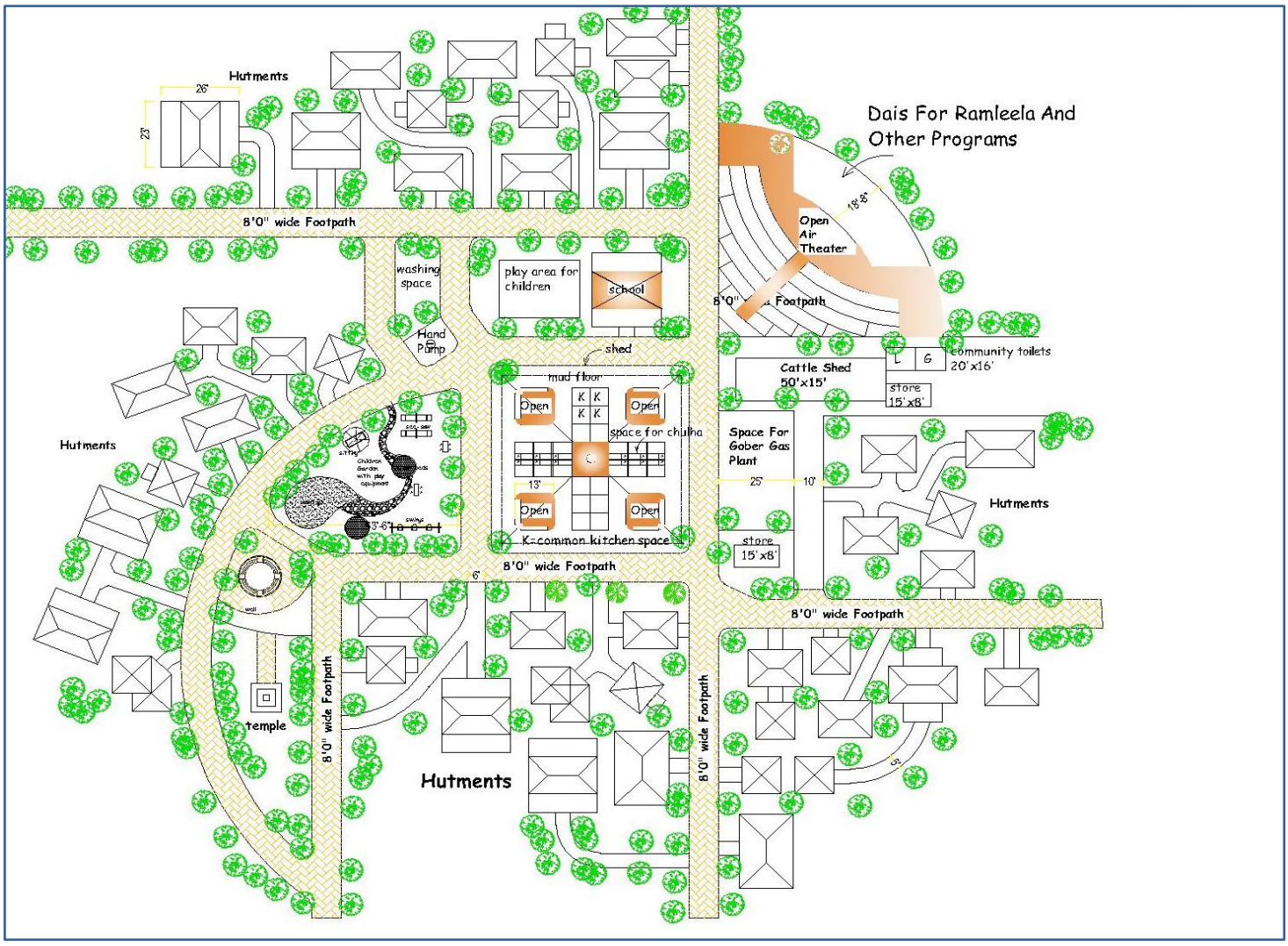
PROPOSED COMMUNITY DEVELOPMENT PLAN FOR VILLAGE



—00—

Modern cynics and skeptics... see no harm in paying those
to whom they entrust the minds of their children
a smaller wage than is paid to those to whom
they entrust the care of their plumbing.

- John F. Kennedy

—00—

नई दिशाएं दी हैं ....

नई दिशाएं दी हैं उनको
और नया आकाश दिया है।
नये-नये खोले गवाक्ष हैं
नित्य नया विकास दिया है।

आज करें नभ में विहार वे
ऐसा नव विश्वास दिया है।
जगमग कर दे जो जीवन को,
शाश्वत वह प्रकाश दिया है।

नवांकुरों को विकसित करके
आशा का मधुमास दिया है।

-----×-----

बापू -अहिंसा था जिसका हथियार ...

बापू -अहिंसा था जिसका हथियार
सत्य लिया जिसने आधार
जन-जन की जीवन शैली को
किया था जिसने अंगीकार
किया विदेशी सत्ता पर भी
सज्जनता से भर अधिकार
मौन निमंत्रण देकर सब को
आज़ादी की करी गुहार
राष्ट्रपिता वह जब कहलाया
तभी गया परलोक सिधार
आजीवन हम याद रखेंगे
उसका किया हुआ उपकार।

मृणालिनी घुळे

कवियत्री एक सामाजिक चिंतक एवं विचारक हैं | आपकी कविताएँ वर्तमान पर्यवेक्ष्य में बुद्धि-जीवियों को उनके सामाजिक उत्तरदायित्व के प्रति उन्हें चिंतन के लिए प्रेरित करती हैं | आपकी लेखनी प्रादेशिक एवं राष्ट्रीय स्तर पर प्रकाशित है।
ई-मेल: mrinalinighule46@gmail.com

बढ़ाते गए कदम ...

बढ़ाते गए कदम,बनती गई राहें
उतार चढ़ाव की लहरों ने,
तैरना हमको सिखाया है।
दृढ़ निश्चय और पक्के इरादे ने,
जीना हमको सिखाया है।

जितनी आयी मुश्किलें,
उतना ही मजबूत स्वयं को पाया है।
न डिगा सकी कोई भी विपदा,
सशक्त इरादे को,
अपितु नजर से नजर मिलाकर,
हर मुश्किल को आसां बनाया है।

हर क्षेत्र में,हर प्राणी है सैनिक
सबने अपना मोर्चा स्वयं संभाला है ।
डिगा न सके कोई अपने लक्ष्य से
यही विश्वास हृदय में जगाया है।

अमन और चैन रहे हर क्षेत्र में
यह संदेश सब तक पहुंचाया है।

डॉ. संगीता पाहुजा

कवियत्री आयुर्वेदिक चिकित्सक हैं | आपने B.A.M.S. की उपाधि M.D. University, रोहतक से प्राप्त की | आपके दिल्ली एवं नॉएडा में परामर्श केंद्र है | धार्मिक, नारी एवं समाज उत्थान कार्यों में आपकी विशेष रूचि है |
संपर्क: मो. क्र.- 9953967901,
ई-मेल : sangeeta.pahuja3@gmail.com

—00—

ज्ञान की गाड़ी

निरंजन धुलेकर

मैं था एक खाली मटका,
बिन आधार टूटा लटका,
कभी उधर इधर लुढ़का,
जाता कहाँ रहा भटकता !

प्यास मेरी ये बहुत बड़ी थी,
बचपन ये अनजान घड़ी थी,
भरा बुरा मुझे पता नहीं था,
मन मे उलझन शुरू हुई थी ।

सामने मेरे भाग्य को बदलने
ज्ञान पात्र महादान खड़ा था,
भारी बस्ता मुँह बाएं तगड़ा,
मैं हतप्रद , अज्ञान खड़ा था !

महादानी ज्ञानी खड़े सामने,
मेरे हर प्रश्न का उत्तर थे वो,
बार बार हर बात के मायने,
मैं सदा प्रश्न मेरे उत्तर थे वो !

कक्षा मैं जब जा कर बैठता,
ब्लैक बोर्ड अक्षर डस्टर था,
कॉपी पेंसिल रबर को घिसता,
गुरु देव का गुरु मंत्र मैं रटता ।

सदियों की परिपाटी अपनी
टीचर की बातें सही खड़ी हैं,
मैडम की सीख मन मेँ रखली,
गुरु बिन मेरी गाड़ी न चलनी ।

—00—

पसीने की खुशबू

- **ज्ञान विज्ञान सरिता**

तुम कहते हो दूर रहो, वह कहता है खैर करो,
क्या गुनाह जो मैंने किया, यह दुश्वार मुझे मिला।

तुम रहते हो ए सी में , वह रहता है कूलर में ,
कड़ी धूप में जीता हूँ, खून-पसीना तरता हूँ।

तुम्हें मिला है अवसर वो, उन्हें मिली विरासत जो,
मैं कटझड़ में पलता हूँ, धूल-धक्कड़ में बढ़ता हूँ।

परफ्यूम तुम्हें सुहाता है, डीओ बहुत ही भाता है,
मत घुटने दो मेरा दम, लथ-पथ होकर उबरे हम।

तिरस्कार जो हमने सहा, पर करे भला यह रही दुआ,
नहीं बसाता है यह सीना, इत्र क्या है ? यह हमने जाना।

(इस रचना की प्रेरणा औपचारिक शिक्षा से वंचित बच्चों का शैक्षणिक मार्ग-दर्शन के दौरान हुई)

—00—

घबड़ाओ मत....

घबड़ाओ मत, मेरा निशाना तुम नहीं हो,
इतने छोटे लक्ष्य मैं नहीं रखता।

मेरा मुकाबला असल में मुझसे है,
कोई कमजोर प्रतिद्वंदी मैं नहीं चुनता।

जो सपने पूरे होने पर भी हों नाकाफी,
ऐसे बेवजह ख्वाब मैं नहीँ बुनता।

मुझे तुम्हें कुछ बताने की नहीं कोई आरज़ू,
वैसे भी यहाँ किसी की कोई नहीं सुनता।

अक्सर बातें करता हूँ अपने आप से,
क्यूँ कोई किसी का नहीं होता।

तसल्ली देता हूं ये समझकर अपने को,
मैं ही कौन सा किसी का कभी होता।

बड़ा ही खुशगवार है ये साफगोई,
अब किसी का कोई आसरा नहीं होता।

अपने पे रखता हूँ भरोसा अब तो,
दूसरे के कन्धों पे जनाजा नहीं रखता।

अपराधी हम सब हैं....

मुकेश आनंद

अपराधी हम सब हैं, जो पीड़िता के मौत पर मौन,
अन्याय देख चुप रह गए, तो तेरी बारी बोलेगा कौन?

हो रहा बार बार प्रहार, बेटी बहन की लज्जा का,
अपराधी हैं ज्यादातर जो पाते सरकारी संरक्षण।

किस पीड़ा से गुजरा होगा वो परिवार और माता का मन,
सुना नहीं क्या तुमने उस पीड़ित मन का करुण क्रंदन?

क्यूँ चुप हो, दल का कोई फरमान, या निजी स्वार्थ का बंधन?
सीता या द्रौपदी के इसी धर्म का किया तुमने अवलंबन?

उठो जागो और बरस उठो ज्वालामुखी बन,
हो सत्ता मजबूर और कंपित हो अपराधी मन।

सत्ता के नर पिशाच ही करते ऐसा घृणित कर्म हरदम।
रावण और दुःशासन यूँ ही नहीं बनाए पुरखों ने नराधम।

जिनका जयकारा लगाते, थकते नहीं कहते अविराम,
एक बार बलात्कार के खिलाफ भी बोलो जय श्री राम।

कवि एक अधिवक्ता एवं सामाजिक कार्यकर्ता हैं| सामाजिक विषयों पर पाठन, चिंतन –मनन, लेखन एवं उन पर कार्यान्वन उनकी अभिरुचि है |

E-mail ID: lawexcel@gmail.com

—00—

Nothing is more important than education,
because nowhere are our stakes higher;
our future depends on the quality of education of our children today.
- Arnold Schwarzenegger

—00—

ये आसमां है तेरा ....

