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# Science popularization is the Need of Society: Speakers



**Hina Baloch**

**July 8, 2019:** During a daylong introductory seminar on China Pakistan Network of Science Popularization (CPNSP) the experts from scientific organizations, academia and media houses emphasized on the need of science popularization in our society. The experts developed a consensus that the better public understanding of science can be a major element in promoting national prosperity, in raising the quality of public and private decision-making and in enriching the life of the individual.

These are nationally important long-term aims and require sustained commitment if they are to be realized. Improving the public understanding of science is an investment in the future, not a luxury to be indulged in when re-

sources allow. The seminar was organized by Technology Times in collaboration with Pakistan Academy of Sciences. The event was attended by a large number of representatives from different R & D organizations, academia, media and university students.

The chief guest of the Seminar, Mr Jia Wee, First Secretary of Embassy of China in Pakistan extended gratitude to Technology Times to propose the China Pakistan Network on Science Popularization. He also appreciated the role of Pakistan Academy of Sciences for organizing such important Seminar.

He further said, "Science is a major component and it very important for socio-development. As Pakistan has immense educational peoples since through the joint efforts of China-Pakistan the CPNSP have been launched. A seminar was arranged in China on May 2019 and now it formal-

ly moves to Pakistan. It shows the successful launch of this Network. Through this venture science popularization will go further and better between both the countries".

At the welcome address the President of Pakistan Academy of Sciences Prof Dr Qasim Jan said that this Seminar will address the question of what science popularization can do to boost the social as well as economic development of the society and ultimately country. He proposed to address this question by following the successful model of China and hoped that this Network will pave way to enhance science popularization collaboration between two brotherly countries.

Sayyed Paras Ali, CEO SciTech Media while delivering key-note presentation briefed that proposed CPNSP: China Pakistan Network on Science Populariza-

tion will be a flagship network to enhance science popularization under Belt & Road Initiative.

He said "The strategic objective of this Network is to maintain and strengthen support by the public for popularization of science, technology, and innovation in a knowledge-based society. This initiative of CPNSP is for utilizing, directing and encouraging associated systems to promote science, technology communication popularization in building human resources and institutional capacity".

Prof Dr I.E. Qureshi, former Executive Director COMSATS shed light on the importance of science diplomacy while mentioning that Science Diplomacy is most needed in sectors of global commons and shared threats. It is also required to realize the aspirations of peace and prosperity by all nations. Much of what goes under the rubric of Science Diplomacy is not new, but what

is new is a clear understanding about the need to focus on scientific inputs in all level of decision making at national and international level.

He further said that the countries like Pakistan don't realize the importance of using a well-tested formula for development. It is because of lack of interactivity between scientific community and decision makers. The remedy lies in Science Diplomacy.

During the presentation Ms. Rehana Batool, Principle Scientific Officer of Pakistan Science Foundation said that the need of time is to analyze the relationship between science, technology, economic and social development and its impact on public.

She added that keeping in view the importance of informal education in promotion of science and technology, Pakistan

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Sayyed Paras Ali

## CPNSP — China Pakistan Network on Science Popularization

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# CPNSP — China Pakistan Network on Science Popularization

**A**t present, a new round of scientific and technological revolution and industrial transformation are reshaping the structure and competition of the world economy. In the context of the in-depth development of globalization, informatization and networking, the openness and mobility of innovation elements have increased remarkably.

The boundaries between scientific research and industrialization have become increasingly blurred. The spread of science and technology in the world has spread and the world economy has become a close connection.

Using science and technology to promote economic and social development has become an international consensus. To solve the economic development problems facing the World, it is urgent to upgrade the level of scientific literacy.

### “Belt and Road Initiative” to build scientific and technological innovation cooperation

Scientific and technological innovation cooperation is an important part of the joint construction of the “Belt and Road” and is a key area for enhancing the level of cooperation between China and countries along the line. Compared with countries along the route, China’s scientific and technological innovation resources are abundant, and the technological advantages formed in different fields are conducive to enhancing the level of international cooperation.

Deepening scientific and technological cooperation is beneficial to enhance scientific literacy in Belt & Road Initiative (BRI) member countries, which can be achieved through enhanced science popularization, which ultimately will trigger the success ratio of BRI itself.

### CPNSP

China Pakistan Network on Science Popularization – A flagship network to enhance Science Popularization under Belt & Road Initiative

The strategic objective of this Network is to maintain and strengthen support by the general public for popularization of science, technology, and innovation

in a knowledge-based society. This initiative of CPNSP is for utilizing, directing and encouraging associated systems to promote science, technology communication popularization in building human resources and institutional capacity. This Network will also support the BRI scientific activities.

### Objectives

The objectives of China Pakistan Network on Science Popularization are:

- To maintain and strengthen support by the general public for science, technology, and innovation popularization in a society that is becoming more and more knowledge-based;
- To popularize science and technology in building human resources and institutional capacities through encouraging dialogue; maintaining popular science activities; assisting in training, science communication research and development; dissemination of information; training the stakeholders in development of a scientifically rich society in Pakistan and China;
- To form, maintain and promote an association of member organizations which will engage in the proactive learning and utilization of Science Communication for Science Popularization;
- To carry out research, development in the field of Science Popularization and use of Science Communication through an association of member organizations and allied institutions;
- To help develop infrastructure for Science Popularization through Science Communication;
- To develop world class Science Communication institute(s) in Pakistan and China;
- To develop an extensive pool of academically and technically skilled Science Communication manpower at all levels;
- To popularize extensive use of science and technology and its applications in trade, industry, homes, agriculture, education, health and other segments of society;
- To create strong China Pakistan relations through pro-



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forcing networks for Science Popularization; and last but not the least

- To facilitate dissemination of knowledge and technology flow(s) from comparatively advanced societies to the less advanced ones.

### Five Year Plan

The proposed Five-Year Plan of CPNSP is focusing to enhance Science Literacy in Pakistan and China. This Plan is based on the series of science popularization activities and target as part of the science literacy development initiatives of the CPNSP in Pakistan and China.

