



TOWARDS AN EDUCATED INDIA: STRENGTHENING OF BASIC SCIENCE

science education. Suggestions may look too much idealistic but need such approach.

(This article has been authored by Prof S. N. Jogdand, Vice Principal, KVP College, Navi Mumbai. He may be contacted at snjogdand@gmail.com.)

BASIC sciences are losing affection and therefore importance. It has been a point of concern over last few years all over the world. Today's disillusionment with science was highlighted by the World Conference on Science organized by UNESCO and ICSU in their consecutive reports. Russian survey shows that science is chosen by barely 6% and engineering by 2%. In France also only 25% from schools went to science when in University in 2000.

Countries like Korea have taken steps like allocating 2/3 of increased seats during admissions to natural sciences and engineering degree programs with a view to redress this problem. China's strength in basic sciences gives it an edge in areas such as nanotechnology, drug discovery, energy research. Chinese are positioned to take over dominance of science including publication of journals in a big way. The United States has started losing its worldwide dominance in critical areas of science and innovation as seen from the number of papers in major professional journals. Crunch on research grants, war with Iraq, Bush's academic policies did divert thousands of brilliant young Americans to study business instead of science.

A recent survey by the African Network of Scientific and Technological Institutions reports that about 40% of the posts in S&T training institutions are vacant,

largely because of low funding, a poor image of science as a career, losses to HIV/AIDS and brain drain.

Who is responsible?

Scientists: If basic sciences are losing prominence, to some extent, this disaffection is the fault of scientists. People have become disillusioned by all the broken promises they made like, cure for cancer / HIV / AIDS, eradication of malaria / tuberculosis, etc. Over-publicizing the achievements before real successes should stop.

Governments: Governments think of basic science as a bad investment and show more interest in applied science. When this happens, it becomes less attractive to students as well as the general public. Chemistry is the biggest victim.

Media: The media is also to be blamed for the current image of sci-

Basic Sciences are diminishing in their appeal as a chosen field



the successes (create hype) of applied subjects (e.g. biotechnology) more and focus on failures of basic sciences.

Academicians: It is high time academicians take steps to prevent basic sciences from falling into disgrace.

Parents: Parents often pressurize their kids to become IT

Steps taken in India

The Union Science and Technology Ministry has proposed a two-year financial grant to fresh science graduates (M. Sc and Ph. D.) to help them carry on with their higher studies. The grant will act as a financial cushion and will infuse confidence among the science graduates to continue with their research in basic sciences. Summer programs, student visitorships, etc. can motivate bright young students to research careers in sciences. Some institutions have already started promoting basic science through nurture programs. The nurture program of JNCASR, Bangalore in

ERs have embraced the successful American University model of combining teaching and research in a single institution.

The Department of Atomic Energy (DAE) in collaboration with the University of Mumbai has set up the Centre for Excellence in Basic Sciences (CBS) that offers undergraduate science education and research opportunities. It aims at improving quality of basic science education in the country at the undergraduate level. Various research works are being carried out at CBS in close association with Institutions like TIFR, BARC, University Institute of Chemical Technology (UICT) in various areas including nuclear physics, astrophysics, archeo-astronomy, free electron lasers, biophysics, genetics, cell and developmental biology, etc. Even the Planning Commission of India has recommended recently that eminent research institutes like the Tata Institute of Fundamental Research (TIFR) and the Indian Institute of Science (IISc) embark upon undergraduate education by establishing allied institutions. These are only some of the measures.

Diagnosis of the situation and integrated approach of actions are required if we have long-term goals in mind on the subject of strengthening basic

EXPERT SPEAK: HIGHER EDUCATION FORUM

professionals, engineers and doctors in lieu of becoming scientists. A great majority of meritorious science students of the senior secondary stage opt for professional careers in engineering, medicine, computer science and allied fields compared to basic science.

Employers: Employers are interested in translational skills and in knowledge workers. Resultantly basic sciences do not woo employers.

Chemistry and of NBHM in Mathematics is a novel step, which can help some scientific talent come up.

The Indian government has recently announced government-sponsored science education in India through ninety new institutions. Five Indian Institutes of Science Education and Research (IISER) in Pune, Kolkata, Thiruvananthapuram, Chandigarh and Bhopal would help advanced scientific research in the basic sciences. The establishment of the IISERs will correct a key misguided policy of post-independence India that separated teaching from research. The newly formed IIS-

The BMM fact-file

Bachelor in Mass Media has become one of the most coveted courses, for a number of reasons

BY KAVERI ROY

CAREERS in the media industry have seen a huge demand in the recent years. On one hand, there is an ever increasing number of news channels while on the other there is an escalating need for advertisers. The need to have an out-of-the-box career coincides with the large industry demand. Because of this, Bachelors of Mass Media, which was introduced by the Mumbai University a decade ago, has become a benchmark in itself.

The BMM is a 3-year graduation program by the coveted Mumbai University and it brings a mix of 36 different subjects as a part of its curriculum. The course has been an instant hit with the youth, thanks to the blend of theory and practical projects in the course. According to Dr. Shikha Dutta, BMM Coordinator of Vivekanand Education Society's College, "BMM is among the few self-financing courses of the Mumbai University which provides students a thorough knowledge of the media industry. Students can specialize in Advertising & Journalism under faculties who are industry professionals

themselves. It is a very young course that concentrates on making a strong base for aspiring professionals of the media industry and the approach throughout the three years of graduation is very professional unlike the regular courses."

The charm of BMM

BMM has been popular for the wide spectrum of career avenues it throws open to a student and the intriguing way of teaching, that the syllabus incorporates. Explains Prof Sneha Subedar, BMM Coordinator of



COURSES
Ruia College, "The subjects are different and the focus is on internal assessments. Of course, the industry's glamour remains a reason of attraction towards the course. However, it is also the experience of doing unusual projects like movies or researching of local and global topics for evaluation which helps them to complete this rather tough graduation course."

