

STEM Education Centre, PCE

Spurred by the transformational education reform taking place in the country today, Paro College of Education is positioning itself strategically to play a lead role in this process of re-purposing the education system. The focused and comprehensive reform process states in unequivocal terms the urgency and centrality of STEM education. PCE aspires to the full development of STEM education, research and training in the Rinpung Choeling Campus blessed by the magnificent Rinpung Dzong. The plan is to foster creativity, divergent thinking, deep knowledge and understanding of the fundamental disciplines, use of technology, innovation, practical application of knowledge, and problem solving in the context of realworld challenges. It is expected that with deep knowledge, understanding practical application and values of STEM, teacher education graduates will be well qualified and competent to foster an active culture of STEM learning and teaching in Bhutanese schools.

*"We must prioritise self-discovery and exploration, and involve learners in the creation of knowledge rather than making them mere consumers of it. We must make STEM subjects part of their everyday language".
(The Royal Kasha on Education Reform, 17 December 2020)*

STEM Education Centre will

1. Work closely with the College management and key stakeholders within the university and beyond to set up a clear vision, action plan and other initiatives for the development and propagation of STEM education.
2. Foster an active and ever evolving culture of knowledge and application related to STEM education and research in light of the Royal vision for education, local and global perspectives and developments in STEM education, national STEM education policies and emerging discourses, and STEM education courses and current developments in the field in reputed teacher education institutions in the world.
3. Develop a clear roadmap for STEM education and research development for PCE and ensure the full achievement of the goals set for the College.
4. Play a lead role in setting up a STEM Education Centre in the College's Rinpung Choeling campus.
5. Organize STEM education and research events and other forums for students and STEM education professionals in the country.
6. Based on international and local best practices, critically review all STEM related modules in PCE's Masters and Undergraduate programmes.

7. Set up plans and strategies for STEM innovation projects for the College and the wider STEM education community.
8. Work with key stakeholders within the Ministry of Education, the Druk Gyalpo's Institute, schools, industry, and relevant local and international partners to promote STEM education and research in the country.
9. Mobilize resources for the development of STEM teaching, research and professional development.
10. Ensure the full integration of STEM into all relevant programmes taught in the College, quality delivery of the modules, and development of graduate competencies relevant to STEM learning in Bhutanese schools.

News and Events

STEM Education Seminar and Training 2022

SCIENCE • TECHNOLOGY • ENGINEERING • MATHEMATICS

Royal University of Bhutan
PARO COLLEGE OF EDUCATION



STEM Education Seminar and Training

13th to 15th October 2022

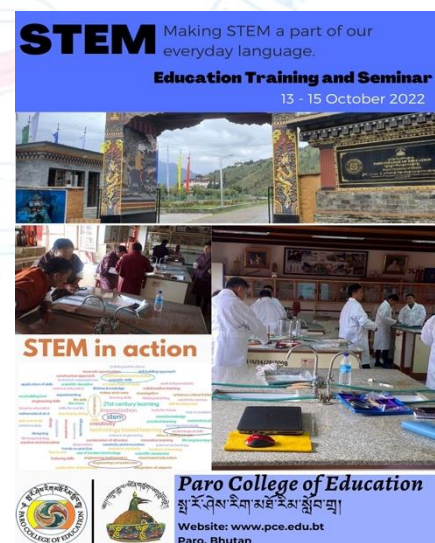
Venue: Manjushri Hall 01, Nangkar Choeling Campus, PCE

Supported by the Bhutan Foundation 

1.1 Background / Overview

In pursuit of development of STEM Education focused on competencies, resource development, and institutional partnerships, a three days STEM Education Seminar and Training was held from October 13 to 15, 2022. The seminar and the training reiterated and

upscaled the current understanding and know-how in line with the Royal vision that “we must prioritize self-discovery and exploration, and involve learners in the creation of knowledge rather than making them mere consumers of it. We must make STEM subjects part of their everyday language” (Royal Kasho on Education Reform, 17 December 2020).



STEM education has gained greater impetus in harnessing technology advancement, using data and innovative practices for lifelong learning and honing skills required at the workplace. Government agencies, educational professionals, classroom practitioners, policy developers, organizations and industry need to deepen their knowledge and understanding of STEM education and initiatives that can be triggered sooner than later to create a deeper understanding, collaboration and partnerships to groom young children with STEM skills and competencies for nation building. His Majesty The King during the 14th Convocation of RUB (2019) said that “As a small country, unencumbered by the complexities faced by much larger countries, we can do things faster and better than others” in this rapidly changing world.