This Five-year plan is consisting of Establishment of Science Centers, and Science Corners;

Professionally qualified Human Resource in science journalism will be produced to be absorbed by media and S&T organizations in public and private sector

### Establishment of Science Centers

The first and foremost target of the CPNSP is to establish Science Centers which will be nucleus of all activities. The Headquarter of these Science Centers will also work as Science Popularization Research Institute. The other Centers will work as Centers of Excellence.

These Centers will impart knowledge for advocacy of science and technology and capacity building of Science Journalists as

Professionally qualified Human Resource in science journalism will be produced to be absorbed by media and S&T organizations in public and private sector

### Establishment of Science Corners

The second target of this Network is to establish Science Corners. The objective to establish Science Corners is to inculcate scientific and innovative thinking at grassroots level. These Science Corners will be established in public and private schools and colleges. These Science Corners will be dedicated in the name of celebrated Chinese and Pakistani scientists to familiarize students with their heroes.

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Dr. I. E. Qureshi

## Science Popularization vs. Science Diplomacy

Science Communication is a sine qua non for present-day societies. This is so because the influence of no other creative activity can match the impact of modern science and technology on the lives and livelihoods of peoples .....



# Science Popularization vs. Science Diplomacy

Science Communication is a sine qua non for present-day societies. This is so because the influence of no other creative activity can match the impact of modern science and technology on the lives and livelihoods of peoples across the world. This is seemingly a truism, but it carries a plethora of connotations having specific practical ramifications.

In this article it is argued that Science Communication entails at least three sets of activities as shown in the figure.

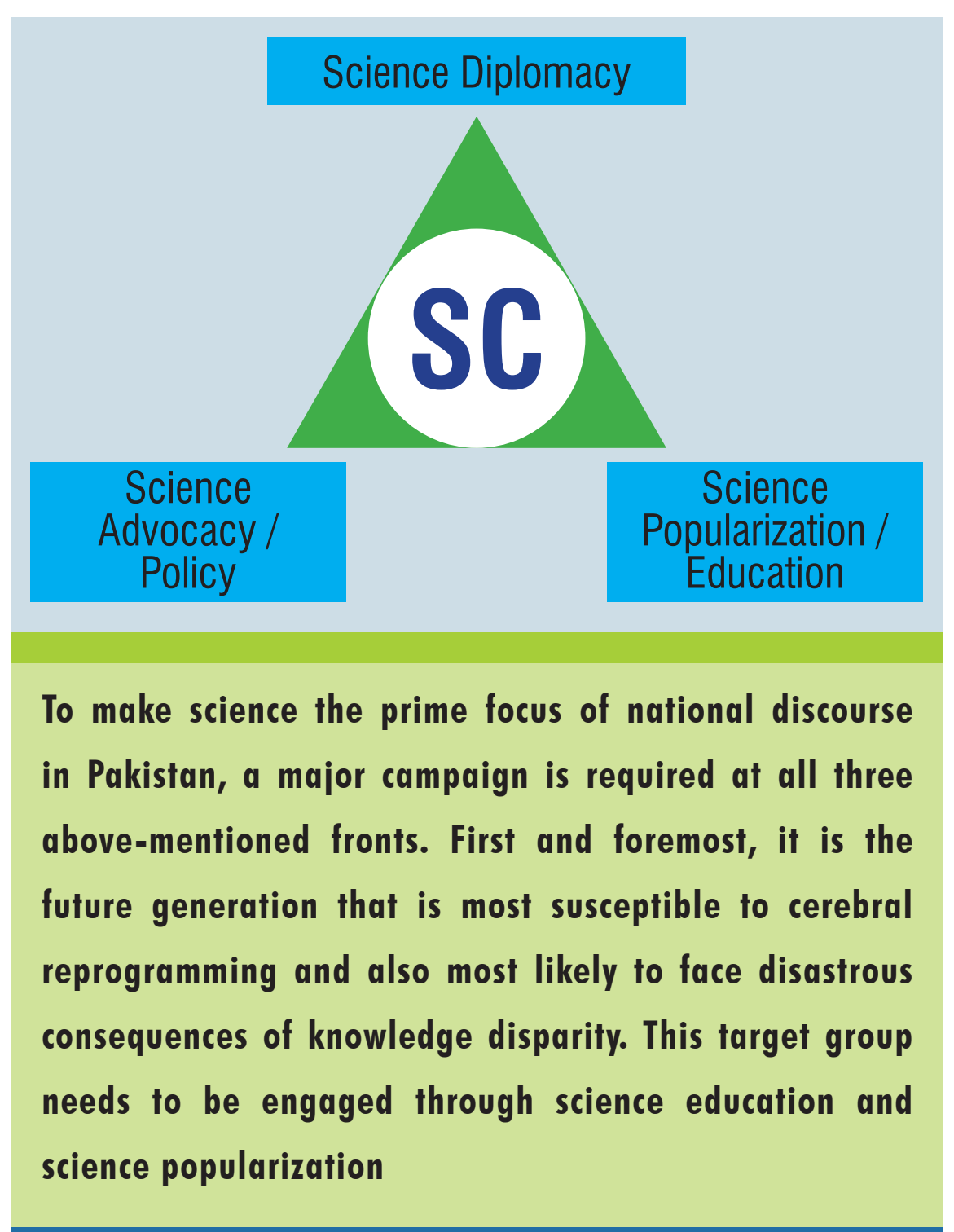
The equilateral triangle symbolizes equal order of significance accorded to activities at three vertices; namely, science popularization, science advocacy and science diplomacy. At the centre of the triangle lies the wizardry of Science Communication (SC).