श्रीमती अनुश्री गुप्ता

(पुत्री-रत्न प्राप्ति पर एक माँ के भाव)

ये आसमां है तेरा, जमीं तेरा गर्व हैं.
मेरा हाथ, तेरी उंगलियों का तर्क है.

सीखा है जो मैने मां से, आज तेरा वो सच है.
मिली मुझे जो सशक्त सृजन, वो विरासत है.

शब्दों के अर्थ, और अर्थों के शब्द हैं.
तुझे यू समझता देख नयन स्तब्ध हैं.

उस उड़ान की बारीकियों से गुफ्तगू करवा.
सच तो है सपनों की हकीक़त है बेपरवाह

अब तुझ पर बस तेरा ही राज है
जमीं है तेरी, आसमां तेरा ताज है..

कवियत्री एक बहुराष्ट्रीय कंपनी में दस वर्ष के मानव-संसाधन व्यावसायिक होने के पश्चात् माँ की भूमिका को सर्वोत्तम एवं सर्वाधिक पुरुस्कृत कार्य मानती हैं।

ई -मेल : anushreegupta01@gmail.com

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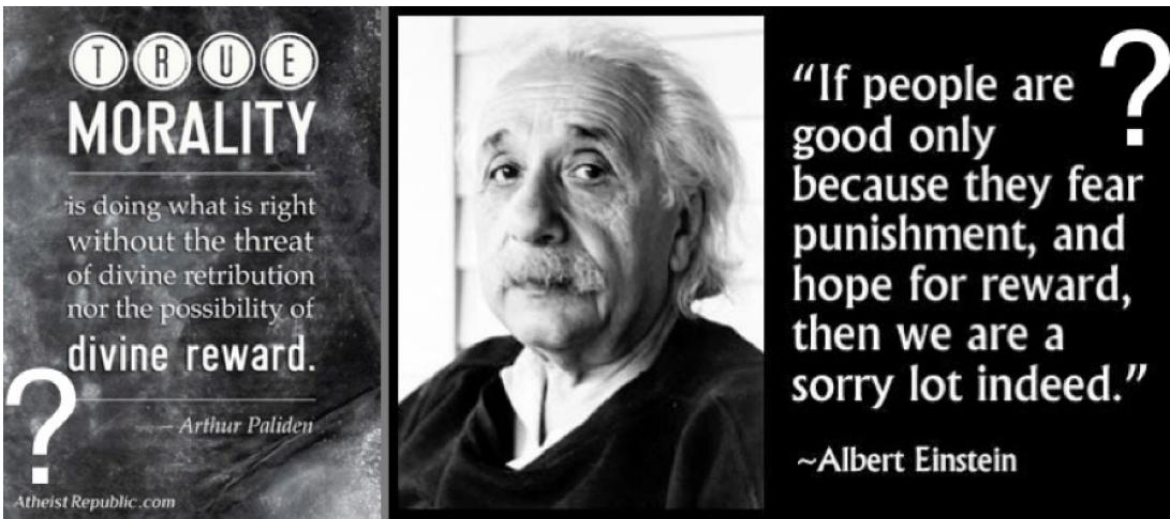

Answers: Science Quiz- September'19

Kumud Bala

1. (B)	2. (D)	3. (C)	4. (C)	5. (D)	6. (C)	7. (A)	8. (D)	9. (A)	10. (A)
11. (C)	12. (A)	13. (A)	14. (D)	15. (C)	16. (C)	17. (D)	18. (D)	19. (D)	20. (C)
21. (A)	22. (A)	23. (A)	24. (A)	25. (D)	-				

—00—

ANSWER: CROSSWORD PUZZLE September'19
(Independence Days of The World Countries)

Prof. S.B. Dhar

													1I							
										2C	H	I	N	A						
													D							
										3U			O							
										N			N			4C				5P
6R	U	S	7S	I	A			8S	W	I	T	Z	E	R	L	A	N	D		A
			R							T			S			N				K
		9S	I	N	G	A	P	O	R	E			I			A				I
			L							D			A			D				S
		10B	A	N	G	L	A	D	E	S	H					A				T
			N							T										A
			K							11A	F	G	H	A	N	I	S	T	A	N
	12F	R	A	N	C	E				T										
										E										
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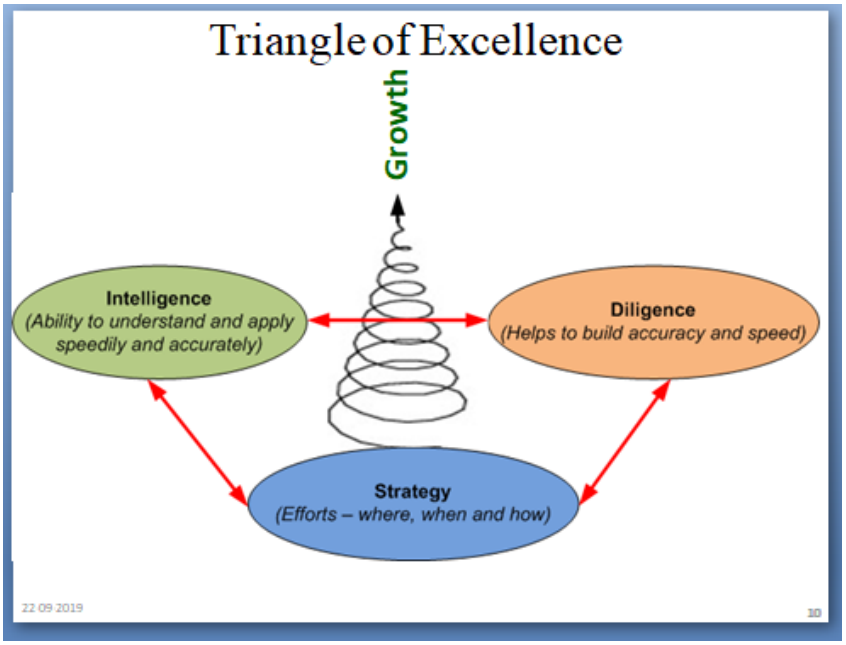



CELEBRATING RITUALS

GETTING ECOFRIENDLY

EDUCATION IS MULTI DIMENSIONAL WITH AN OPEN MIND

ACDEMICS IS ONLY A PART OF IT, SCHOOL IS BEST NURSERY FOR IT

CONFINING EDUCATION TO COURSE IS FORCING BLINDERS ON STUDENTS



Ramakrishna Mission School, Sithanagram, Distt. Guntur, Andhra Pradesh

Do You Know What 'Article 35A' Was?

K.S.S.Praneeth Kumar

What was article 35A? Why is there controversy? These are the questions among the public. Let us know briefly about this.

Article 35A of the Constitution of India empowered the Jammu & Kashmir legislature to define the state's 'Permanent residents' and their special rights and privileges. It was added to our constitution through a presidential order of 1954 with the then Jammu & Kashmir government's concurrence. It was a historical pact between Kashmir and India allowing the state a special status in India.

The features of Article 35A:

1. It authorized the state's legislature to define the permanent residents of the state and provides them with notable benefits exclusive only to them.

2. It checked non-permanent residents from permanently settling in the state, buying immovable property, acquiring land, applying for government jobs, any kind of scholarships and aids and other public welfare projects.

3. It was also refers to as the Permanent Residents' law, which bars a woman (from this state) from any property rights if she marries a person from outside the state.

4. It also extended to the children of such women as they did not have any succession rights over the property.

This has been a controversy for a long time.

Author is a student of class, IXth, Ramakrishna Missionm High School, Sitanagaram, A.P.He is attends IOMS held at school.

—00—

WOMEN EMPOWERMENT

M. Bala Ramyasri

Women empowerment is a process in which women elaborate and recreate what is that they can be, do and accomplish in a circumstance that they previously were denied. Empowerment can be defined in many ways. However, when talking about women's empowerment, empowerment means accepting and allowing women who are on the outside of the decision- making process into it. This puts a strong emphasis on participation in political structures and formal decision-making and in the economic sphere on the ability to obtain an income that enables participation in economic decision-making. Empowerment is the process that creates power in individuals over their own lives, society and in their communities. People are empowered when they are able to access the opportunities available to them without limitations and restrictions such as in education, profession and lifestyle. Feeling entitled to make your own decisions creates a sense of empowerment. Empowerment includes the action of raising the status of women through education, raising awareness, literacy and training. Women's empowerment is all about equipping and allowing women to make life-determining decisions through the different problems in the society. Lastly, empowerment and disempowerment is relative to other at a previous time, therefore, empowerment is process not a product.

Author is a student of class, IXth, Ramakrishna Missionm High School, Sitanagaram, A.P.He is attends IOMS held at school

—00—

YOGA FOR TODAY

A.Kruthika

In modern yoga, there is the idea of fitness and a more scientific knowledge of the anatomy. To say what is yoga in the absolute way is almost impossible today. Patanjali's *Yoga Shastra* defined it clearly as meditation, *Chitta vritti nirodha*, cessation of mental activity and as a method of achieving liberation. *The Bhagavad Githa*, too, defines yoga clearly and it teaches different types of yoga. In the Hatha Yoga texts, the practice of physical techniques is aimed at achieving Raja Yoga – *Samadhi* leading to liberation.

In a modern situation, in a secular environment, it just may be a practice of postures, which can be more sophisticated. So it largely depends on the context. Along with secularization of yoga, we see its commercialization. It is now being taught in a variety of contexts, from health fitness clubs to corporate boardrooms, because now we are more aware of the benefits of yoga for managing stres

(Compiled from The Times of India)

Author is a student of class, IXth, Ramakrishna Missionm High School, Sitanagaram, A.P.He is attends IOMS held at school

—00—

P.Ganesh Kumar, student of class IXth created this art IX . He is a student at Ramakrishna Mission, Sitanagaram, A.P. He is attending IOMS at the School.

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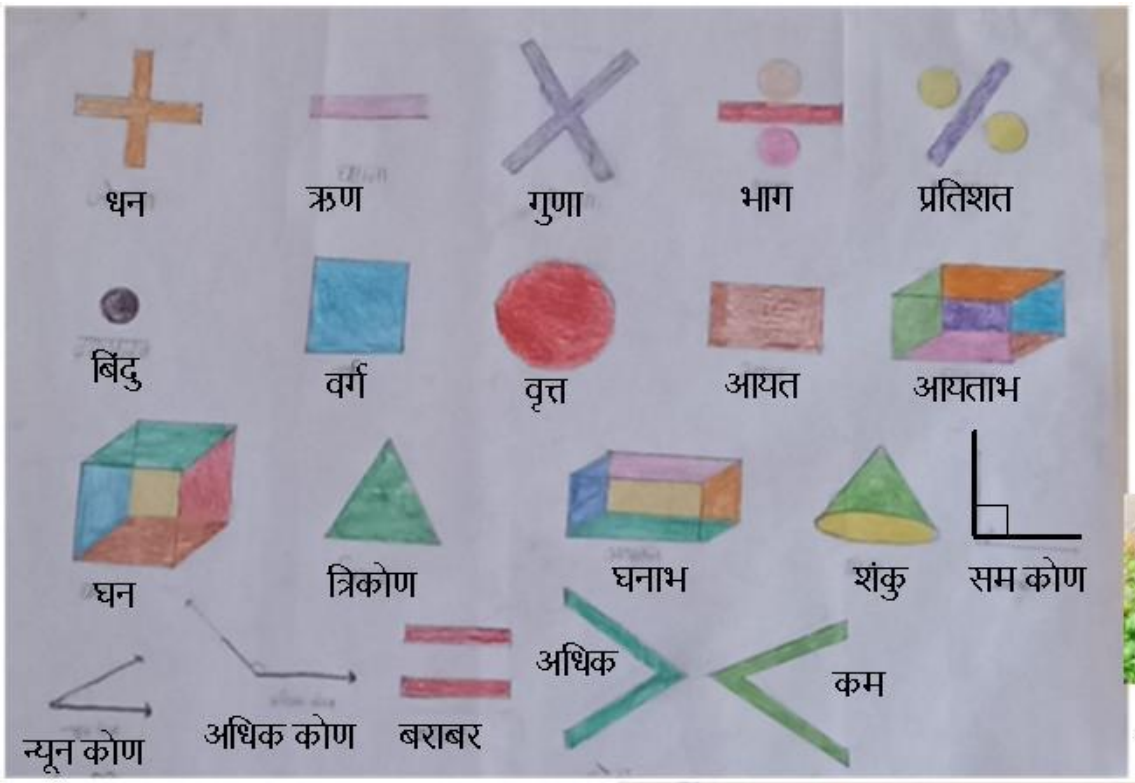

Vikas Bhati, Class 9th

Creativity at a Rural School, Govt. Higher Secondary School, Kanwan, Distt Dhar, Madhya Pradesh

Vijay Katara, Class 9th

Education - Greatest Treasure

Aayushi Rajurkar

Education is one of the greatest treasures a person can have. It is something that can never be taken or stolen from anyone and being educated it gives a different perspective on the world. Taking a view of human rights, it is very important for everyone to have access to education. It is essential that everyone has the chance to educate themselves and progress in life.

