International Conference on
Integration of
STEAM in School Education

Organised by
NCERT
Regional Institute of Education
(Ministry of Education)
Shyamla Hills, Bhopal, M.P., India

In Collaboration with
Department of School Education
Govt. of Madhya Pradesh (India)

February 26-28, 2021

STEAM is an educational approach to learning that articulates Science, Technology, Engineering, Arts and Mathematics as access points for guiding students’ inquiry, dialogue, and critical thinking. The approach aims to strengthen the foundation of STEM to promote the students’ in enhancing their critical thinking skills and recognize the integration of Arts, Science, Technology, Engineering, and Mathematics. Integrating arts activities can decidedly enliven the curriculum content, make learning outcomes more successful and interesting to both teachers and students, and introduce powerful, inspired, creative and logical thinking into the teaching-learning process.

**STEAM education provides opportunities for the students**

- to think outside the box,
- to express innovative and creative ideas,
- to feel comfortable in hands-on learning,
- to take ownership of their learning,
- to work collaboratively with others &
- to understand the ways that Science, Technology, Engineering, Arts and Mathematics work together.

As new technologies emerge, STEAM education and Coding is becoming an aspect of Indian education. STEAM and Coding prepares students for 21st century. Integration of Coding with STEAM has an added advantage of creating critical thinking and problem solving skills in order to create next generation innovators. Integration of STEAM encourages learners’ curiosity about the world around them and they feel empowered to change it for the better.

**OBJECTIVES**

1. To promote STEAM approach in School Education to improve students’ innovative ability.
2. To provide integrated approach to learning and teaching, which requires an intentional connection between curriculum learning objectives, lesson design and its implementation.
3. To identify different perspectives to understand the link between different disciplines to improve comprehensive use of STEAM knowledge to solve practical problems.
4. To address content, taking into account context, global issues and local priorities.
5. To promote creative, critical thinking, problem solving skills and values through STEAM education.
6. To endorse life skills.
7. To encourage and share research and development through STEAM approach.

**THEMES AND SUBTHEMES**

1. **Perspectives for Integration of STEAM in school education**
   i. Evolution of STEAM and its implications
   ii. Integration of STEAM to Indo-centric education
   iii. STEAM vs traditional approaches
   iv. STEAM and its linkages with multiple disciplines
   v. Economic implications of STEAM integration

2. **Encouraging a STEAM focused school curriculum**
   i. Linkage of STEAM at different levels of school education
   ii. Digital learning and STEAM in school curriculum
   iii. Contextualizing and applying STEAM to school curriculum
   iv. Cohesive learning interaction for effective students learning
   v. Approaches and strategies of STEAM across school curriculum

**SPECIAL FEATURE**

A competition on “Integration of CODING with STEAM” to encourage students to develop innovative projects.

The competition is open to students of upper primary, secondary and senior secondary school level. Attractive prizes along with certificates will be given to the winners in the following categories:

1) **Coding and Mathematics** - Creating different mathematical shapes using coding and also to visualize abstract concepts

2) **Tinkering with Coding** - Designing creative material using basic electronics and coding

3) **Coding and STEAM in daily life** - Creating everyday items such as ambulance, fly swatter etc. using coding

4) **Project based learning using Coding and STEAM** - Creating simple projects with coding such as wind mill, lighthouse, piggy bank etc

5) **Coding and STEAM with Robotics**

**The project must contain the following information:**

Category: 
Name: 
Email id: 
Title: 
Aim/Objectives: 
Procedure: 
Results: 

**Last date of submission:**
January 10, 2021.

Email id: srkcodingandsteam@gmail.com

All projects will be judged by an expert panel. All winners will be given a chance to present their projects in a special session in the International Conference on “Integration of STEAM in School Education”.
vi. Limitation and challenges of STEAM pedagogy in school curriculum

3. Way Forward: Shaping schools for tomorrow
i. Futuristic literacy: Coding (computer programming)
ii. Leap from computer literacy to computer science
iii. Integrating coding in school curriculum
iv. Exploring the effectiveness of block based visual programming language in learning coding
v. Creativity and Innovations through coding
vi. Enabling students for diverse workforces through STEAM
vii. Effectiveness of STEAM to career pathways

4. STEAM education and inclusive learning culture
i. STEAM approach to reach learners from marginalized section
ii. Virtual education through STEAM
iii. Creating diverse context and expand students’ decision making through STEAM approach
iv. Developing learning strategies and resources for children with special needs
v. Addressing gender issues through STEAM approach