It is worthwhile reminding ourselves that the activity of seeking rational explanation about physical world has flourished in the past in different parts of the world at different epochs of history. The thought process that gave rise to ancient technologies may not be called 'scientific' in modern parlance, but it was, surely, a precursor of the methodology that evolved into systematic studies of nature. In whatever form the human ingenuity manifested itself anywhere in the world, one of its consequences was inevitable; it led to great advantages in trade and war for its proprietors. Episodes of economic and/or military prowess have been witnessed in Middle East, Persia, North Africa, Indus Valley, Mediterranean region and China. The ascendancy of present-day Europe after industrial revolution of 18th century was a consequence of renaissance, which led to a burst of intellectual power and scientific discoveries. This made it possible for a small island state of Britain to subjugate more than half of the world. USA followed suit and became the greatest hegemonic force in the history of the world. So, while it is a 'feel good' notion that science is a common heritage of mankind, but the fact is that science and the technologies based on it are coveted treasures that are acquired with fierce competition. A society that ignores science is destined to remain in a state of perpetual doom and gloom.

To make science the prime focus of national discourse in Pakistan, a major campaign is required at all three above-mentioned fronts. First and foremost, it is the future generation that is most susceptible to cerebral reprogramming and also most likely to face disastrous consequences of knowledge disparity. This target group needs to be engaged through science education and science popularization. It is to be remembered that science is not simply a set theories and formulas; it is a way of thinking — a way of rationalizing what is observable in nature through unbiased, systematic and logical analysis. This kind of mental habit can best be inculcated in young students; the younger the better. The catch here is that their interest in understanding physical world through observation and experimentation has to be aroused before nature takes its course and enquiring mind are evolved; hence the need for making science an enjoyable experience for students at different levels of educational system, and popularizing science in the communities where the students live and learn.

Going ahead with this mission needs planning, institutional coordination and resource mobilization. None of this is possible at large scale without state patronization. Sans a total commitment on the part of policy makers and ownership at the part of national political leadership, not much headway can be made with individuals-based isolated efforts. This leads us to another facet of Science communication; namely, science advocacy. The administrative and political leadership in Pakistan and most developing countries resides with people who are apparently not convinced at heart, in spite of their public utterance, that science and technology is the key to progress and prosperity. How else can one explain the absence of Science Policy from manifestos of major political parties, and what message is conveyed when the Ministry of Science and Technology remains without a Minister for extended periods of time. A strong team of science communicators, with skills of lobbying and advocacy, can perhaps convey the worth of scientific knowledge to skeptical power brokers.

If such a team is not at hand, what about seeking help of artic-



ulate opinion makers from elsewhere in the world? Perhaps it is not a bad idea to learn from the best-practices of others. Certainly, it is desirable to create partnerships with successful ventures of science popularization and science advocacy across the world. Even better is the partnership with our great neighbor China, where China Research Institute for Science Popularization (CRISP) has made great strides in making scientific literacy a part of every day life. The China-Pakistan Economic Corridor (CPEC) offers great opportunity to do so. The creation of enabling environment for international cooperation requires diplomacy. The 'Diplomacy for Science' is, therefore, an integral part of a grand plan, in which SC

plays a leading role. Needless to say that a communication channel between scientists and diplomats is a prerequisite for this exercise to be successful.

The triangular role of SC elaborated here is hopefully well understood. The really difficult questions arise when plans are put into action, even under the most favourable circumstances. Who can communicate scientific knowledge in a way that is most effective for a particular target group? Is it sufficient to convey only what has been discovered through scientific research, or is it also necessary to convey the spirit of scientific discovery and the excitement that it generates? Is sufficient number of scientific

workers able or willing to spare time for SC campaign? Are there enough journalists with necessary capacity to create public awareness about what is happening in the world of science? Are social scientists willing to study and bring into lime light the implications of new technologies, which are cutting deeply into the social fabric of client nations? These and many other similar questions beg to be pondered upon and to be answered soon enough, before the process of natural selection in the form of "survival of the fittest" takes over.

The author is the former Executive Director of the Commission on Science and Technology for Sustainable Development in the South (COMSATS).





Dr Wang Guangnian

## Science Popularization the Key for China's National Development

China and Pakistan have maintained bilateral friendship for generations. In recent years, under the impetus of the "Belt and Road Initiative" and the joint efforts of the Chinese and Pakistani people, the China-Pakistan ....



# Science Popularization the Key for China's National Development

China and Pakistan have maintained bilateral friendship for generations. In recent years, under the impetus of the "Belt and Road Initiative" and the joint efforts of the Chinese and Pakistani people, the China-Pakistan Economic Corridor has made significant progress in the past five years.

From May 21st to 24th, we jointly held the China-Pakistan Science Communication Discussion and Exchange activity in Hangzhou. It can be regarded as opening a door for exchanges between China and Pakistan in the field of science communication and laying a solid foundation for future cooperation of science communication between our two countries.

With the current globalization trend, science and technology are profoundly influencing the future and the prospect of a country. They have never exerted such a great influence on normal people's lives like today. Scientific and technological progress is an important indicator of comprehensive national strength competition and plays an important role in improving China's comprehensive national strength and enhancing its international influence.

Today, China is gradually growing into an emerging technology power. In recent years, China has made outstanding achievements in science and technology. In 2017, China's COMAC C919 made its first flight successfully, which marks China's participation in the monopoly market of large civil airliner. Chinese lunar probe, the Chang'e 4 landed on the moon's far side for the first time. These scientific and technological achievements will develop the new knowledge, new elements and new kinetic energy needed for future economic and social development, and will help China accelerate its transition to an innovative country.

Scientific and technological innovation and science popularization are inseparable. The scientific quality of entire people determines the extent to which scientific and technological innovation leads the development of the country and affects the implementation of it. Our General Secretary of the CPC Central

Committee, Mr. Xi Jinping said that technological innovation and science popularization are two wings of achieving innovation and development. Without the general improvement of the scientific quality of the entire people, it will be difficult to establish a large high-quality innovation team and to achieve rapid transformation of scientific and technological achievements.

When more than 30 advanced countries entered the ranks of innovative countries, their proportions of citizens with scientific quality exceeded 10%. In 2018, the proportion of Chinese citizens with scientific quality reached 8.47%. Our goal is to reach 10% by 2020 and to enter the ranks of innovative countries.