We as a society have to try and make efforts such that education reaches every single child in this country. By giving them a better chance at educating themselves, it is paving the way for future generations to also be educated and thereby improving quality of life for many. In order to provide educational needs to deprived children, monetary help is a major factor but another very important factor is that people who are willing to give their time and efforts to improve the lives of these less fortunate children. It is very important to have people who are passionate about teaching and can really make an impact on the lives of these children. Having education accessible is sometimes not enough, parents additional motivation to promote their children to go to school instead of working to support their families.

By proving extra incentives such as the school providing books, meals and uniforms etc. , it is easier or more attractive for families to send their children to school. They see in this a short term benefit for their children as well as a long term benefit. By providing education to deprived children, it gives these children the capability to stand on their own feet. In this process deprived children not only improve their own future but also can make valuable contributions to their family and in turn to the society. It will also help state and society to take out deprived children and their families from the vicious trap of poverty. Providing education to deprived children is a necessary step in moving the country as a whole on a sustainable growth.

We have umpteen examples in society today where kids from very humble background have made big in different streams of society. Example our missile-man and former President of India Dr Abdul Kalam, who came from an extremely poor and humble background rose to a height where world has known him a prominent scientist. This miracle happened only because he got a chance to get himself educated. Such inspiring examples should inspire people, the government and NGOs to create opportunities where groups of under privileged are able to hear and interact with the living examples so as to get inspired.

With higher percentage of educated new generation India will not only advance economically, technologically but it will also become a better place to live.

Author is currently pursuing her Bachelor of Dental Surgery (BDS) at the University of Gothenburg in Sweden. She is Vice President of the Dental Student Education Council and PR in charge for the Student International Association. She is avid reader and dancer.

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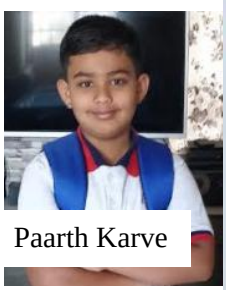

Paarth Karve

This creative artist is student of Class IVth, Pune Institute of Computer and Technology Model School, Pune. His fond of playing cricket.

It's Not Just A CLOWN
(Episode 4)

Chyanis Tiwari

Sniff!!! Uma woke up from the dream. Those dream were confusing and unpredictable. Uma is a 27-years-old girl. She has a tanned skin and black curly hair. She is tall and slim. Uma is just a normal office clerk. She has a normal life. She stays in an old apartment in New York city. She saw the time and find out that she is late for work now. She immediately called her boss.

"Now explain why aren't you at the office?" Uma's boss asked.

"I woke up late. I spend all night working on the project."

"Oh really?"

"Yes, Mrs. Heather." Uma said.

"Am I fool to you, Uma? Stop being lazy and work hard on the project, please. Or you'll be fired."

"Okay. I'll turn in the project by 10 am tomorrow. Is that ok?" Uma said in the bored voice.

"Hope you stick to your promise."

"I should get ready and go buy some coffee at the café. Then I'll finish my project."

She got ready and walked to her favorite café.

"Oh Uma! You're here. What made you come here and not to the office?" Uma's best friend, Sarah, said to Uma.

"Nah. Nothing. I just woke up late and told my boss that I worked on the project all night. And where's Josh?"

"I'm here." Josh responded.

"Oh. I didn't see you." Uma said, "By the way, I've something really strange to tell you guys."

"Go on." Sarah said.

"Last night, I had a very strange dream. I was a police officer named Nina." And then, Uma told them all the story.

"Only word- Strange." Sarah said with all the confusion in her mind.

"Isn't it?" Uma said.

"Why are you guys thinking a lot? It's just a dream, man." Josh said.

"Josh's right. You shouldn't think too much. It's just another bad dream." Sarah said.

"I'm going. I need to work on my project." Uma said before picking up her cappuccino and walked out. While she was walking to her apartment. She found a clown playing with kids and the clown looked at Uma. Well, it's just a normal crown. She was still walking to her home. She suddenly found out that someone is following her for a while. She stopped and turned back. There was nothing. Uma continued walking again. But this time she heard a big footstep. She stopped again and turned back quickly. Her eyes opened wide, but she is still in silence. A clown was staring at her.

"Creepy." She spoke, "Do you need any help?"

"*I… want to see… Death.*" The clown said with a scary shaking voice.

"Well… You can see that in the movie." Uma said with a normal voice and acted as normal as she can do.

"*I want to see REAL death…*" the clown said before stepping to Uma with a creepy wide smile.

Author is a student of grade 9 at Thailand. She likes writing stories. Most of her stories are usually about social problems because she wants that the new generation teenagers should understand the social world. She hopes that the guys will learn about the new society from this story.

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The creative artist, at Indore, is a 12th passout in First Division in Maths-Science stream. He is aspiring for admission in National Instotute of Design. His hobbies are music, reading and drawing.painting
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Growing With Concepts - Mathematics

LET'S DO SOME PROBLEMS IN MATHEMATICS-XII

Prof. SB Dhar

Oxford University is a world-leading centre of learning, teaching and research. It is the oldest university in the English-speaking world. It attracts the best students, from every kind of background.

In this article, some questions are discussed for our readers to understand the types and level of the questions that are asked in the Mathematics Test for those who apply for the admission in degree courses.

1. ***Evaluate***: $\int_{\sqrt[3]{\log 3}}^{\sqrt[3]{\log 4}} \frac{x^2 \sin x^3}{\sin x^3 + \sin(\log 12 - x^3)} dx$

Solution:

We know that

$$\int_a^b \frac{f(x)}{f(a+b-x)+f(x)} dx = \frac{b-a}{2}$$

Let

$u = x^3 \Rightarrow du = 3x^2 dx$

The integral becomes:

$$\frac{1}{3}\int_{\log 3}^{\log 4} \frac{\sin u}{\sin u + \sin(\log 12 - u)} du$$

Since, log(3) + log(4) = log(3×4) = log(12)

Hence, the above integral once fits the pattern and we can apply the formula.

The value of the integral becomes equal to $\frac{1}{3}\left(\frac{b-a}{2}\right) = \frac{1}{3}\left(\frac{\log 4 - \log 3}{2}\right) = \frac{1}{6}\log\left(\frac{4}{3}\right)$

2. ***Evaluate***: $\int_0^1 (-1)^x dx$

Solution:

We shall use principal value of $(-1)^x$.

We know *Euler's formula*:

$e^{i\theta} = \cos\theta + i\sin\theta$

This will be equal to -1 for many values of θ, *i.e.*,

$-1 = e^{\pm\pi i} = e^{\pm 3\pi i} = e^{\pm 5\pi i}$ ...

We shall take the principal value

$-1 = e^{\pi i}$

For x > 0,

$(-1)^x = \left(e^{\pi i}\right)^x = e^{\pi i x}$

Therefore,

$$\int_0^1 (-1)^x dx = \int_0^1 e^{\pi i x} dx = \left(\frac{e^{\pi i x}}{\pi i}\right)_0^1 = \frac{e^{\pi i}}{\pi i} - \frac{1}{\pi i}$$

3. ***Evaluate:*** $(-1)^{\pi}$

Solution: We know $e^{i\theta} = \cos\theta + i\sin\theta$

$\Rightarrow e^{i\pi} = \cos\pi + i\sin\pi = -1$

$\Rightarrow (-1)^{\pi} = \left(e^{i\pi}\right)^{\pi} = e^{i\pi^2} = \cos(\pi^2) + i\sin(\pi^2)$

$\approx -0.903 - (0.430)i$

4. ***Let $f(x) = (x+a)^n$, where a is a real number and n is a positive whole number, and n ≥ 2. If y = f(x) and y = f'(x) are plotted on the same axes, the number of intersections between f(x) and f'(x) will***

(a) always be odd
(b) always be even
(c) depend on *a* but not *n*
(d) depend on *n* but not *a*
(e) depend on both *n* and *a*

Solution: We know that, if *f(x)* is an even function then *f'(x)* will be an odd function and vice versa. *f(x)* and *f'(x)* will cross the x-axis at (*-a,0*) and will have one further intersection when *y* and *x* are greater than 0. Hence the answer is (b).

5. ***Which of the following are true for all real values of x? All arguments are in radians***.

I: $\sin\left(\frac{\pi}{2} + x\right) = \cos\left(\frac{\pi}{2} - x\right)$

II: $2 + 2\sin(x) - \cos^2(x) \geq 0$

III: $\sin\left(x + \frac{3\pi}{2}\right) = \cos(\pi - x)$

IV: $\sin(x)\cos(x) \leq \frac{1}{4}$

(a) I and II
(b) I and III
(c) II and III
(d) III and IV
(e) II and IV

Solution:

I is false when *x=0*.

II can be arranged as $(\sin x + 1)^2 \geq 0$, using $\sin^2 x + \cos^2 x = 1$, and hence is true.

III translates the sin(x) graph by $\frac{3\pi}{2}$ along the x-axis, giving cos(x), and cos(π-x) translates the cos(x)

graph by π and reflects in the x-axis, giving cos (x) and hence is true.
The correct answer is (c).