5. Behind the Scenes: Making STEAM to work in school
i. Structural changes for successful STEAM implementation
ii. STEAM operations for teachers and students
iii. Integration of STEAM as a cross-curricular approach
iv. STEAM Model in the context of National Education Policy-2020
v. STEAM education for maximizing the learning outcomes

6. Assessment of the students: STEAM and Digital learning
i. Fostering independent and individualized learning
ii. Implementation of STEAM at global level
iii. Improving students performance across the curriculum
iv. Challenges, issues and concerns of STEAM approach in assessment and learning

7. Bringing STEAM out of the classroom and into the community
i. Community based STEAM approach
ii. Contextualizing STEAM learning
iii. Development of life skills through STEAM
iv. Reversal of roles in communicating STEAM model

8. Practices of STEAM education at National and Global level
i. STEAM for sustainable development
ii. STEAM for health, hygiene and well being
iii. STEAM for peace, ethics and values
iv. Researches on STEAM and its educational implication

9. STEAM paradigm in real world situations
i. STEAM for development of 21st century skills and competencies
ii. Hands on teaching - learning methods for multiple disciplines
iii. Best practices of STEAM in school education
iv. Inspiring students to apply STEAM in daily life

INVITATION OF PAPERS

Research Papers are invited from the Teachers, Teacher Educators, Academicians, Educationist, Researchers, NGOs and the functionaries working in the areas of School Education. The abstract of paper should be typed in about 200-250 words and full paper in about 2000-2500 words in MS-Word, font size 12 (Times New Roman) with line spacing 1.5. References should be given in APA style. The paper must contain the title, name of the author, contact number and e-mail address.

E-mail id for Paper Submission: rkjcse2020@gmail.com
Publication: Selected papers will be published in a conference volume with ISBN and RIE Journal with ISSN.
Mode of Conduct: May be conducted in offline or online mode depending on the situation of Covid-19.
Venue: NCERT, Regional Institute of Education, Bhopal
TA will be paid as per entitlement and limited to 3 AC of Railways on the production of tickets to the participants (only one author) whose papers are selected and invited for the presentation in the conference.

Accommodation:
For outstation participants the accommodation will be arranged on prior request in the guest houses of the Institute.

ABOUT THE INSTITUTE

The Regional Institute of Education, Bhopal is one of the constituent unit of NCERT, New Delhi, India. It is located on Shyamla Hills in Bhopal, the capital city of Madhya Pradesh. The Institute caters to the needs of school education and teacher education of the states namely Chhattisgarh, Goa, Gujarat, Madhya Pradesh, Maharashtra and Union Territories of Madhya Pradesh, Jammu and Kashmir, and Naga Haveli. The Institute has a Demonstration Multipurpose School (DMS) in its campus for trying out innovative practices in school education and teacher education.

ABOUT DEPARTMENT OF SCHOOL EDUCATION, MADHYA PRADESH

The School Education department of M.P strives for a culture of excellence in Education that promotes Science & Technology and fosters creative talents. The department has undertaken several quality based initiatives like consolidation and strengthening of schools, remedial teaching, better parental engagement, evidence based policy making, intensive academic monitoring, transforming the face of learning through effective and innovative classroom practices etc. Its vision is to equip students and teachers with 21st century
Crafting the future with STEAM Curriculum. The experts highlighted the importance of STEAM techniques like storytelling, hands on & project based teaching and the integration of STEAM Subjects with liberal arts like Humanities, Languages and Fine Arts. The State of MP has decided to adopt the STEAM approach of Education and in the first phase 1500 Schools are being identified and developed as STEAM Schools. Core teams have been Constituted to formulate short and long term strategies for the same and to map the existing curriculum with STEAM techniques. It hopes that these efforts will promote the problem solving skills and competencies of its students and enhance the teaching-learning process.

**IMPORTANT DATES**

**CONFERENCE DATES - February 26 - 28, 2021**

**LAST DATE OF SUBMISSION OF ABSTRACT & FULL PAPER - January 10, 2021**

**COMMUNICATION REGARDING ACCEPTANCE OF PAPER - January 31, 2021**

**CHIEF PATRON**

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National Council of Educational Research and Training (NCERT), New Delhi.

**PATRON**

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