Science popularization has played an important role in some major government projects. Zhejiang Province is one of the most developed provinces in China. In order to solve the energy problem, our provincial government decided to vigorously develop nuclear power. However, if the public lacks the necessary knowledge of nuclear power, it will easily lead to public panic. Therefore, we carried out nuclear science popularization in our province, and the good result proves that conducting relevant science popularization before implementing large projects would be effective. Science popularization also plays a significant role in refuting rumour and advocating the scientific life, as well as forming a social custom of learning, using and loving science in the whole society.

The China Association for Science and Technology (CAST) has played an important role in improving the scientific quality of the entire people and cultivating the soil for the scientific and technological innovation development. CAST is composed of national societies, member societies, research associations (societies) and local branches. Its organizational system extends to most of the natural science disciplines and most industrial sectors. CAST is the main force in the popularization of science and technology, and the organizer, mobilizer and implementer of improvement of the scientific quality of the entire people.

We have taken great efforts to do the following things.



First, we applied a working mechanism that the government promotes and the whole society participates in the scientific quality of the entire people. In 2002, China promulgated the "Law of the People's Republic of China on Promulgation of Science and Technology", which is the only law in the world that aims to improve the scientific quality of the entire people. In 2006, the State Council promulgated the "Program Outline of the Scientific Quality of the Entire People". This is a systematic, comprehensive and specialized action plan formulated by the Chinese government to improve the scientific quality of the entire people. At the same time, CAST cooperated with Other ministries and commissions to set up a work office to take joint actions. CAST takes the use of a huge network-based organizational system and the majority of scientific and technological workers and Media workers to participate in science popularization. The China Association for Science and Technology investigates on public science quality every two or three years. Make sure that the third week of September each year is the National Science Day, and various science popularization activities are held on the National Science Day.

Second, CAST aims to carry out modern science and technology museum system innovation activities. Chinese government implements financial subsidies to the science and technology museum affiliated to the Association for Science and Technology every year to realize the free opening of the science and tech-

nology museums to the public. Meanwhile, the mobile science and technology museum, the science caravan, and the digital science and technology museum are used as extensions to form a modern science and technology museum system.

Third, CAST will carry out the science popularization of scientific resources. Today, I am really pleased to learn that many experts from the Pakistan Academy of Sciences (PAS) have also participated in this exchange activity. As an emerging technology power, every year many scientific and technological achievements emerge in China. Carrying out the science popularization is a problem that needs to be explored. In China, the Chinese Academy of Sciences has established a scientific lecture group of old scientists. Over the past 20 years, it has traveled all over the country, holding more than 23,000 lectures and attracting more than 8 million listeners. It is very touching that these old brilliant scientists only charge low lecture fees. The Zhejiang Association for Science and Technology I am working for has published scientific and technological achievements through public media by using the popular scientific language to interpret the latest scientific and technological achievements and cutting-edge science, and making full use of the media and Internet communication.

Fourth, CAST will carry out the development of science popularization culture products. CAST holds a China (Wuhu) Popularized Science Products Exposition every year in Wuhu, Anhui Province. The Zhejiang Science

and Technology Association has created China's first large-scale science popularization melodrama, has now made 49 tours in the Zhejiang Province; Tencent, Today the Headlines, and other media jointly established the Science Communication Media Convergence Alliance. Besides, we have conducted a visit to NetEase and Wasu Media during the last China-Pakistan exchange activity. In March of this year, we conducted a live broadcast of the "China-Pakistan Science Popularization Link — Da Vinci Surgery". It spreads advanced medical technology of Zhejiang, China to Pakistan to achieve transnational medical science exchanges. "Science +" science popularization activities like this are held more than 30 times a year in Zhejiang, many of which are broadcast live over the Internet, with at least 300,000 audiences per live.

Many science popularization practices in China and Pakistan have commonalities, such as the establishment of National Science Day, the exhibition tour of science caravans, and the organization of adolescent's science and technology contest. Due to limited time, I will leave some contents to be explained in the future. I am really looking forward to further exchanges and cooperation with Pakistan, to promote the scientific quality of the entire people, and to create a science communication network system. To bring science closer to the public, and to bring the public closer to science. I hope that the science communication of China and Pakistan will have a bright future.





Shafiq Amir Minhas

## Role of Media in Developing Public Understanding of Sc. & Tech.

Science infuses our society. Most of our industry and much of our national prosperity are based on science. In the home as well as at work we use machinery that is the product of this industry. Science affects many, if not....



# Role of Media in Developing Public Understanding of Science and Technology

Science infuses our society. Most of our industry and much of our national prosperity are based on science. In the home as well as at work we use machinery that is the product of this industry. Science affects many, if not most, policy issues of national and international importance. It also affects a wide range of personal activities, from health and diet to holidays and sports.

Importantly, why it matters that all sections of the public should have some understanding of science and to stimulate action by scientists and others to improve this understanding. These are issues with which all science and technology concerns have long been concerned. They have become important now that science and technology directly affect, to an unprecedented extent, the details of our daily lives and the prosperity of the nation.

The terms 'Public Understanding of Science and Technology' raised three problems of definition, as of 'the public', of 'understanding' and of 'science'. 'Science' we interpreted broadly to include mathematics, technology, engineering and medicine, and to comprise the systematic investigation of the natural world and the practical application of knowledge derived from such investigation.

Though technology and engineering have a sense of direct purpose not usually associated with basic science, there is a continuum of activities that extends from basic through strategic to applied research and development. These activities are all based on common underlying scientific principles.

Today's basic science is, after all, the foundation for much of tomorrow's technology. 'Understanding' for us included comprehension of the nature of scientific activity and enquiry, and not just knowledge of some of the facts.

Clearly, the level of understanding needed depends on the purpose, for example in relation to an individual's occupation and responsibility. Finally, we took 'public' to mean mainly the predominantly non-scientific public. The public can be classified in a variety of ways, for each

of which there may be different reasons why an understanding of science is important, and different approaches to achieving it.