6. ***A sequence (a_n) has first term a_1=1, and subsequent terms defined by a_{n+1}=l a_n for n ≥ 1. What is the product of the first 15 terms of the sequence?***

Solution: The sequcence is $a_1 = 1, a_2 = l, a_3 = l^2, a_4 = l^3, \ldots$ It is geometric series.
The product of the first 15 terms is equal to
$l^{1+2+3+\cdots+14} = l^{\frac{14\times15}{2}} = l^{105}$

7. ***The origin lies inside the circle with equation x^2+ax+y^2+by=c precisely when***
(a) *c>0*
(b) $a^2+b^2 > c$
(c) $a^2+b^2 < c$
(d) $a^2+b^2 > 4c$
(e) $a^2+b^2 < 4c$
Solution:
We can rewrite the equation as
$$\left(x+\frac{a}{2}\right)^2+\left(y+\frac{a}{2}\right)^2 = c+\frac{a}{4}+\frac{b}{4}$$
For the circle to contain the origin, the distance from the centre to the origin must be less than the radius, hence $\frac{a}{4}+\frac{b}{4} < c+\frac{a}{4}+\frac{b}{4}$
The answer is (a)

8. ***Let f(x)=2x^3-kx^2+2x-k. For what values of the real number k does the graph y=f(x) have two distinct real stationary points?***
(a) $-2\sqrt{3} < k < 2\sqrt{3}$
(b) $k < -2\sqrt{3}$ *or* $2\sqrt{3} < k$
(c) $k < -\sqrt{21}-3$ *or* $\sqrt{21}-3 < k$
(d) $-\sqrt{21}-3 < k < \sqrt{21}-3$
(e) all values of k

Solution: To have two distinct real stationary points, we require $4k^2$-48 to be positive. Rearranging gives $k > \sqrt{12}$ *or* $k < -\sqrt{12}$. Hence the answer is (b)

9. ***The minimum value achieved by the function $f(x) = 9cos^4x - 12cos^2x + 7$ equals***
(a) 3 (b) 4 (c) 5 (d) 6 (e)7

Solution: Put $t = cos^2x$
$f(x) = 9t^2 - 12t + 7 = (3t-2)^2 + 3$
This is minimum when $3t-2=0 \Rightarrow t = \frac{2}{3}$
Since $t = cos^2x$ and $0 \le cos^2x \le 1$.
Answer (a)

10. ***Let a and b be positive integers such that a + b = 20. What is the maximum value that a^2b can take?***
(a)1000 (b)1152 (c)1176
(d)1183 (e)1196

Solution:
Rearranging so that $b=20-a$ gives $a^2(20-a)$.
Differentiating and setting equal to zero to find the maximum gives $a = \frac{40}{3}$. The closest integer to this is 13 and so $b=7$.
The answer is (d)

11. ***The function $y = e^{kx}$ satisfies the equation $\left(\frac{d^2y}{dx^2}+\frac{dy}{dx}\right)\left(\frac{dy}{dx}-y\right) = y\frac{dy}{dx}$ for***
(a) no values of k
(b) exactly one value of k
(c) exactly two values of k
(d) exactly three values of k
(e) infinitely many distinct values of k

Solution:
$$\left(\frac{d^2y}{dx^2}+\frac{dy}{dx}\right)\left(\frac{dy}{dx}-y\right) = y\frac{dy}{dx}$$
$\Rightarrow (k^2e^{kx} + ke^{kx})(ke^{kx} - e^{kx}) = ke^{2kx}$
$\Rightarrow e^{2kx}k(k^2-2) = 0$
$\Rightarrow k(k^2-2) = 0$
$\Rightarrow k = 0$ *or* $k = \pm\sqrt{2}$
Answer is (d)

12. ***If $f(x) = x^2 - 5x + 7$, what are the coordinates of the minimum of $y = f(x-2)$?***
(a) $\left(\frac{5}{3},\frac{3}{4}\right)$
(b) $\left(\frac{9}{2},\frac{3}{4}\right)$
(c) $\left(\frac{1}{2},\frac{3}{4}\right)$
(d) $\left(\frac{9}{2},\frac{-5}{4}\right)$
(e) $\left(\frac{5}{2},\frac{-5}{4}\right)$

Solution: Rewrite the given equation as below:
$y = f(x) = x^2 - 5x + 7$
$\Rightarrow y' = f(x-2) = (x-2)^2 - 5(x-2) + 7$

$\Rightarrow y' = (x)^2 - 9(x) + 21$

$\Rightarrow y' = \left(x - \frac{9}{2}\right)^2 + \frac{3}{4}$

y' is minimum for $x = \frac{9}{2}$. Hence $y' = \frac{3}{4}$

Answer is (b)

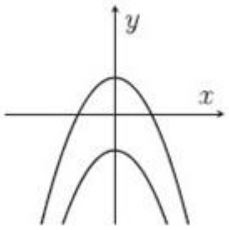
13. ***Draw the rough sketch the curve represented by*** $(x^8 + 4yx^6 + 6y^2x^4 + 4y^3x^2 + y^4)^2 = 1$

The given expression can be written as $(x^2+y)^8=1$.

The solution of this equations are $y=1-x^2$ or $y=-1-x^2$.

These solutions represent a pair of parabolas, and y is negative for large x in both the cases.

So the following figure represents the solution:



14. ***Evaluate***: $\sum_{n=2}^{\infty}\sum_{k=2}^{\infty}\frac{1}{k^n.k!}$

Solution: Rewrite the given sum as

$\sum_{n=2}^{\infty}\sum_{k=2}^{\infty}\frac{1}{k^n.k!} = \sum_{k=2}^{\infty}\sum_{n=2}^{\infty}\frac{1}{k^n.k!}$

$= \sum_{k=2}^{\infty}\left(\frac{1}{k^2k!} + \frac{1}{k^3k!} + \frac{1}{k^4k!} + \cdots.\infty\right)$

$= \sum_{k=2}^{\infty}\frac{1}{k!}\left(\frac{\frac{1}{k^2}}{1-\frac{1}{k}}\right) = \sum_{k=2}^{\infty}\frac{1}{k!}\left(\frac{1}{k(k-1)}\right) = \sum_{k=2}^{\infty}\frac{1}{k!}\left(\frac{1}{k-1} - \right.$

$\left.1k = 12!1 - 12 + 13!12 - 13 + 14!13 - 14 + \ldots.\right.$

$= \frac{1}{2!} - \frac{1}{2.2!} + \frac{1}{2.3!} - \frac{1}{3.3!} + \frac{1}{3.4!} - \frac{1}{4.4!} + \cdots$

$= \frac{1}{2!} - \left(\frac{1}{2.2!} - \frac{1}{2.3!}\right) - \left(\frac{1}{3.3!} - \frac{1}{3.4!}\right) - \cdots$

$= \frac{1}{2!} - \frac{1}{3!} - \frac{1}{4!} - \cdots$

We know that

$e = 1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \frac{1}{4!} + \cdots.$

Therefore,

$e - 1 - \frac{1}{1!} - \frac{1}{2!} = \frac{1}{3!} + \frac{1}{4!} + \cdots.$

Putting the value of $\frac{1}{3!} + \frac{1}{4!} + \cdots$

We get,

$\frac{1}{2!} - \frac{1}{3!} - \frac{1}{4!} - \cdots = \frac{1}{2!} - \left(e - 1 - 1 - \frac{1}{2}\right) = \frac{1}{2!} - e + 1 + 1 + \frac{1}{2} = 3 - e$

The author, is **Editor of this Quartrerly e-Bulletin**. He is an eminent mentor, analyst and connoisseur of Mathematics from IIT for preparing aspirants of Competitive Examinations for Services & Admissions to different streams of study at Undergraduate and Graduate levels using formal methods of teaching shared with technological aids to keep learning at par with escalating standards of scholars and learners. He has authored numerous books of excellence.

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I don't think anybody anywhere can talk about the future... without talking about education. Whoever controls the education of our children, controls our future.

- Wilma Mankiller

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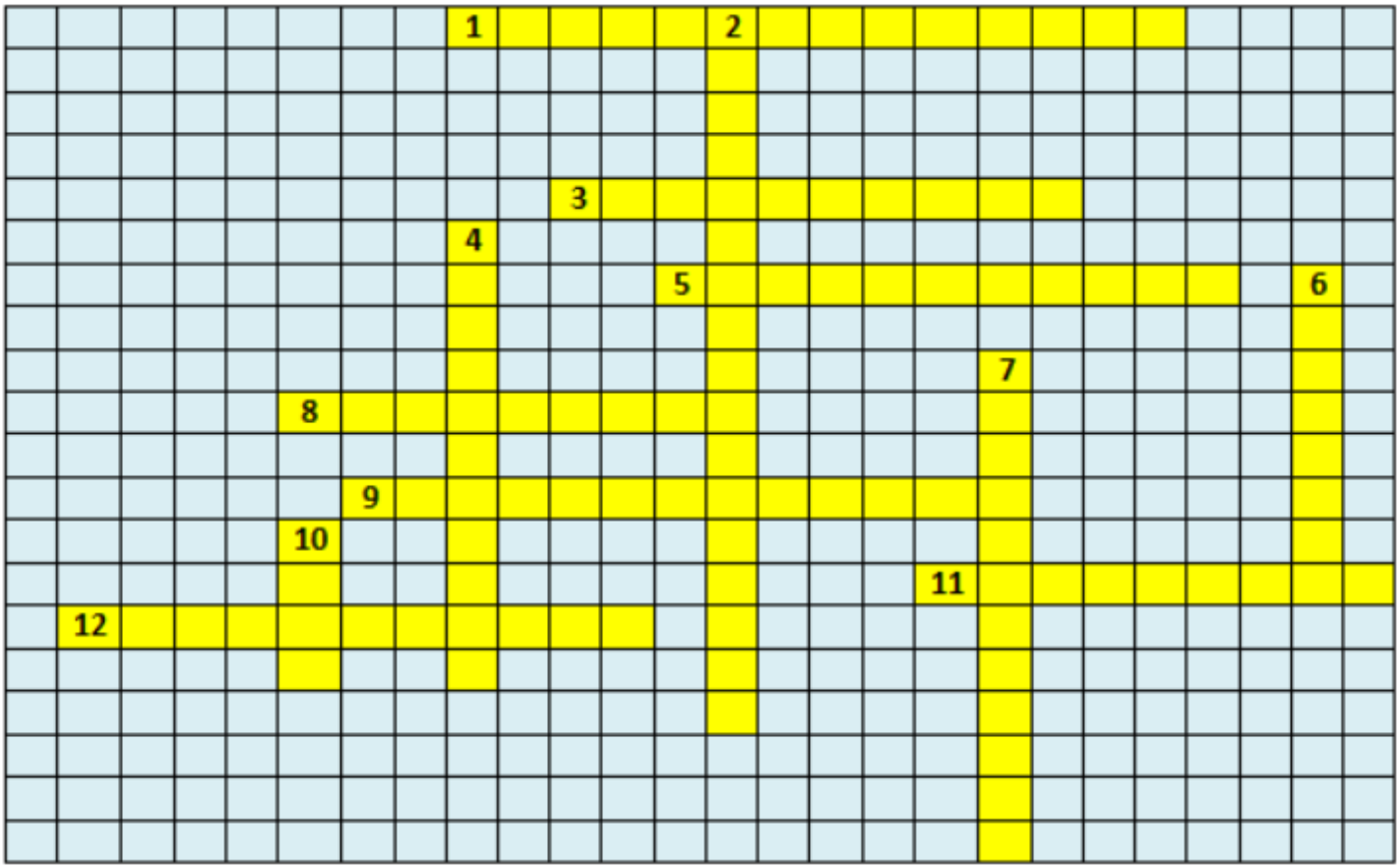
CROSSWORD PUZZLE Ocrober'19 : BULLETIN AUTHORS

Prof. SB Dhar



Across

1 Srudents' Domain Column Author

3. Who said 'there are two educations'?

5 Author of 'Education and Competition'

8 Author of 'Chandrayan-2 '

9 Author of' Homage of Teacher ...'

11 Column 'Andaazen Bayan'

12 Author of 'World Without Border'

Below

2 Composer of 'Go Not to the Temple'

4 Composer of 'Is It a New Order?'

6 Author of column 'Ayurveda'

7 Who said 'A good Teacher is like a candle'?

10 Number of photos on cover page of Semptember Bulletin

Answer to this Crossword Puzzle shall be provided in next issue of this e-Bulletin

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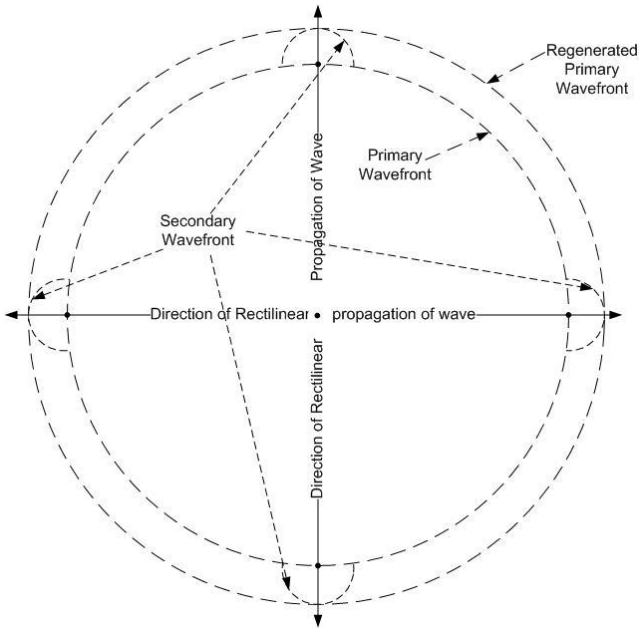
Growing with Concepts : Physics

BASIC CONCEPT OF REFLECTION AND REFRACTION OF WAVES

Propagation of sound and light through a medium was initially considered to be motion of particles from source to destination. In 1678 **Christian Huygens** proposed that rectilinear propagation of light as a wave front. This was substantiated by **Augustine-Jean Fresnel** in 1816 to explain phenomenon of interference in light. This ***Huygens Wave Theory*** **(HWT)** is explained with a set of postulates as under –

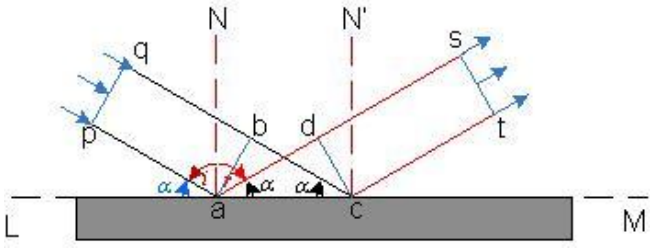


a) Wave travels like propagation of wave away from the source,
b) Propagation is in the forms of a spherical wave-front in three dimensions in space. Wave travels with a uniform velocity in a homogenous medium,
c) Every point on the wave-front acts like a secondary source of wave and it perpetuates secondary wave-front,
d) Envelop of Secondary wave-fronts regenerates new wave-front which propagates like the primary wave-front.

