Innovation Hub: Unleashing Creative Potential

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The future of any country rests on its ability to harness the creative potential of its huge young population. To foster innovation and creativity, problem-solving project-based learning will therefore play an important role. Such initiatives help to link education to relevant real-life experiences which help bring joy into learning while at the same time opening doors for creativity.

Thus, science centres or institutions of non-formal learning, where such activities can be undertaken, are recognised to play an important role in fostering creativity and inspiring innovation amongst the young minds. This will ultimately lead to developing a culture of innovation in the country.

The National Council of Science Museums, under the aegis of the Ministry of Culture, Government of India, has started a mission with a vision to foster the culture of innovations with the setting up of Innovation Hubs in 60 institutes across the country.

An Innovation Hub is a facility that provides an opportunity to nurture new ideas and develop an inquisitive perspective in the youths of today. These hubs serve as springboards for innovations and thus help the society and economy face future challenges and meet rising aspirations of the growing population. Specifically, embedding such creative pedagogies in science education through Innovation Hubs will help to retain as well as enhance the potential of young minds, making them think beyond their textbooks.

Innovation hubs extend all facilities like conducting experiments/studies ranging from basic sciences to technical workshops. The facility is available to people of all age groups. Innovation hubs can go a long way in developing deep understanding of various aspects of Engineering, Robotics as well as emerging fields of Life Sciences.

Innovation Hub at Pushpa Gujral Science City
Pushpa Gujral Science City in Kapurthala, Punjab, has also set up an Innovation Hub with the objective of developing scientific temperament amongst the masses.

The Innovation Hub promotes its activities through the formation of Science Clubs in local as well as distant schools by conducting creative activities at their premises. Regular workshops, science lectures and origami, food adulteration as well as creative activities are made an integral part of the school curriculum. Besides, students are made to showcase their innovations through regular organisation of Tech Fest and Science Fest thus firing their imagination and fostering the culture of innovation.

The biggest motivation for setting up the Innovation Hub was the declining interest of students in science and technology. Students today seem more inclined to gain bookish knowledge without proper understanding of scientific concepts. There has been lack of motivational process and methodology to develop the urge for science.

Besides, over the last few decades, drug consumption has become one of the biggest problems affecting millions of children and youth in the country. There are few states and cities in India which have taken the lead in drug consumption. Punjab in the Northern part of India has been facing a drug epidemic since a very long time, though it is considered to be one of the most developed states of the country.

It has therefore become a necessity to take initiatives that can bring channelise the energy as well as potential of the young generation. The Innovation Hub is an important initiative in this context.

The Innovation Hub at PGSC is focusing to provide hands-on activities, workshops, Science Fairs, Popular Science Lectures, etc. to promote independent thinking, problem-solving ability, nurturing creativity and generating innovative ideas.
The various facilities set up under the Innovation Hub include:

**Discovery Hall:** This area comprises interactive science exhibits meant for creating excitement about science through exploration and discovery of underlying principles. The idea of this facility is to promote logical thinking and make scientific concepts easy to understand. It demonstrates the practical working of scientific principles and its implementation in various applications.

**Resource Centre/Hall of Fame:** This space is used to showcase innovative ideas/experiments/implements that have transformed our world or have made significant impact on the way we conduct our lives along with information about their inventors and innovators. Stories and inspirations behind such innovations are also mentioned through multimedia kiosks. Besides, implements/samples of appropriate technology and traditional knowledge systems, art and craft and other areas of importance in public life in the respective regions are also exhibited.

**Idea Lab:** This lab has the necessary basic facilities to pursue creative and innovative hobbies/activities that involve model making, basic science experimentation, design & fabrication of useful gadgets of practical use. Teaching/learning kits for better classroom interactions, testing of milk, water, food items, etc. are being carried out in this section. Students are becoming aware of adulteration of food items through simple experiments for adulteration analysis that can be performed even at home without using sophisticated gadgets and chemicals.

**Design Studio:** This area offers a creative environment to design various products using 3D Solid Works software and print the innovative models using 3D printer. Origami workshops are conducted to make beautiful designs and shapes from paper thus promoting hand artwork as well as reuse of paper to convert it into beautiful designs for display.

**Robotics/Electronics Lab:** Robotics lab provides students an opportunity to develop their own robots and program them to perform different tasks. The modern age is going to be robot specific to carry out difficult tasks like ocean exploration, medical surgery and deep space exploration. It is important that young minds be aware about the need, significance and role of this emerging field of Science & Technology. Electronics and Mechanical labs offer facilities to carry out experiments as well as fabrication of innovative projects.

**Kabad se jugad (Make useful product from waste material):** Students make things from waste material, scrap or low-cost material.

**Tod Fod Jod (Break and Remake):** In this section students learn to do things with their own hands, dismantle, reassemble and remake devices/gadgets. They learn engineering behind the working of various electronic machines/gadgets. This section satisfies the inquisitiveness of students by gaining knowledge from experts available during assembling and dissembling of gadgets.

**Idea Box:** The young mind is a storehouse of imaginative ideas. The Idea Box was set up to capture potential innovative ideas. Students can generate their own innovative ideas and contribute to create an idea bank. The best ideas are chosen for experimentation, model making and project work. Suitable guidance, expert help and required material for the fabrication of the project is provided to give practical shape to the potential innovative ideas.

The Innovation Hub facility strives to provide an equal opportunity to all sections of the society for practical learning of science and inculcating technical skills in them. It is trying to engage the youth in the process of Science, Technology & Innovations as well as promoting their critical thinking and practical problem-solving skills. It is also looking not only to support the innovative ideas and convert their ideas to a useful product or fruitful outcome but also recognise, encourage and facilitate grassroots innovations in Science and Technology.

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