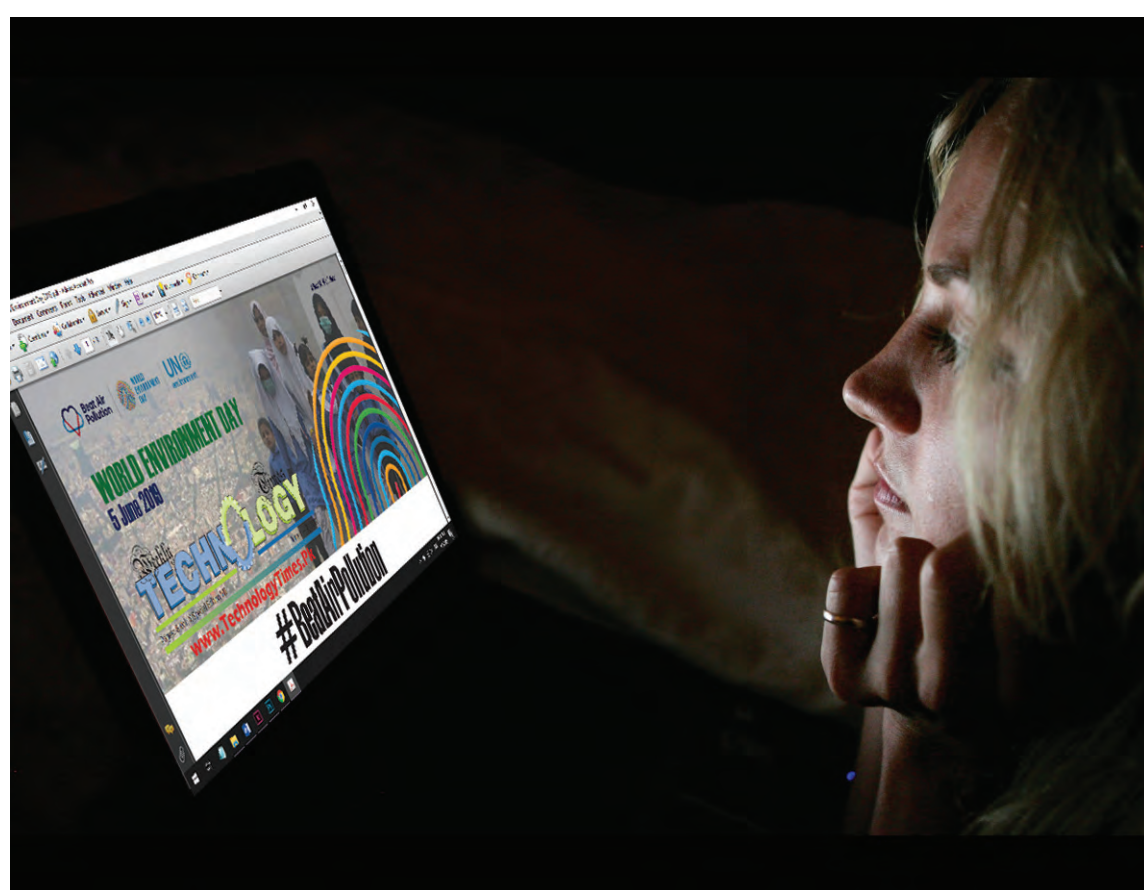
I like to emphasis on Why it matters?

Would the world be a better, or even a different, place if the public understood more of the scope and the limitations, the findings and the methods of science? The better public understanding of science can be a major element in promoting national prosperity, in raising the quality of public and private decision-making and in enriching the life of the individual. These are nationally important long-term aims and require sustained commitment if they are to be realized. Improving the public understanding of science is an investment in the future, not a luxury to be indulged in when resources allow.

There is a strong prima facie case for the existence of a link between public understanding of science and national prosperity, though the link may be as difficult to quantify as that between a company's research and development effort and its overall profitability. Strong economies now almost all depend on a strong manufacturing industry based on science and technology, which are developing at an unprecedented rate. The introduction of new technologies often stimulates major developments in existing technologies.

Improvements in existing technologies demand some degree of scientific and technical understanding from all concerned-the designer, the operative, the manager and the decision-maker. The new technologies, such as those involved in electronics, synthetic materials, telecommunications or biotechnology, have developed from the underlying science. Their successful exploitation requires those responsible for the nation's industries, as well as a supportive government, to be aware of science and technology, to recognize their potential value and to accept the opportunities they can generate. Successful exploitation also depends critically on the availability of adequately trained and skilled scientific and technological manpower.

Science and technology therefore should be major considerations in public policy. Whether



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far (a) the decision-makers and their advisers, and (b) the public to whom they are ultimately responsible, understand the scientific and technological aspects of each issue and, more generally, the scope and limitations of scientific method.

It also depends on the willing-

tific community to explain these aspects publicly. There is clearly a strong case for Parliamentarians, in particular, to have a much better understanding of science and its relevance to their responsibilities than they now have.

The scientific community also needs to do much more than

Better overall understanding of science would, in our view, significantly improve the quality of public decision-making, not because the 'right' decisions would then be made, but because decisions made in the light of an adequate understanding of the issues are likely to be better than

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## From page 1: Science popularization is the Need of Society: Speakers



Science Foundation (PSF) has taken many steps including establishment of science centers in different cities, a state-of-the-art Pakistan Museum of Natural History in Islamabad, mobile science caravans, and science exhibitions in different regions of the country.

Dr Wang Guangnian, Director of Science Popularization, Department Zhejiang Association for Science and Technology (ZAST), China delivered a video lecture to the participants with the topic “Science Popularization the key for the national Development-Case study China”.

Shafiq Minhas, News Editor at Dosti Radio FM98, in his talk said that the media can exert a powerful influence on public understanding of science. The scientific community traditionally regards the mass media with some suspicion and is, overall, ignorant of the way they work and the nature of their constraints. The more ‘popular’ sections of the media, on the other hand, too often make relatively little effort to discuss science in anything other than a superficial and mostly sensational way, and do not generally understand the nature of the scientific enterprise. These attitudes

need to be changed. To do so will require a considerable but challenging and worthwhile process of mutual education.