The concept of wave-front can be best visualized by throwing a stone in a pond or lake and then observing waves so generated propagate towards its bank. Postulates of wave propagation propounded by HWT successfully explains phenomenon of reflection and refraction. Further, concept of superimposition of waves is used to explain interference and diffraction phenomenon.

Generation of secondary wave-fronts is explained by taking Four points on a primary wave-front that has travelled some distance as shown in the figure. As we proceed into the journey, use of HWT shall be made while elaborating the above phenomenon.

Reflection Phenomenon: Reflection of sound waves is a usual experience. Sound of crackers or beating of drums is, at times, heard to be coming from a direction other than that of source. Whereas experience mirror is an experience since infancy for everyone, maybe it is a bit to know that it is nothing but reflection.



Reflection of sound and light is simplistically explained with HWT. Taking a parallel beam of wave with a wave-front p-q approaching a reflecting surface is shown in the figure. The wave front on till reaching the reflecting surface at the position a-b, while travelling in the same medium, shall have uniform velocity. The ray p-a of the incident beam, at the edge LM of the reflecting surface which does not allow its further propagation, turns into another direction say along the line 'ad' in the same medium and hence it shall maintain uniform velocity, But, the other edge q-b continues its unobstructed travel along line b-c, until it encounters reflecting surface at point c. Since travel a-d and b-c are in the same medium, with identical velocities (v) . After a lapse of time (t) when edge q-b reaches point c, new position of the wave front will be d-e. Again as per HWT the wave front shall always be perpendicular the direction of propagation and hence respective distances $ad = v \times t$ and $bc = v \times t$ such that $bc = ad$. Geometrically Δabc and Δadc are congruent by RHS theorem (since, ac is common diagonal of the two triangles and side bc=ad) and hence corresponding angles $\angle bca = \angle dac = \alpha$. Further, ray pa and qc are parallel being edge of the parallel incident beam, this makes $\angle paL = \angle qca = \alpha$ being corresponding angles. Moreover, Na and N'c are normal on the edge of the reflecting surface at point a and c respectively. Therefore, angle of incident ray on the reflecting surface $i = \angle NaL - \angle paL = 90^0 - \alpha$ and angle of reflected ray on the reflecting surface $r = \angle Nac - \angle dac = 90^0 - \alpha$. It is seen that $i = r = 90^0 - \alpha$ i.e. *angle of incidence and angle of reflection are equal* ***First Conclusion*** *in reflection phenomenon.* Further, it can be verified experimentally or simulating the parallel incident beam with a strip of paper, folded on any line a-c, the incident ray p-a, normal N-a and reflected ray a-s are on the same plane. These observations are summarized into Laws of Reflection as :

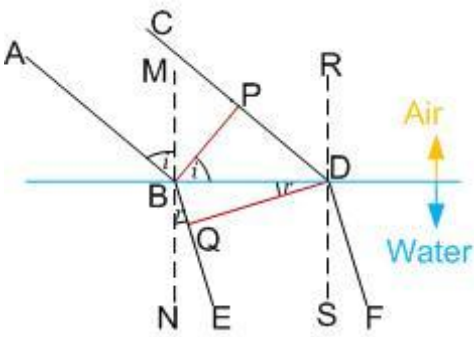
i) Angle of incidence is equal to angle of reflection,
ii) The incident wave, normal at the point of incidence and the reflected wave are in the same plane.

These laws of reflection are applicable equally for plain mirror of curved surfaces. The only care it requires in case of curved surfaces in general and spherical surfaces particular, a topic of study, identifying normal to the reflecting surface at the point of incidence of the ray under consideration.

Refraction Phenomenon: Wave nature of light is proved beyond doubt refraction phenomenon of light is being elaborated in the same perspective using HWT. The only difference in refraction phenomenon is –

(a) medium of propagation of light transparent i.e. it is not obstructive to its propagation through the medium.

(b) velocity of light is different in different medium.



Correlation of the velocity of light with refractive property of the medium would become as the analysis proceeds. Taking a parallel beam of light AB-CD travelling in air at a velocity v_a intercepts surface of transparent water at BD. In water velocity of light is v_w. This change of velocity would be applicable to all rays sandwiched between BE and DF forming edge of the beam. Characteristically, wave-front shall remain perpendicular to the beam at every point in accordance with HWT. Let (t) be the taken by wave front BP to reposition along Q-D, then $PD = v_a \times t$ and $BQ = v_w \times t$. Further, from the geometry of the refraction diagram $\angle ABM = i = 90^0 - \angle MBP$ and $\angle PBD = 90^0 - \angle MBP$ and hence $i = \angle PBD$. Now, from ΔBPD, we have $\sin\angle PBD = \sin i = \frac{PD}{BD} = \frac{v_a \times t}{BD} \Rightarrow BD = \frac{v_a \times t}{\sin i}$. Likewise, it leads to $\angle NBE = r = 90^0 - \angle QBD$ and $\angle BDQ = 180^0 - (90^{0+} + \angle QBD) = 90^0 - \angle QBD$, and hence $i = \angle BDQ$. Now, from ΔBPD we have $\sin\angle BDQ = \sin r = \frac{BQ}{BD} = \frac{v_w \times t}{BD} \Rightarrow BD = \frac{v_w \times t}{\sin r}$. Equating the two values of BD we get $\frac{v_w \times t}{\sin r} = \frac{v_a \times t}{\sin i} \Rightarrow \frac{v_w}{\sin r} = \frac{v_a}{\sin i}$. It leads to an equation of refraction of light from air to water $\frac{\sin i}{\sin r} = \frac{v_a}{v_w}$, since R.H.S. of the equation is the ration if velocity of light v_a in incident medium to v_w in refracted medium. This ratio is a characteristic of the two mediums of propagation of light it is called **Refractive Index** $_a\mu_w = \frac{v_a}{v_w}$. Since, propagation of light is reversible and hence for light travelling from water to air $_w\mu_a = \frac{1}{_a\mu_w} = \frac{v_w}{v_a}$.

This elaboration shall be taken farther into quantitative analysis of refraction and its various effects. A beginning is made with an apparent shifting of an object seen through a glass slab. Velocity of Light in vacuum is $3.0\text{x}10^8$m/sec and nearly same as that in the air, while in water it is $2.0\text{x}10^8$ m/sec. Accordingly, $_a\mu_g = \frac{v_a}{v_g} = \frac{3\times10^8}{2\times10^8} = 1.5$. Extending this logic, $_g\mu_a = \frac{1}{_a\mu_g} = \frac{v_g}{v_a} = \frac{2\times10^8}{3\times10^8} = 0.\bar{6}$.

It is seen that refractive index is a relative property and therefore this property has been rationalized with respect vacuum, the absolute reference. It is based on the facts that –

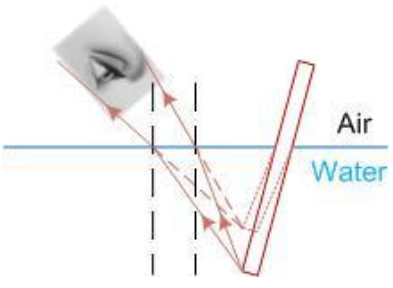
a. light does not require medium for propagation,
b. denser the medium lower is the velocity of light in the medium
c. By corollary of (b) above velocity of light in vacuum v_0 is highest and forma an absolute reference.

Accordingly, absolute refractive index of air would be $\mu_a = \frac{v_0}{v_a} \Rightarrow v_a = \frac{v_0}{\mu_a}$. On similar lines, absolute refractive index of water would $\mu_w = \frac{v_0}{v_w} \Rightarrow v_w = \frac{v_0}{\mu_w}$. Thus, redefining relative refractive index of water w.r.t. air would be $_a\mu_w = \frac{\frac{v_0}{\mu_a}}{\frac{v_0}{\mu_w}} = \frac{\mu_w}{\mu_a}$. This expression of refractive index of a medium in terms of absolute refractive indices would be found useful in determining magnifying power of lenses.

Reflection and Refraction phenomenon are most easily and widely observed and have found many applications in real life. Elaboration of these experiences and applications are in conformance with basics of Geometry and hence it is study is classified at the beginning of Geometrical Optics.

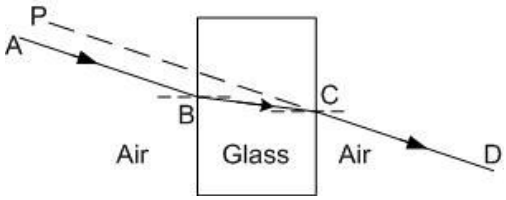
Some of the common experiences of refraction are elaborated below-

1. **Apparent bending of a straight stick dipped in water:** It is due to rays emanating from each point on dipped stick having varying angle of incidence; larger the angle of incidence, more is the angle of refraction, and eventually rays from the dipped portion of the stick apparently coming from a point above the actual position, so does the stick appears to be bent at



surface of immersion. Precisely, this is the reason why does water appears shallow.

2. **Apparent shift of the article:**. It is seen that when ray of light AB travels from lighter medium to denser medium, following law of refractive index, it bends towards normal at the point of incidence an takes a path BC .



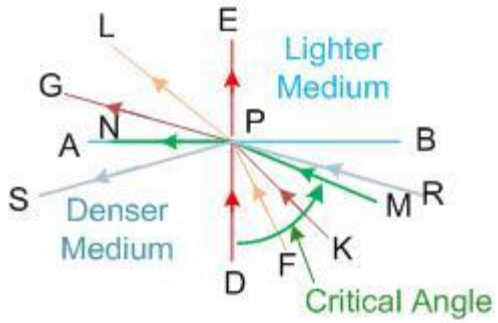
The refracted ray on reaching the other parallel face of the denser medium, at point C it encounter an inter-surface of denser to lighter medium. This again causes refraction of light from denser medium to lighter medium would depart from normal along line CD such that extension of this ray PC is parallel to incident ray AB. Thus it can be said that incident ray AB after passing through a refractive medium having parallel surfaces like paralleopiped is displaced along PD.

The extent of shift is a geometrical deduction and can be determined with the information of thickness of the transparent slab and refractive index of the mediums.

Effective refractive index of cascaded parallel mediums is product of refractive indices of the interfacing mediums and emerging light is parallel to the incident light if the parallel mediums are immersed in same medium, which is air in the instant case.

3. **Total Reflection:** Above observations gives rise to an automatic consequence as to how long angle of refraction would continue to increase. This phenomenon is demonstrated in the figure. below.