Joining BMM

Until 2008, students applying for BMM had a three level entrance test, which has now been done away with. Students are now selected based on their HSC or equivalent 12th standard board examination percentages, with a minimum score of 50%. Explains Prof Madhuri Rajjada, BMM Coordinator at Saint Xavier's College, "Students from different backgrounds apply for BMM and can make it with their percentages but only those who are passionate enough get success and excel right away. It is a graduation course well equipped to help students reach a certain level but one needs to be really cut out for the course since it is very unlike the regular base degree courses." She further adds, "A creative bend of mind, exceptional social skills, commitment, self discipline are some key-requirements to join BMM."

Here is what some people, who have done BMM, say about the course and how it has helped them;

PINKY SHAH, 22, Client Servicing Executive with an advertising firm and a BMM graduate

"If I had to get into a career as intriguing and creative as advertising, a regular graduation course wouldn't ingeniously enrich me. BMM not only gave this infectious confidence and intellectual mischievousness in me but it has given me that knowledge which cannot be imbibed like the mugged notes that happens in most other degree-courses."

TEJAS RANE, BMM graduate

"I wasn't too aware of BMM before I opted for it except that it could help me since I looked forward to a career in media. It was during the entire graduation that I found my calling for journalism. The true essence of BMM for me has been the self-discovery of my talent and passion."

ANIVESHKA PRAKASH, BMM graduate

"I had my goals set to be a copywriter and hence chose BMM for my graduation. However, I found more fascinating fields to explore in the course of my graduation that involved film-making and editing. The emphasis on practical learning encourages that craziness which gradually becomes your professional strength of possessing an imaginative bend of mind."

Era of New Age Learning

Every individual has an innate urge to create, experiment, explore and discover. But how to nurture it - is the moot question

TODAY'S conventional education system promotes learning through rote. Students are used to learning theory verbatim and are bowled over when it comes to applying this practically. Moreover growing numbers of student are experiencing high stress levels and thereby showcasing suicidal tendencies. This has been very aptly shown in the recently released movie - 3 Idiots.

It is no longer sufficient to operate a school under an industrial model that simply teaches the 3 Rs of education - i.e. Reading, Writing and Arithmetic. Students of today need to be adept in creative thinking, digital literacy, collaboration and teamwork skills. In addition, they also have to evaluate and apply knowledge in the rapidly changing information rich environment.

A few of the multiple challenges that the education-sector faces include:

- Increased global competition-schools are now expected to develop skills that are ahead of times. Student success has to be measured in terms of holistic outcomes, not just academic scores
- Increased pressure for schools to be accountable for the performance of the students
- Tackling with resistance to change systems and methods
- Tendency to pigeon-hole technology instead of seeing it as a platform for transformation towards the above mentioned points
- Tackling of errors associated with implementation of technology within the educational framework



TRENDS
As per studies done, on the retention and understanding of students:

- 90% of what they learn when they teach someone else/use immediately.
- 75% when they practice or do it themselves.
- 50% when engaged in a group discussion.

education? If it is simply amassing information then that in times today can be left to computers alone, and that shall result in all of us being 'intellectual clones'. Unless of course we nurture and motivate students to ideate, innovate and create individually. For doing that, 'Innovation' should be ingrained in the classrooms and in the teaching methodology itself. Every student should follow a unique and preferred method of learning. If the techniques of learning are evolved based on individual student's requirements, it will certainly keep them engrossed. In other words, the challenge is making learning fun.

It is not about teaching a child a lesson for a day; but it is about nurturing her curiosity, so that s/he continues the learning process as long as s/he lives. For doing that we must look at education from a holistic perspective and think of innovative solutions that keep the will and choice of the student at the centre of all learning processes.

- 30% when they see a demonstration.
- 20% of what they learn from audio-visual aids.
- 10% of what they learn through reading.
- 5% of what they learn through a lecture

It is interesting to know that 90% of learning is retained with students when they teach someone else / use learning in real life immediately.

Looking at the scenario, there is a mounting need to bring about innovation in the existing education systems. An educational model with community involvement and more hands-on application of theoretical knowledge should evolve. With the changing times and newer technological innovations, schools should adopt new education systems that goes beyond the school text books and make learning more engaging, interactive and exciting.

It is an era of new age learning that can be implemented by the unique technique of education philosophy called 'Edutainment' which means fusion of entertainment with education. Technological advancements that govern this era can be used to assist the education sector. The intent of 'Edutainment' is to organize education through means and mediums that are intrinsically exciting for students across all ages. This can be achieved through innovations like digitized educational content in a story-based format, interactive comic textbooks, graphic novels,

motion films, educational toys, hands-on activities and projects for students, etc. This revived pattern of learning will promote the habit of self-learning and analytical thinking among the students.

A successful educational structure involves not just students and teachers but calls for active contributions from all the members of the society. An ideal situation is where a teacher prepares lessons to be taught based on the aptitude of the students. Parents when periodically updated about their ward's performance will be able to participate in administering changes in the child's surroundings. Besides, the school administrator should maintain track records of teachers and students' performance. Corporate entities should also be forthcoming to mentor students by directly and indirectly involving themselves in curricular and co-curricular activities, this will give students a taste of future innovations in the marketplace.

With developmental educational reforms, better career avenues and innovation, Education industry can be developed into an experiential market. Technology can be integrated into the learning process to make it joyful, playful and personal. Education can certainly move out of the 4 walls scenario and become 'Anytime, Anywhere, Anything'.

This article has been written by Saurabh Saxena, Director- Mexus Education Pvt. Ltd.

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