Mr Aleem Ahmed, Editor Global Science Magazine gave a lecture through skype said that keeping in mind CPNSP importance and significance and the changing patterns of economic development, the today’s challenge for Pakistan is to get ready the capability of science and technology for the progress and development of the Country, which can only be achieved through enhanced science, technology communication popularization.

At the end Ms. Hina Baloch, In-charge Editorial Section, Technology Times while giving the concluding remarks thanked all speakers, participants and organizers for their presence and continuing interest for science popularization in Pakistan.

She further added that it is heartening that Technology Times since 2010 has grown significantly over the years into a strong science advocacy movement and is now recognized as the premier scientific media of Pakistan. The journey of Technology Times from its first issue published on January 4, 2010 to date has been

quite remarkable and exciting as it helped in achieving significant breakthroughs in different fields of science communication popularization to create a scientific culture in Pakistan.

The participants of the Seminar are of the view that popular scientific and technical magazines such as Technology Times and Global Science are important sources of scientific information and education for the scientifically attentive public. They believe that scientist without help of Media cannot build a scientific culture in the country which is extremely needed task. ♦

## From page 2: CPNSP: China Pakistan Network on Science Popularization



## Science Communication Program

One of the most important programs of the CPNSP is Science Communication program. In other words, this will be the lead program of this Network.

This will be an exchange program for capacity building of Pakistani and Chinese science communicators. The Fellowship Award will build capacities of both side journalists whereas, Science Story Writing Award will highlight the importance of sci-

entific literature writing to bridge cultural gaps along the Belt and Road route. This program will comprise events like Training of Trainers, Training Workshops, Seminar of Stakeholders, and International Conferences.

This Science Communication program will also support to form Pakistan Science Media Center – which is a leading trend to engage and bridge mainstream media and science media.

## STEM Contests

Science Technology Engineer-

ing & Mathematics – STEM contests are now a days most popular source of informal knowledge sharing. Speech, painting, essay writing, and quiz competitions will be arranged on district, provincial, and national level. Which can further extend to BRI member countries.

## Hands-on Activity, Science Fairs

Another important target of CPNSP is to organize Science Fairs at all level not only in China Pakistan but along the BRI route.

These hand-on activities will trigger the innovation at grassroots level, which will infuse scientific thinking in general.

## National Science Day celebrations

National Day celebrations are very effective to own something which is very important. Pakistan yet not decided its National Science Day, but it is imperative to fix such science day at national level. SciTech Media is celebrating 4th January as National Science Day since the launching of Technology Times in year 2010. Celebration of National Science Days of other BRI member countries will create strong cultural and scientific ties along the Belt & Road line.

## Tech Radio – FM Radio Channel

Another target of CPNSP is to establish Tech Radio. FM radio is revitalizing its importance in Pakistani as well as among international youth. It is a good medium to transfer knowledge in a lighter mood of edutainment.

## Tech TV – Web Based Science TV

One of the another most important targets of this Network is establishment of web-based

Technology Television the TechTV. TechTV will provide a platform for Chinese and Pakistani young and talented minds, where they will highlight their capabilities like researches, inventions, innovations, developments, and opinions in a popular way in their homeland but also to the outer world.

The Tech TV synopsis will cover different programs on science and technology awareness and understanding, for instance Battle of Science, Career Counseling, DIY Projects, Chat Room, Interview series of senior Pakistani and Chinese scientists, professionals, and technocrats, Lecture Series, Chinese and Pakistani Talent Hunt show, Science and Technology policy issues debate with Parliamentarians, Science Fun, Science Quiz, and much more.

## Conclusion

Science technology communication popularization is the key for development of scientific and technological revolution reinforcing economic advances, improvement in well-being, education, and infrastructure. And this can only be achieved when this can be understood by lay person.

The author is the Editor & Publisher at TechnologyTimes.pk





Kanwal Ashraf

## The Phenomena That is DigiSkills

With the advent of new ICT technologies, Pakistan is now at the brink of a technology evolution. There is no more uncharted space and myriad opportunities for knowledge, networking and success are opening up with the dawn of artificial intelligence & data analytics. Automation, digital platforms, and other innovations are changing the .....



# The Phenomena that is DigiSkills

**W**ith the advent of new ICT technologies, Pakistan is now at the brink of a technology evolution. There is no more uncharted space and myriad opportunities for knowledge, networking and success are opening up with the dawn of artificial intelligence & data analytics. Automation, digital platforms, and other innovations are changing the fundamental nature of work. Work is now being fragmented and spaced around the globe via the marvel of internet and cloud computing. This industry is expected to generate gross service revenue between \$15 billion and \$25 billion by 2020 as per a World Bank report, with a significant chunk taken by freelancers. Pakistan ranks at number 3 in the global freelance market. It is predicted that this market will grow exponentially, as remote work is getting increasingly popular around the world, particularly via freelancing websites such as Upwork and Fiverr.