Line AB represents interface of two mediums. A ray DP incident on point P is normal to the interface passes through un-deviated since angle of incidence is Zero, and is in conformance with the Law of Refraction.



As the angle of incidence increases for rays FP, KP and MP deviates from normal in increasing order along PL, PG and PN, respectively; it is as per the Law of Refraction. It is seen that ray MP after refraction passes along PN making an angle 90^0 with the normal and is along the interface. Any further, increase in angle of incidence as shown by ray RP will get reflected at the point of incidence and travel along PS, and is in accordance with the *laws of reflection*; this is called Total Reflection. Thus law of refraction is valid in this case until refracted ray is along PN the interface, and angle of incidence corresponding to this ray MP is called **Critical Angle**. Reflection of light from a hot surface of the earth during noon of gives a feel that there is water ahead. This happens because of heating of earth's surface which causes heating of air near the surface and in turn become lighter. Instead, density of air above, i.e. at the level of object and the observer, being away from the earth's surface, is relatively cooler and denser. This forms an ideal case for total reflection, but only at distance which cause angle of incidence greater than critical angle.
As the object and observer move closer, the angle of incidence reduces below critical angle and total reflection stops. This phenomenon of total of reflection on roads or deserts is called Mirage.

4. PRISM **and Lenses:** These are extension of l*aws of refraction* where incident and emergent surfaces are non parallel. This elaboration is detailed in Mentors' Manual.

—00—

You are a few brave LADS....
Hold on, boys, no cowards among my children...
Are great things ever done smoothly?
Time, Patience, and indomitable will must show.
I could have told you many things that would have made your heart leap, I will not.
I want iron wills and hearts that do not know how to quake.
Hold on. The Lord bless you.

- Swami Vivekananda

—00—

Growing with Concepts: Chemistry

ALKALINE EARTH METALS

Kumud Bala

The group 2 of the periodic table consists of the elements beryllium (Be), magnesium (Mg), calcium (Ca), strontium (Sr), barium (Ba) and radium (Ra). These elements are known as alkaline earth metals, because their oxides are alkaline in nature and these oxides remain unaffected by nature or fire and exist in earth.

Occurrence: Alkaline earth metals are also highly reactive and hence do not occur in the free state but are widely distributed in nature in the combined state as silicates, carbonates, sulphates, and phosphates**. Beryllium** is the fifty-first most abundant element by weight found in the earth's crust. It is found in small quantizes as silicate minerals beryl ($Be_3Al_2Si_6O_{18}$) and phenacite (Be_2SiO_4). **Magnesium** is the sixth most abundant element by weight found in the earth's crust as carbonate, sulphate and silicate. It also occurs to about o.13% in sea water as chloride and sulphate. It occurs as dolomites ($MgCO_3.CaCO_3$), magnesites ($MgCO_3$), epsomite ($MgSO_4.7H_2O$), soapstone (talc) [$Mg_3Si_4O_{10}(OH)_2$], and basaltic mineral olivine[$(MgFe)_2SiO_4$]. **Calcium** is the fifth most abundant element by weight found in the earth's crust. It mainly occurs as $CaCO_3$ in form of limestone, marble and chalk. Other important minerals are gypsum ($CaSO_4.2H_2O$), anhydrite ($CaSO_4$), fluorite (CaF_2) and fluoroapatite [$3Ca_3(PO_4)_2.CaF_2$]. **Strontium** occurs as celestite ($SrSO_4$) and strontianite ($SrCO_3$). **Barium** occurs as barite ($BaSO_4$). It also occurs as witherite ($BaCO_3$). **Radium** is extremely rare and is radioactive.

General characteristics of alkaline earth metals:

***Electronic configuration*:** the atoms of all the alkaline earth metals have two s-electrons in their outermost shell preceded by the noble gas configuration. Their general configuration may be written as [noble gas] ns^2, where 'n' represents the valence shell.

Element (symbol)	Atomic number	Electronic configuration complete	With inert gas core
Beryllium (Be)	4	$1s^22s^2$	[He]$2s^2$
Magnesium (Mg)	12	$1s^22s^22p^63s^2$	[Ne]$3s^2$
Calcium (Ca)	20	$1s^22s^22p^63s^23p^64s^2$	[Ar]$4s^2$
Strontium (Sr)	38	$1s^22s^22p^63s^23p^6\ 3d^{10}\ 4s^24p^65s^2$	[Kr]$5s^2$
Barium (Ba)	56	$1s^22s^22p^63s^23p^23d^{10}4s^24p^64d^{10}5s^25p^66s^2$	[Xe]$6s^2$
Radium (Ra)	88	$1s^22s^22p^63s^23p^23d^{10}4s^24p^64d^{10}4f^{14}5s^25p^65d^{10}6s^26p^67s^2$	[Rn]$7s^2$

***Atomic and Ionic Sizes*:** The atomic and ionic radii of alkaline earth metals are fairly large though smaller than the corresponding alkali metals and these increase down the group. **Explanation:** the alkaline earth metals have a higher nuclear charge and, therefore, the electrons are attracted more towards the nucleus. As a result, their atomic and ionic radii are smaller than those of the alkali metals. On moving down the group, the atomic and ionic radii increase due to addition of an extra shell of electrons in each succeeding element and the increasing screening effect.

***Ionization Enthalpy*:** The alkaline earth metals have fairly low ionization enthalpies though greater than those of the corresponding elements of group1 (alkali metals) and they decrease down the group. **Explanation**: The low ionization enthalpy of the alkaline earth metals is because of their strong tendency to lose electrons due to their smaller nuclear charge and comparatively large atomic size which results in weaker forces of attraction between the valence electrons (ns^2) and the nucleus. But the values of the first ionization enthalpy of elements of group 2 are greater than those of the elements of group 1, because the atoms of the alkaline earth metals have smaller size and higher nuclear charge than those of alkali metals. On moving down the group, ionization enthalpy values go on decreasing because of the increase in atomic size due to addition of new shells and screening effect of the electrons in the inner shells which overweigh the effect of increased nuclear charge. It may be noted that although IE_1 (first ionization enthalpy) values of alkaline earth metals are higher than those of alkali metals, but IE_2 values of alkaline earth metals are much smaller than those of alkali metals. For example, the ionization enthalpy values of sodium (alkali metal) and magnesium (alkaline earth metal) are given below:

Element	IE_1	IE_2
Sodium (Na)	496 kJ mol^{-1}	4562 $kJmol^{-1}$
Magnesium (Mg)	737 $kJmol^{-1}$	1450 kJ mol^{-1}

In case of alkali metal (Na) the second electron is to be removed from a cation which has already acquired a noble gas configuration.

$$Na\ (g) \xrightarrow{IE1} Na^+\ (g) + e^- \qquad Na^+\ (g) \xrightarrow{IE2} Na^{+2}\ (g) + e^-$$
$$1s^22s^22p^63s^1 \qquad 1s^22s^22p^6 \qquad 1s^22s^22p^5$$
$$Mg\ (g) \xrightarrow{IE1} Mg^+(g) + e^{-1} \qquad Mg^+ \xrightarrow{IE2} Mg^{+2}\ (g) + e^-$$
$$1s^22s^22p^63s^2 \qquad 1s^22s^22p^63s^1 \qquad 1s^22s^22p^6$$

Not very stable

On the other hand, in the alkaline earth metal (Mg), the second electron is to be removed from a monovalent cation Mg^{+1} ($1s^22s^22p^63s^1$) which still has one electron in the outermost shell. Thus, the second electron in Mg can be removed easily and require much less energy than

alkali metal (Na). The IE_3 of Mg will be very high because the electron is to be removed from stable noble gas configuration.

***Hydration Enthalpy*:** Like alkali metal ions, the hydration enthalpies of alkaline earth metal ions decrease as the size of the metal ion increases down the group. i.e., Be^{+2}> Mg^{+2}>Ca^{+2}>Sr^{+2}>Ba^{+2} . Due to smaller size of alkaline earth metals ions as compared to alkali metal ions, the hydration enthalpies of alkaline earth metal ions are larger than those of alkali metals ions. Consequently, the compounds of alkaline earth metal are more extensively hydrated than those of alkali metals. For example, $MgCl_2$ and $CaCl_2$ exist as $MgCl_2.6H_2O$ and $CaCl_2.6H_2O$ while NaCl and KCl do not form such hydrates.

***Dipositive Oxidation State* (M^{+2}):** The alkaline earth metals exhibit a valency of +2 as they can lose two electrons and form bivalent ions. In view of lower value of first ionization enthalpy, it would appear that the alkaline earth metals should prefer to form +1 ions (M^{+1}) rather than +2 ions (M^{+2}). If ionization enthalpy were the only factor involved, we would have got the monovalent ions, i.e., Mg^{+1} ,Ca^{+1} etc. rather than the divalent ions i.e., Mg^{+2}, Ca^{+2} etc. but actually we get divalent ions. This can be explained as: (i) Divalent ions have stable noble gas configuration. (ii) In solution, the divalent ions of alkaline earth metals are extensively hydrated and the high hydration energies of M^{+2} ions make them more stable than M^{+1} ions. It is observed that the amount of energy released when M^{+2} ions are dissolved in water is much more than for M^{+1} ion. This large amount of extra energy released in the hydration of +2 ions compensated the second ionization enthalpy required for the formation of such ions. (iii) In the solid states, the divalent cations form stronger lattices than monovalent cations and therefore, a lot of energy called lattice enthalpy is released**.**

***Electropositive and Metallic Character*:** Because of the low ionization enthalpies of alkaline earth metals, they are strongly electropositive in nature. However, these are not as strongly electropositive as the alkali metals of group 1 because of comparatively higher ionization enthalpy and smaller in atomic size and their tendency to lose valence electrons is lesser than that of alkali metals. The electropositive character increases down the group due to increase in atomic radii and decrease in ionization energies.

***Melting and Boiling Points*:** The alkaline earth metals have higher melting and boiling points as compared to those of alkali metals. Because of their smaller size and more closely packed crystal lattice as compared to alkali metals, their melting and boiling points are higher than those of group1 elements. However, down the group, there is no regular trend in their melting and boiling points.

Elements	Be	Mg	Ca	Sr	Ba	Ra
Melting points/ K	1560	924	1124	1062	1002	973
Boiling points/ K	2745	1363	1767	1655	2078	1973 (uncertain)

Beryllium	Magnesium	Calcium	Strontium	Barium	Radium
-----	------	Brick red	Crimson red	Apple green	Crimson red

***Flame coloration*:** Alkaline earth metals impart a characteristic color to the flame.

Be and Mg do not give any characteristic flame colors. Be and Mg atoms are smaller in size and their electrons are strongly bound to the nucleus. They need large amounts of energy for excitation of electrons to higher energy levels which is not available in the Bunsen flame. So they do not impart colour to the flame. From Ca to Ra give characteristic flame colors because of their low ionization energies. When their compounds are put into a flame, the electrons absorb energy and are excited to higher level. When these excited electrons (excited state is unstable state) come back to ground state they emit radiations which fall in the visible region of particular wave length. Therefore, they give colors to the flame.

***Chemical Properties*:** Because of their low ionization and high electropositive character, the alkaline earth metals have strong tendency to lose valence electrons to form corresponding dipositive ions having inert gas configuration. Therefore, they are very reactive. The reactivity of these elements increases on going down the group from Be to Ra, because the ionization enthalpies decrease and electrode potentials become more and more negative with increasing atomic number from Be to Ra. Thus, beryllium is the least reactive and Ra is the most reactive element. Further, since the ionization enthalpies of alkaline earth metals are higher and their electrode potentials are less negative than the corresponding alkali metals, therefore alkaline earth metals are less reactive than corresponding alkali metals. Some of the general trends are discussed below:

***Reactivity Towards Air* (N_2 and O_2)-** The alkaline earth metals being less electropositive than alkali metals react with air or oxygen slowly upon heating to form oxides [MO]. Beryllium and magnesium are kinetically inert to oxygen because of the formation of thin film of oxide on their surface. Beryllium in the massive form does not react with air below 873K. However, powdered beryllium is

more reactive and burns brilliantly on ignition to a mixture of beryllium oxide (BeO) and beryllium nitride (Be_3N_2).