Building partnerships in the development of STEM resources, appropriate pedagogy, adapting global best practices, teacher

professional development and training play a critical role in employing technology in real-world situations to spur growth and development. In Bhutan today, today education providers are tasked to provide gainful engagement of students in critical inquiry, creativity, problem solving through STEM teaching/learning experiences beginning to recognize a child’s innate potential at an early stage. The Royal Kasho on Education Reform (2020) commanded that:

In preparing our youth for the future, we must take advantage of available technologies, adapt global best practices, and engineer a teaching-learning environment suited to our needs. Technology is the argument of our time and a major indicator of social progress. The irony in our context is the absence of technology in classrooms for a generation of students who are exposed to, and live in the digital age. To ensure that teachers are not disconnected from their students, professional development of teachers should integrate technology, digitalisation, artificial intelligence, and automation”.

In pursuit of the Royal Vision for STEM education, Paro College of Education (PCE) is committed to setting up an integrated STEM Education Centre in its Rinpungchoeling campus that will function as a leading hub of STEM education, research, training, professional development and outreach.

1.2 Key expected outcomes

The successful completion of proposed STEM activities supported by Bhutan Foundation will enable PCE to achieve the following objectives to:

- Develop faculty capacity for integration of STEM in all relevant programmes taught in the College and to enhance graduate competencies.
- Develop a clear roadmap for STEM education and research in the College with the

aim to “make STEM subjects part of their [learners] everyday language” (His Majesty the King).

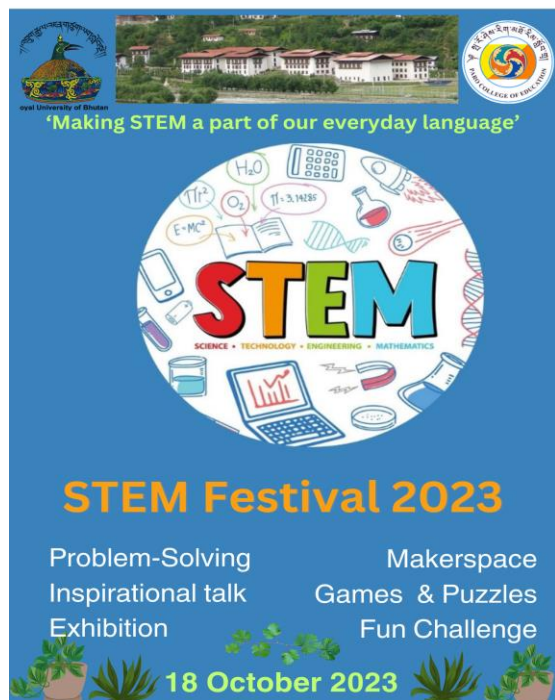
- Foster an active and ever evolving culture of STEM knowledge and application aimed to accelerate the process of integrating digital tools in curricula, learning and teaching, and educational assessment.
- Enhance STEM knowledge and skills in primary schools.
- Develop STEM programmes to provide technology integration knowledge and skills to pre-service and in-service teacher candidates.
- Affiliate with industry for partnerships and pathways for the development of STEM education and research in the country.
- Mobilize resources for the establishment of a STEM Education Centre in the College.

1.3 Strategy

The objectives will be achieved through the following four key activities.

- STEM Education Seminar
- STEM Education Training
- Networking and Partnerships for STEM development
- Development of resources for STEM Education Centre