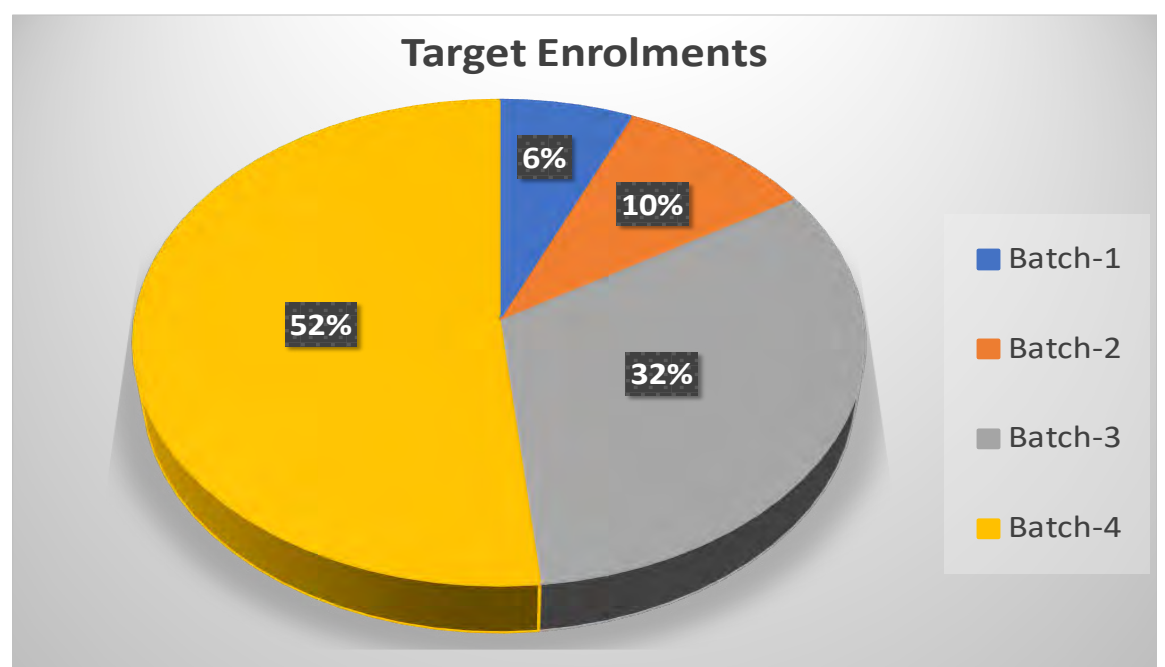
Surfing the waves of this 4th industrial revolution, the DigiSkills.pk Program has taken Pakistan by a storm. Launched by Ignite National Technology Fund, a company owned by Ministry of Information Technology & Telecommunication, DigiSkills.pk is Pakistan's largest training program, through which absolutely free of cost 1 million trainings over a period of 2 years, will be given on the essential digital skills required to survive and thrive in the future of work. Courses offered include Freelancing, E-Commerce Management, Digital Literacy, Digital Marketing, AutoCAD, WordPress, Creative

Writing, QuickBooks, Graphic Design and Search Engine Optimization.

DigiSkills.pk Program has received enormous popularity, especially within the youth, and in less than 1 year, more than 532,394 trainings have already been given. On average the program is overachieving its enrolment targets by 90% in every batch. To cater to this overwhelming response from across the country, DigiSkills.pk is continuously working to increase capacity and resources quickly.

A survey conducted after completion of first two batches reveals that a total of \$306,352 earnings have been generated. Based on which, at the end of two years the programme is estimated to generate approximately \$390 million. This not only benefits the individuals but also tremendously strengthens the foreign exchange reserve of Pakistan.

The success of DigiSkills.pk can be attributed to not only its high demand in the market but also to the processes and quality checks behind the curtain. Ignite is working with three partners in a symbiotic manner to ensure a cohesive and seamless project working. The DigiSkills Training component is responsible for providing a web-based training platform and Learning Management System, along with development of necessary training content. The DigiSkills Outreach component is responsible for advocacy and enabling trainees to enrol in the most cost effective methods available. The third component of DigiSkills is Monitoring & Evaluation which uses artificial intelligence and data analytics for performance optimization



**The DigiSkills.pk is a unique platform from all other online training programs and has surpassed other blended training programs being offered in Pakistan, in terms of revenue earned and number of people trained. The program has penetrated throughout the country with 22% of female inclusion, which is rapidly with the help of collaborators and enablers**

on an on-going basis to enable continual learning and improvement.

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and number of people trained. The program has penetrated throughout the country with 22% of female inclusion, which is rapidly with the help of collaborators and enablers such as are Akhuwat, PTCL, Pakistan Bait ul Maal, STEP, DYKB, UNDP and various

With this program in place, Pakistan is bound to conquer the global freelancing market; ultimately resulting in the economic growth and prosperity.

The Contributor is a Strategic Marketing graduate from Imperial College London

## From page 5: Role of Media in Developing Public Understanding of Science and Technology

decisions made in the absence of such understanding.

The media can exert a powerful influence on public understanding of science. The scientific community traditionally regards the mass media with some suspicion and is, on the whole, ignorant of the way they work and the nature of their constraints. The more 'popular' sections of the media, on the other hand, too often make relatively little effort to discuss science in anything other than a superficial and mostly sensational way, and do not generally understand the nature of the scientific enterprise. These attitudes need to be changed. To do so will

require a considerable but challenging and worthwhile process of mutual education.

The main explicit function of a scientist is to generate knowledge about the natural world, whether for its own intrinsic interest or for some immediate or future practical application. Success is judged mainly by the approval of other scientists or by the usefulness or commercial success of the application to which the new knowledge gives rise. The main functions of the media are to entertain and to inform. Success is judged primarily by audience ratings (numbers and level of appreciation) or circulation figures,

which, for the commercial parts of the media, translate into profit. Each group needs to recognize how the other can help it achieve its objectives and to understand each other's limitations.

Popular scientific and technical magazines such as Technology Times and Global Science are important sources of scientific information and education for the scientifically attentive public. Popular scientific books, such as those accompanying some of the major television series, are another important source of scientific information for the general public. In addition, as for the broadcast media, science

appears in other forms, notably in science fiction. Unfortunately, some popular books, for example on diet or alternative medicine, even from large and well-known publishers with a respectable scientific output, are grossly inaccurate or even positively misleading. Similarly, some science fiction can grossly distort scientific possibilities and create much concern in a public with limited scientific literacy and so limited ability, to sort the plausible from the implausible or rank impossible. Formal mechanisms for vetting the quality of such popular material would be tantamount to censorship and so unaccept-

able. But responsible and publicly intelligible comment from the scientific community should help to ensure that the extremes of distortion are at least to some extent curbed by the major publishers and film producers. Scientists and science journalists should be positively encouraged to produce accurate and appealing popular science books for the general public.

Scientist without help of Media can not build a scientific culture in the country which is extremely needed task.

The author is associated with Dosti Radio FM98, China Radio International.