$2Be + O_2 \xrightarrow{\Delta} 2BeO$

$3Be + N_2 \xrightarrow{\Delta} Be_3N_2$

Magnesium is more electropositive than beryllium and hence burns with dazzling brilliance in air to form a mixture of magnesium oxide and magnesium nitride. Mg + air $\xrightarrow{\Delta}$ MgO + Mg_3N_2. Calcium, strontium and barium being even more electropositive react with air readily to form a mixture of their respective oxides and nitrides. Be_3N_2 being covalent is volatile while the nitrides of all other elements are crystalline solids. Beryllium nitrides decompose on heating give nitrogen and other nitrides react with water liberating NH_3.

$Be_3N_2 \xrightarrow{\Delta} 3Be + N_2$

$Ca_3N_2 + 6H_2O \rightarrow 3Ca(OH)_2 + 2NH_3$

Thus, reactivity towards oxygen increases as we move down the group due to increasing electropositive character of the elements. Therefore, calcium, strontium and barium are stored in paraffin but beryllium and magnesium are not stored in paraffin because they form a protective layer of oxide on their surface.

***Formation of Peroxides*:** Since larger cations stabilize larger anion, therefore, tendency to form peroxide increases as the size of the metal ion becomes larger. Thus, barium peroxide (BaO_2) is formed by passing air over heated BaO at 773K. $2BaO + O_2 \xrightarrow{773K} 2BaO_2$

$2SrO + O_2 \xrightarrow[\text{high pressure}]{773K} 2SrO_2$.

SrO_2 is prepared in a similar way but under high pressure and temperature. CaO_2 is not formed by this way but can be prepared as the hydrate by treating $Ca(OH)_2$ with H_2O_2 and then dehydrating the product.

$Ca(OH)_2 + H_2O_2 \rightarrow CaO_2.2H_2O$

Crude MgO_2 has been made using H_2O_2 but peroxide of beryllium is not known. All peroxides are white crystalline ionic solids containing the peroxide ion O_2^{-2}. Treatment of peroxide with acids liberates hydrogen peroxide.

$BaO_2\ 2HCl \rightarrow BaCl_2 + H_2O_2$

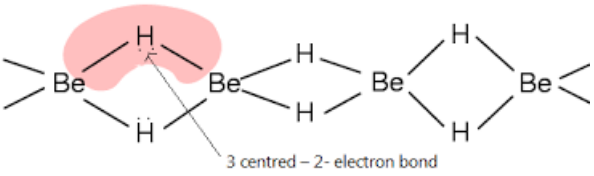
***Reactivity Towards Hydrogen*:** All the alkaline earth metals except beryllium combine with hydrogen directly on heating to form metal hydrides (MH_2).

$Ca + H_2 \rightarrow CaH_2$

BeH_2, however, can be prepared by the reaction of $BeCl_2$ with $LiAlH_4$.

$BeCl_2 + LiAlH_4 \rightarrow 2BeH_2 + LiCl + AlCl_3$

Both BeH_2 and MgH_2 are covalent compounds have polymeric structures. Since BeH_2 or MgH_2 (with two normal covalent bonds) has only four electrons in the valence shell, therefore, they are electron deficient molecules. To make up their electron deficiency, each Be or Mg atom forms four three centre two-electron (3c-2e) bonds or banana bonds as shown in figure.



The hydrides of other elements of this group, i.e., CaH_2, SrH_2 and BaH_2 are ionic and contain the H^- ions. The hydrides are highly reactive towards water and form hydroxides and liberate hydrogen.

$MH_2 + 2\ H_2O \rightarrow M(OH)_2 + H_2$

Thus, act as reducing agents. CaH_2 is called hydrolith and is used for production of H_2 by action of water on it.

$CaH_2 + 2\ H_2O \rightarrow Ca(OH)_2 + H_2$

***Reactivity Towards Water*:** The electrode potential of beryllium (Be^{+2}/Be= -1.97V) is least negative amongst all the alkaline earth metals. This means that Beryllium is much less electropositive than other alkaline earth metals, and hence does not react with water or steam even at red heat. The electrode potential of Mg (Mg^{+2}/Mg = -2.37 V) although more negative than that of Beryllium, yet is still less negative than those of alkali metals and hence it does not react with water or steam.

$Mg + 2H_2O \rightarrow Mg(OH)_2 + H_2$

Mg, in fact, forms a protective layer of oxide on its surface therefore it does not react readily with water unless the oxide layer is removed. Ca, Sr and Ba have more negative electron potentials similar to those of the corresponding group 1 (alkali metals) and hence react with increasing vigor even with cold water, liberating H_2 and forming the corresponding metal hydroxides

$Ca + 2H_2O \rightarrow Ca(OH)_2 + H_2$

Like alkali metals, the hydroxides are basic in nature and basic strength increases down the family. This means that reactivity of alkaline earth metals increase as we move down the group. However, the reaction of alkaline earth metals is less vigorous as compared to alkali metals.

***Reactivity Towards Halogen*:** All the alkaline earth metals combine with halogens at higher temperatures forming their halides. $M + X_2 \rightarrow MX_2$ (X= F, Cl, Br and I) the

metals halides can also be obtained by the action of halogen acids on metals, their oxides, carbonates and hydroxides.

$MO + 2HX \rightarrow MX_2 + H_2O$

$M(OH)_2 + 2HX \rightarrow MX_2 + 2H_2O$

BeF_2 is conveniently prepared by thermal decomposition of $(NH_4)_2BeF_4$ while $BeCl_2$ can be made from the oxide as: $BeO + 2NH_3 + 4HF \rightarrow (NH_4)_2(BeF_4) \rightarrow BeF_2 + 2NH_4F$

$BeO + C + Cl_2 \leftrightarrow^{870\text{-}1070K} BeCl_2 + CO$

Beryllium chloride can also be prepared by heating beryllium oxide with CCl_4.

$2BeO + CCl_4 \rightarrow^{973K} 2BeCl_2 + CO_2$

***Action with Acids*:** Alkaline earth metals react with acids and liberate hydrogen**.** However, Be reacts slowly because it is rendered passive by concentration HNO_3. Because concentration HNO_3 is a strong oxidizing agent and it forms a very thin layer of oxide on the surface of the metal, which protects it from further attack by acid.

$M + 2HCl \rightarrow MCl_2 + H_2$

(Here, M = Be, Mg, Ca, Sr and Ba)

$Mg + 2HCl \rightarrow MgCl_2 + H_2$

Beryllium is amphoteric because it also reacts with NaOH giving H_2 and sodium berrylate.

$Be + NaOH + 2H_2O \rightarrow Na_2[Be(OH)_4] + H_2$

Mg, Ca, Sr and Ba do not react with NaOH and are purely basic. This shows that basic properties increase on descending the group.

***Tendency to Form Complexes*:** Among alkaline earth metals beryllium and magnesium have the maximum tendency to form complexes. This is due to their small size and higher charge density. For example beryllium forms tetrahedral complexes $[BeF_4]^{-2}$ ($BeF_2 + 2F^- \rightarrow [BeF_4]^{-2}$). Chlorophyll is an important complex of magnesium.

***Reactivity Towards Carbon*:** When beryllium oxide is heated with carbon at 2175-2275K, a brick red beryllium carbide (Be_2C) is formed.

$2BeO + 2C \rightarrow^{2175\text{-}2275} Be_2C + 2CO$

It is an ionic compound and reacts with water forming methane $Be_2C + 4H_2O \rightarrow 2(Be(OH)_2 + CH_4$. The rest of the alkaline earth metals (Mg, Ca, Sr and Ba) form carbides of the general formula MC_2 either when the metal is heated with carbon in an electric furnace or when their oxides are heated with carbon e.g.

$Ca + 2C \rightarrow^{1375K} CaC_2$

$CaO + 3C \rightarrow^{2275K} CaC_2 + CO$

All these carbides react with water producing acetylene gas.

$CaC_2 + 2H_2O \rightarrow HC{\equiv}CH + Ca(OH)_2$

Calcium carbide acetylene

It may be noted here that MgC_2 on heating gives Mg_2C_3. This carbide contains C_3^{-4} units and reacts with water to form propene.

$Mg_2C_3 + 4H_2O \rightarrow CH_3C{\equiv}CH + 2Mg(OH)_2$

Propene

Calcium carbide is an important chemical intermediate. When CaC_2 is heated in an electric furnace with atmospheric dinitrogen at 1375K, it forms calcium cyanamide (CaNCN or $CaCN_2$).

$CaC_2 + N_2 \rightarrow^{1375K} CaCN_2 + C$

Calcium Cyanamide

The mixture of calcium cyanamide and carbon is called nitrolim and is used as a slow acting nitrogenous fertilizer as it hydrolyses slowly over a periods of months evolving NH_3 gas.

$CaCN_2 + 3H_2O \rightarrow CaCO_3 + NH_3$

***Reducing character*:** The alkaline earth metals are weaker reducing agents than the alkali metals. Like alkali metals their reducing character also increasing down the group.

Explanation: Except beryllium, the alkaline earth metals have a fairly strong tendency to lose two electrons to form dipositive ions ($M \rightarrow M^{+2} + 2e^-$) because of their low ionization enthalpies and high negative values of standard electrode potentials. Therefore, they act as reducing agents. The reducing character of alkaline earth metals increases as we move down the group from Be to Ra because of ionization enthalpies decrease and electrode potentials become more and more negative with increasing atomic number from Be to Ra. Further, since the ionization enthalpies of alkaline earth metals are higher and their electrode potentials are less negative than the corresponding alkali metals, alkaline earth metals are weaker reducing agents than alkali metals.

Assignments

1. The hydration energy of Mg^{+2} is greater than that of ------
   (A) Al^{+3} (B) Na^{+} (C) Be^{+2} (D) Mg^{+3}

2. Among the alkaline earth metals , the element forming predominantly covalent compound is ----
   (A) barium (B) strontium (C) calcium (D) beryllium

3. Which of the alkaline earth metal does not form ionic oxide?
   (A) BeO (B) MgO (C) CaO (D) SrO

4. Which of the following alkaline earth metals does not impart characteristic color to the flame?
   (A) Be (B) Ca (C) Ba (D) Sr

5. Which of the following alkaline earth metals ion has smallest mobility in aqueous solution?
   (A) Mg^{+2} (B) Ca^{+2} (C) Sr^{+2} (D) Ba^{+2}

6. Magnesium is present in ------
   (A) hemoglobin (B) chlorophyll
   (C) vitamin B_{12} (D) ascorbic acid

7. Epsom salt is ----
   (A) $Na_2SO_4.10H_2O$ (B) $FeSO_4.7H_2O$
   (C) $MgSO_4.7H_2O$ (D) $MgCl_2.7H_2O$

8. Which of the following is not an ore of magnesium?
   (A) Epsom salt (B) Dolomite
   (C) Asbestos (D) Gypsum

9. Which of the following readily forms nitride?
   (A) K (B) Mg (C) Ba (D) Ca

10. Which of the following elements does not form hydride by direct heating with dinitrogen?
    (A) Be (B) Mg (C) Sr (D) Ba

11. Which of the following configuration corresponds to an alkaline earth metals?
    (A) $[Ne]3s^2 3p^1$ (B) $[Ar]\ 3d^{10}\ 4s^2$
    (C) $[Kr]\ 5s^1$ (D) $[Ar]4s^2$

12. Choose the incorrect statement:
    (A) Alkaline earth metals are good reducing agent
    (B) Beryllium resembles aluminium closely in its properties, though it belongs to a different group.
    (C) Beryllium is more electropositive than magnesium.
    (D) The electro negativities of alkaline earth metals decrease with atomic numbers.