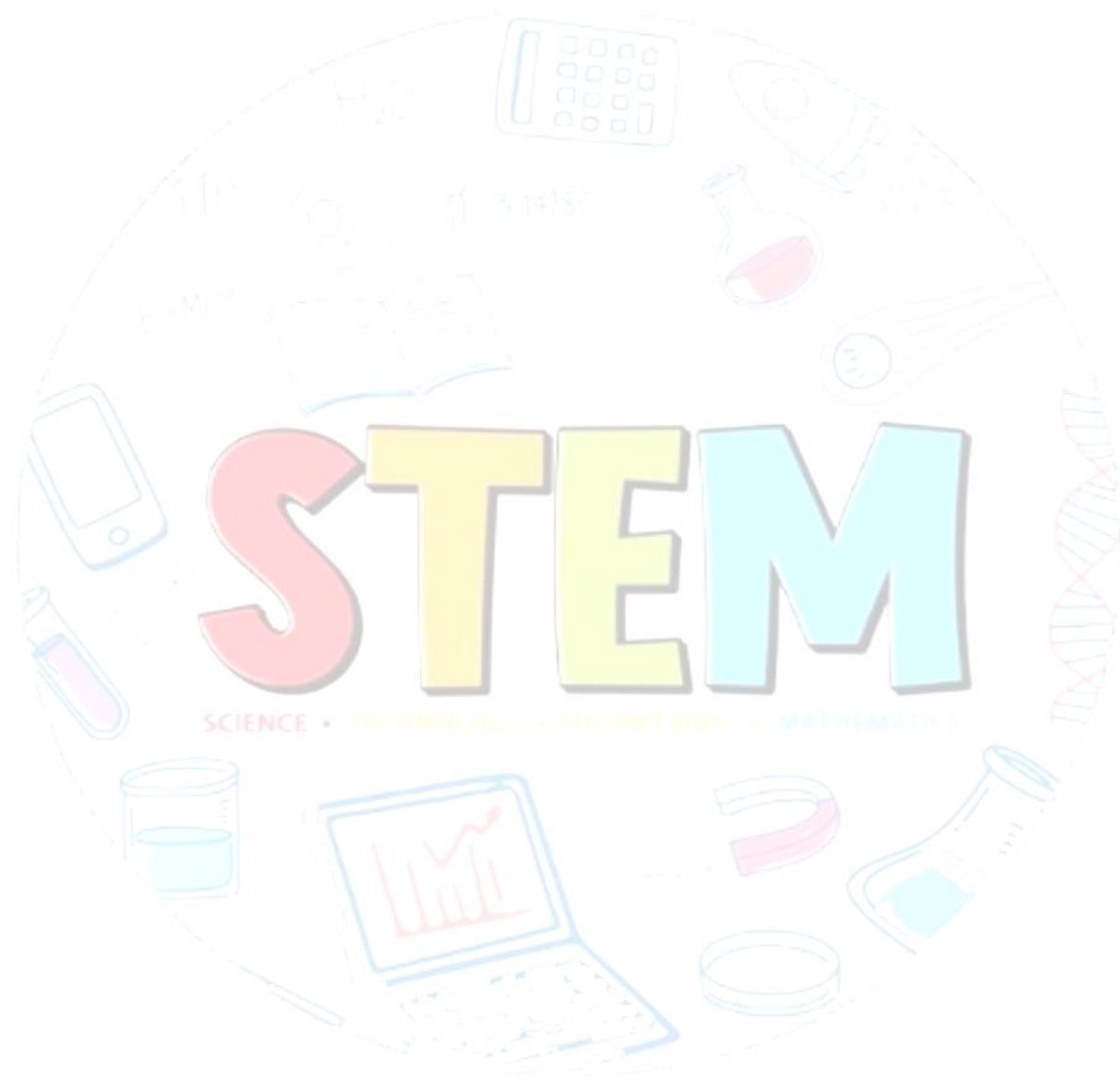
STEM Festival 2023



The STEM Education Centre, Paro College of Education organised a one-day STEM Festival on 18 October 2023 to reach out to the schools in promoting STEM education that “*We must make STEM subjects part of their (student’s) everyday language*” (Royal Edict, 2020). The STEM Festival was predominately conceived and designed to suit young children and future teachers. The STEM Festival aimed to provide opportunity to upscale knowledge, create and innovate solutions in celebrating STEM in an interactive way and stimulate upper primary school students cultivate the love of science at an early age. The participants and guests were exposed to international STEM inspirational talk via Zoom, STEM quiz including problem

-solving, games & puzzles and makerspace real world opportunities & challenges along with an assortment of university student STEM Exhibits.

The STEM festival saw in attendance a total of 90 upper primary school students and STEM teachers from 18 schools in Paro valley including more than 300 student teachers, faculty of PCE and MoESD representative.





The STEM inspirational talk inspired learners to explore STEM connections by sharing knowledge and experiences from the real world thus heighten understanding and create awareness on STEM disciplines.



STEM Quiz, makerspace challenge & student exhibitions mesmerised young participants engaging themselves in solving problems, enjoying puzzles and games. The festival was a STEM feast to young learners where interactive models, displays, demonstrations, hands on challenges and applications heightened creativity and innovation in fostering love of STEM.

The STEM Festival inspired young learners, empowered graduating student teachers and provided an opportunity to stakeholders in fostering the enhancement and transformation of the standard of STEM education. The festival revitalized schools and school children, educators, professionals and STEM lovers build a strong, vibrant collaboration and partnership.