Rehana Batool

## Need of Science Popularization in Pakistani Society

The role of informal educational institutions in learning, arousing curiosity and creating questions in minds of students is increasing day by day all over the world because the process of learning cannot take place without .....



# Need of Science Popularization in Pakistani Society

**T**he role of informal educational institutions in learning, arousing curiosity and creating questions in minds of students is increasing day by day all over the world because the process of learning cannot take place without questioning and reasoning. Gone are the days when informal educational institutions like museums, science centers, parks and zoos etc, were considered only as a source of entertainment. Now these institutions are not only a source of entertainment but also a source of education. UNESCO, an international organization working worldwide for promotion of education, science and culture, in its report "UNESCO, 2003" underlined that with a considerable current rise in dissemination of information, schools have lost their status as a seat of exploration and generation of knowledge. Furthermore, informal education predominates over the formal one.

In developed countries the planners and policy makers are placing special emphasis on giving equal importance to formal and informal education that's why the number of informal educational institutions like science museums, parks, zoos and science centers in those countries is far more than that in the developing or underdeveloped countries.

In my opinion excursions of students particularly the study tours augment their learning ability. For example, visiting of science centers/museums makes them able to think firmly about the fundamental principles of natural and physical processes of daily-use items and search their answers by asking questions to teachers, classmates and parents etc. These study tours to informal educational places not only help them properly understand many things which they study in their classrooms but also increase their imagination and quest for experimentation that ultimately leads to invention and innovation. Observation and experimentation are fundamental parts of a scientific study and only informal educational institutions and means provide students the best opportunity of observation and imagination prying them to experiment, that can result into new discoveries and inventions.

Despite immense importance the informal educational institutions in Pakistan remained an ignored area and the main focus has been on formal educational institutions that are schools, colleges and universities. Keeping in view the importance of informal education in promotion of science and technology, Pakistan Science Foundation (PSF) has taken many steps including establishment of science centers in different cities, a state-of-the-art Pakistan Museum of Natural History in Islamabad, mobile science caravans, and science exhibitions in different regions of the country. A large number of student groups frequently visit these educational places. Comparative data show that the number of visitors to the museums, science centers and mobile caravan science exhibitions has increased manifold during the last couple of years only due to certain interventions such as training programs for science teachers and establishment of science clubs in schools, etc.

Introducing modern trends and methodologies in science education is the prime purpose of PSF and it has launched inquiry-based science education scheme in the country to replace the old trend of science teaching and eliminate "ratta" (rote learning) trend which has destroyed our education system.

PSF has also initiated multifarious programs for young students to inculcate in their minds innovative ideas. These informal educational programs include Inquiry Based Science Education training sessions for master trainers and science teachers, students' participation in regular inter/intra-Board Science competitions, London International Young Scientists Forum (LIYSF), International Junior Science Olympiad and Asian Science Camp every year. This year Asian Science Camp is being organized in China and Pakistan Science Foundation through a strict test – interview procedure has selected five students for participation in the event.

PSF with its limited resources has been focusing on establishment of more informal educational institutions in the country. It is the vision and mission of PSF to strengthen primary science education through various formal and informal educational



interventions. These interventions include support in establishment of science laboratories in public sector schools for achieving the targets of Science and Technology popularization, promotion and development as well as shift to knowledge-based economy through scientific research.

At present, the status of science labs in public sector schools is pathetic. Even most of the schools have either no science labs at all or if they exist, are outdated. It is imperative that for improving the current status of science education at least model science labs in two schools of each tehsil of Pakistan may be established and PSF is striving to achieve this objective within next couple of years.

Under the Science Talent Farming Scheme, the Foundation has developed a model state-of-the-art mobile science labs which travel to different remote area schools of the country to help students understand science through observation and experimentation as well as develop their interest in this important subject that encompasses all aspects of our daily life. More such labs will be fabricated to supplement the school labs in imparting quality science education. These mobile science labs would be a great facility for students and a model and motivation for teachers and schools to build such labs in their institutions for impart quality science education through experimentation.

For establishment of informal

educational institutions all over the country the private sector and provincial governments role is very important as after the 18th Amendment the education has become a provincial subject. Now PSF is in regular contact with the provincial governments to draw their attentions towards this important aspect for improvement of science education in their respective regions and join hands with PSF to achieve the national targets.

Presently, the media, including electronic, print and social media, is the most effective tool to educate people and create awareness on importance of science and popularize scientific concepts among masses to achieve the socio-economic targets of the country, as the media has access to people belonging to all walks of life and from child to elderly persons.

Effective mutual communication is fundamental to increasing public understanding and for building the bridge between the public and the scientists.

Pakistan Science Foundation being the apex body for promotion and funding of scientific and technological research and science popularization in the country, has established a Science media Cell and as a part of its science popularization programme conducted a "National Science Media Forum" in Islamabad in 2011 and in collaboration with Sukker Press Club and Shah Abdul Latif University Khairpur a Regional "Science Journalists Training Workshop" in Khairpur,

Sindh in 2013. In collaboration with National Press Club PSF also organized many journalist training workshops at Pakistan Science Foundation and Pakistan Museum of Natural History.

PSF has signed MoU with National Press Club in 2016 to use media as a tool of science popularization and cultivating relationship among scientists and media and seek their support in popularization and promotion of science.

Though PSF in collaboration with different stakeholders is making its best efforts for popularization of science in the country, there is need to explore more avenues of collaboration and expedite the organizing the scientific activities.

To achieve the science popularization objectives firstly I would suggest establishment of a Pak-China Science Popularization Network for organizing joint activities in collaboration with China in public and private sector organizations.

Secondly, Establishment of the state of the art Science Centers in CPEC regions of Pakistan are also imperative to boost scientific activities in these regions.

Thirdly, there is an urgent need to launch an exchange programme for capacity building of science communicators and science popularizers to strengthen scientific culture in the country.

The author is the Principal Scientific Officer at Pakistan Science Foundation, Ministry of Science & Technology, Government of Pakistan.