



International Forum on Science Education 9 April 2018, Islamabad, Pakistan

Islamabad Declaration

In conjunction with the 2018 meeting of IAP SEP Global Council, the International Forum on Science Education was held in Islamabad on 9 April 2018, hosted by the ECO Science Foundation, the Pakistan Higher Education Foundation, Pakistan Academy of Sciences and Alif Ailaan. The International Forum was themed “*Quality Science Education at Schools- A Must for Quality Higher Education and Economic Development*”. The Forum attracted more than 200 speakers and participants from 12 countries as well as some diplomats from Pakistan based Embassies. The International Forum engendered animated and constructive deliberations, culminating in the recommendations and outcomes in this Islamabad Declaration.

The world today is in the throes of the 4th Industrial Revolution which is caused by the nexus of billions of people connected by mobile devices, with unprecedented processing power, storage capacity, and access to knowledge; and technology breakthroughs in fields such as Artificial Intelligence, Robotics, the Internet of Things, Autonomous vehicles, 3-D printing, Nanotechnology, Biotechnology, Materials Science, Energy storage, and Quantum computing. The 4th Industrial Revolution is really the Digital Revolution. Its impacts on the developed world have been the widening wealth inequality and massive unemployment in traditional sectors of the economy.

The world is also in the grip of poverty. Some 60% of world population in the developing world still live in poverty. Their human condition is further exasperated by the adverse impact of climate change. Fortunately the developing world is following a different development model from the developed world. This model is based on inclusive infrastructure development and nurturing of enterprises in the agricultural, mineral resources, manufacturing, trading and other services sectors. This is exemplified by China which has lifted her huge population out of poverty in three decades by more than satisfying the basic necessities of life they term “clothing, food, shelter and transportation” guided by their age-old precept “To get rich build road first” . China is sharing her development model with the rest of the developing world through the One Belt One Road Initiative. This is “the Development Revolution” of the developing world!

After nearly 25 years of experience throughout the world through the persistent

advocacy of the Interacademy Partnership (IAP) of some 110 national academies of sciences and 30 national academies of medicine under its Science Education Program (SEP), it has been proven that Inquiry Based Science Education (IBSE) methodology and approach for teaching and learning Science, Technology, Engineering and Mathematics (STEM) from preschool upwards, enhances the curiosity and creativity of children and youth and improves their language and numerical literacy. Moreover, IBSE/STEM education enables children and youth to think critically and to question certain cultural, social and consumption norms unless they have been proven by evidence, to be beneficial. In addition, IBSE for STEM education leading to higher education, will assure the human resources necessary for the digital revolution and the development revolution as well as equip the world with a rational and discerning citizenry to ensure global peace, harmony and prosperity.

The International Forum deliberated in depth the interaction of the digital revolution, the development revolution and IBSE/STEM education from preschool through primary secondary and tertiary/higher education education to lifelong learning. The International Forum is convinced that through their expert use of social media and mobile communication, IBSE/STEM savvy children and youth can be the agents of change to lead humanity towards sustainability.

Therefore the Islamabad Declaration, appreciating the efforts of Pakistan Academy of Sciences, ECO Science Foundation, Higher Education Commission of Pakistan and Alif Ailaan Pakistan in organizing the Forum,now:

- Calls on all IAP member academies of sciences and their IBSE/STEM partners to redouble their commitment to IBSE/STEM education, especially the enhancement of IBSE/STEM education by the application of digital technologies through active participation of UNESCO's flagship programs like ICT and Education 2030, Mobile Learning Week and Open Source Education etc.
- Calls on all IAP member academies of sciences to lobby their national governments to establish more interactive science museums/science centres. In the interim, to get their national and provincial museums to set up a STEM section to spread STEM literacy to their citizens.
- Calls on IAP SEP Global Council to actively support Climate Change Education- the IBSE way.
- Calls on industry, particularly the infrastructure and digital technology related enterprises to assist national academies of science and their national governments to enhance STEM education (following IBSE approach) policies and initiatives to ensure the formation of the creative and innovative human capital.
- Calls on China under the One Belt One Road Initiative; (i) to invest in the IAP SEP Project of Fusion of OBOR Civilizations Curriculum Design for Schools; (ii) welcome the wider participation of the youth from developing countries in

their OBOR Teenager Maker Camp and related digital activities; (iii) construct digitally interactive mobile exhibits (IBSE based approach) on the scientific and technological inventions and innovations in OBOR civilizations and (iv) uplift technical universities in developing countries in their digital technology curriculum by faculty and student exchanges and provision of laboratory equipment etc. Pakistan with China Pakistan Economic Corridor (CPEC) project could be a priority.

- Appreciates the establishment and efforts of Pakistan Alliance for Maths and Science (PAMS) and ECOSF for advocating and promoting IBSE/STEM education in Pakistan and ECO member countries respectively.
- Calls upon National Academies of Sciences in the 10 ECO member states to cooperate and collaborate with ECOSF for of IBSE and STEM in their countries.
- Calls on Pakistan, the host country of this International Forum to devote more resources to IBSE/STEM education in schools so as the assure quality intakes into their universities, which should lead to sustainable economic development.