13. Which one of the following properties is more applicable to alkaline earth metals compared with alkali metals?
    (A) greater ionic radii
    (B) lower ionization energies
    (C) lesser basic hydroxides
    (D) lower electro negatives

14. Which of the following is not true?
    (A) The alkaline earth metals always form dipositive ions
    (B) The compounds alkaline earth metals are less soluble in water than corresponding alkali metals.
    (C) The hydrides of alkaline earth metals are reducing agent.
    (D) In the solid state, $BeCl_2$ exists as linear molecule.

15. Beryllium carbide reacts with water to give -----
    (A) acetylene (B) ethane
    (C) propene (D) methane

16. Beryllium chloride can be prepared by passing chlorine vapours over heated mixture of -----
    (A) BeO and CO_2 (B) $BeCO_3$ and C
    (C) BeO and C (D) $Be(OH)_2$ and C

17. Which of the following hydroxides of alkaline earth metals is least basic?
    (A) $Be(OH)_2$ (B) $Ba(OH)_2$
    (C) $Mg(OH)_2$ (D) $Ca(OH)_2$

18. Which of the following metals dissolve in sodium hydroxide with the evolution of hydrogen?
    (A) Beryllium (B) Magnesium
    (C) Calcium (D) Strontium

19. Calcium does not combine directly with -----
    (A) Oxygen (B) Carbon
    (C) Nitrogen (D) Hydrogen

20. A solid compound 'X' on heating gives CO_2 gas and a residue. The residue mixed with water forms 'Y'. On passing an excess of CO_2 through X in water, a clear solution of 'Z' is obtained. On boiling 'Z' compound 'X' is formed. The compound 'X' is -----
    (A) $CaCO_3$ (B) Na_2CO_3
    (C) K_2CO_3 (D) $Ca(HCO_3)_2$

ANSWERS

1 (B)	2 (D)	3 (A)	4 (A)	5 (A)	6 (B)	7 (C)	8 (D)	9 (B)	10 (A)
11 (D)	12 (C)	13 (C)	1 4 (D)	15 (D)	16 (C)	17 (A)	18 (A)	19 (B)	20 (A)

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SCIENCE QUIZ : October-2019

Kumud Bala

1. The conditions under which combustion can take place:
(a) presence of combustible substance
(b) presence of supporter of combustion i.e., oxygen
(c) attainment of ignition temperature.
Select the correct statements:
(A) only (a) (B) only (b)
(C) only (b) and (c) (D) all (a), (b) and (c)

2. A liquid fuel used in homes is …….
(A) CNG (B) LPG
(C) water (D) kerosene

3. The use of CNG in automobiles has reduced pollution in our cities as it is a quality fuel because …
(A) it leaves behind no residue after its combustion.
(B) it gives out CO_2 , CO gas, SO_2 and nitrogen dioxide which are playing crucial role in global warming and acid rain
(C) it is a solid fuel
(D) it pollutes air on its combustion

4. CO_2 is able to control fires because ……
(A) CO_2 is heavier than oxygen
(B) it forms a blanket around fire because of which the supply of air is stopped.
(C) it brings down the temperature of the burning substance
(D) all the above

5. What is the main constituent of biogas?
(A) methane (B) butane
(C) ethane (D) propane

6. Which zone of a flame does a goldsmith use for melting gold and silver?
(A) outer most zone (B) middle zone
(C) innermost zone (D) vaporized wax

7. Burning of hydrogen is an example of …….
(A) slow combustion
(B) rapid combustion
(C) explosion
(D) spontaneous combustion

8. Which gas is required for combustion?
(A) oxygen (B) nitrogen
(C) carbon dioxide (D) hydrogen

9. Which fuel is used in the human body to produced energy?
(A) coal (B) food
(C) juices (D) paper

10. Which of the following can be used to extinguish fire at the petrol pump?
(A) water (B) carbon dioxide
(C) blanket (D) none of these

11. What are the disadvantages of using wood as a fuel?
(i) in villages wood is used because it is easily available and cheap
(ii) it produces lot of smoke which causes respiratory problems
(iii) wood contains several important substances which are lost when it is burnt
(iv) cutting of trees leads to deforestation.

Choose the correct statements.
(A) (i) and (ii) (B) (ii), (iii) and (iv)
(C) (iii) and (iv) (D) (i) and (iv)

12. Paper by itself catches fire easily whereas a piece of paper wrapped around an aluminium pipe does not because …..
(A) Paper by itself catches fire easily because it is a highly combustible substance
(B) When it is wrapped on aluminium pipe, it does not burn because aluminium is a good conductor of heat and it takes the heat from paper.
(C) Paper does not catch fire easily.
(D) None of these

13. A substance which reacts with oxygen giving heat is called a combustible substance. Which one of the following is a combustible substance?
(A) iron nail (B) glass
(C) stone piece (D) wood

14. Which one of the following has the highest calorific value?
(A) kerosene (B) biogas
(C) LPG (D) petrol

15. Magnesium ribbon on burning in air produces …….
(A) magnesium oxide, water and light
(B) magnesium oxide and heat
(C) magnesium oxide, heat and light
(D) magnesium oxide, water and heat

16. The substance that does not burn with flame is ……
(A) LPG (B) camphor
(C) dry grass (D) charcoal

17. On placing an inverted tumbler over a burning candle, the flame extinguishes after some time. This is because of non-availability of ……
(A) oxygen (B) water vapors
(C) carbon dioxide (D) wax

18. If a person's clothes catch fire, the best way to extinguish the fire is to …….
(A) throw water on the clothes
(B) use fire extinguisher
(C) cover the person with a woolen blanket
(D) cover the person with a polythene sheet.

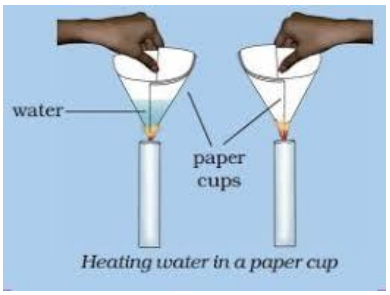
19. Choose the incorrect statement from the following. Forest fires are usually due to ……
(A) carelessness of humans (B) heat of sun
(C) cutting of trees (D) lightning strike

20. The calorific value of a fuel is expressed in a unit called …..
(A) kilojoules per litre
(B) kilogram per milliliter
(C) kilojoules per gram
(D) kilojoules per kilogram

21. Which is the coolest zone of a flame?
(A) non-luminous zone
(B) luminous zone
(C) dark zone or innermost zone
(D) wick

22. Why does the middle zone of the candle flame glow with yellow colour?
(A) it contains unburnt vapors of wax (
B) incomplete combustion takes place
(C) complete combustion takes place
(D) wick

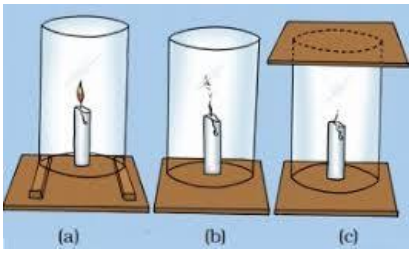
23. Make two paper cups by folding a sheet of paper. Pour about 50 ml of water in one of the cups. Heat both the cups separately with a candle in figure. What do you observe?



Heating water in a paper cup

(A) It is observed that the empty cup catches fire immediately and begins to burn.
(B) The cup containing water does not burn; instead the water present in it becomes hot.
(C) Both the cups do not catch fire.
(D) Both (A) and (B) are observed

24. Fix a lighted candle on a table. Put a glass chimney over the candle and rest it on a few wooden blocks in such a way that air can enter chimney (in figure a). Observe what happens to the flame. Now remove the blocks and let the chimney rest on the table (in figure b). Again observe the flame. Finally, put a glass plate over the chimney (in figure c). Watch the flame again. What happens in the three cases?



(A) The candle burns freely in case (a) when air can enter the chimney from below.
(B) Incase (b), when air does not enter the chimney from below, the flame flickers and produces smoke.
(C) Incase (c), the flame finally goes off because the air is not available.
D) All the above statements are correct.

25. The substance expected to have the highest ignition temperature out of the following is -------
(A) kerosene (B) petrol
(C) coal (D) alcohol

26. Which of the following statements is correct?
    (A) A physical process in which a substance reacts with oxygen to give off heat is called combustion.
    (B) Water is the best extinguisher for fire involving electrical equipments.
    (C) Alcohol, CNG and LPG are inflammable substances.
    (D) Increased concentration of nitrogen in air is believed to cause global warming.

27. What do you understand by fuel efficiency?
    (A) Fuel efficiency is determined by its calorific value which is the amount of heat energy produced on complete combustion of 1kg of a fuel.
    (B) Fuel efficiency is determined by its calorific value which is the amount of heat energy produced on incomplete combustion of 1g of a fuel.
    (C) The substance which vaporize during burning, give flame.
    (D) None of these.

28. If you hold a piece of iron with a pair of tongs inside a candle flame or a Bunsen burner flame, what will you observe? Will it produce a flame?
    (A) Iron wire will become red hot and glow. It will not produce a flame.
    (B) Iron wire will become red hot and give yellow flame.
    (C) Iron wire on burning in air produces iron oxide, heat and light.
    (D) Iron wire is a combustible substance.

29. Shyam was cooking potato curry on a chulla. To his surprise, he observed that the copper vessel was getting blackened from outside. It may be due to ----
    (A) proper combustion of fuel
    (B) improper cooking of potato curry
    (C) improper combustion of fuel
    (D) burning of copper vessel

30. Choose the incorrect statement from the following.
    A good fuel is one which -------
    (A) is readily available
    (B) produces a large amount of heat
    (C) leaves behind many undesirable substance
    (D) burns easily in air at a moderate rate.

(Answers to this Science Quiz shall be provided inMonthly e-Bulletin)

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Education is not the answer to the question.
Education is the means to the answer to all questions.
- William Allin

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Education is not job training;the function of education is to instill an appreciation
of our place in the flow of time and space,to expand our intellectual and empathetic understandingof nature and people.
-Jonathan Lockwood Huie

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Theme Song :

PREMISE:*We are pleased to adopt a song*" इतनी शक्ति हमें देना दाता....."*from a old Hindi Movie Do Aankhen Barah Haath दो आँखें बारह हाथ of year 1957, directed by The Late V. Shantaram. The lyrics are by Shri Bharat Vyas, singer Melody Queen Sushri Lata Mangeshkar, and Music Direction by Vasant Desai. It has become a widely accepted inspirational song and/or prayer in many educational institutions and socially inspired initiatives engaged in mentoring of unprivileged children. This newly formed non-organizational initiative, being selflessly operated by a small set ofcompassionate persons, finds its philosophy in tune with the song and conveys its gratitude to all he eminent persons who brought out the song in a manner that it has attained an epitome of popularity. While working its mission and passion, the group invites one and all to collectively complement in grooming competence to compete among unprivileged children. The song/prayer goes as under -*

इतनी शक्ति हमें देना दाता, मन का विश्वास कमजोर होना
हम चले नेक रस्ते पे हम से, भूलकर भी कोई भूल होना ||

दूर अज्ञान के हो अंधेरे, तू हमें ज्ञान की रोशनी दे
हर बुराई से बचते रहें हम, जितनी भी दे भली ज़िन्दगी दे
बैर होना किसी का किसी से, भावना मन में बदले की होना ||

इतनी शक्ति हमें देना दाता, मन का विश्वास कमजोर होना
हम चले नेक रस्ते पे हम से, भूलकर भी कोई भूल होना ||

हमना सोचें हमें क्या मिला है, हम ये सोचे किया क्या है अर्पण
फूल खुशियों के बाँटे सभी को, सबका जीवन ही बन जाए मधुबन
अपनी करुणा का जल तू बहा के, कर दे पावन हर एक मन का कोना ||

इतनी शक्ति हमें देना दाता, मन का विश्वास कमजोर होना
हम चले नेक रस्ते पे हम से, भूलकर भी कोई भूल होना ||

Together **E**ach **A**chieves **M**ore
(**TEAM**)

Every end, so also end of this e-Bulletin, is a pause for a review, before Resuming of the journey far beyond ...