



Homi Bhabha Centre for Science Education (HBCSE) is a National Centre for research and development in science, technology and mathematics education. It has a Graduate School programme that offers a PhD in Science Education from TIFR, a Deemed University.

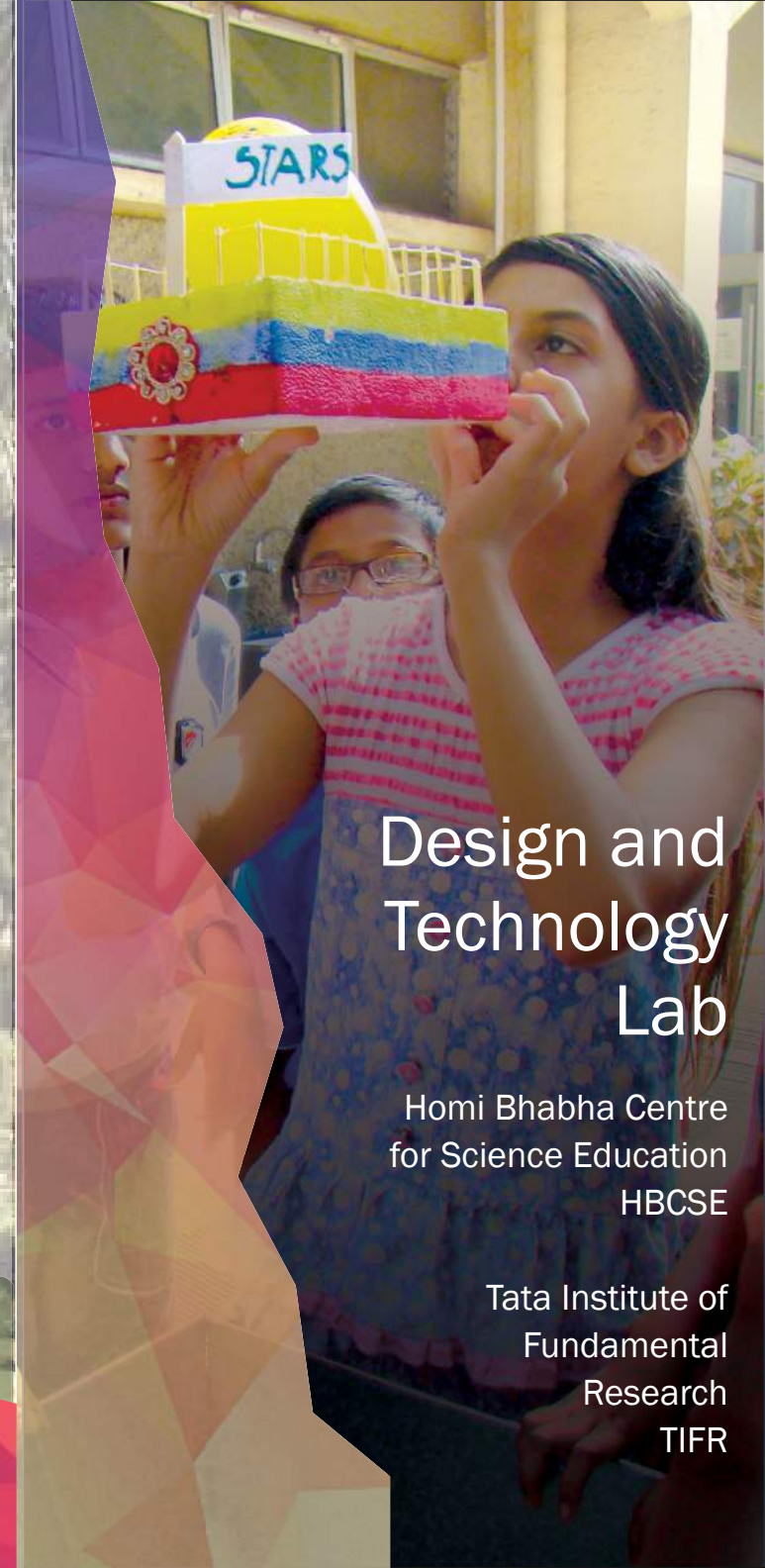
The broad goals of the centre are to promote equity and quality education in science and mathematics from primary school to undergraduate college level in the country.

Design and technology education is a relatively new area of research at HBCSE.

Contact

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Design and Technology Lab

Homi Bhabha Centre for Science Education
HBCSE

Tata Institute of Fundamental Research
TIFR

Opportunities

Research scholars seeking a PhD in Science Education

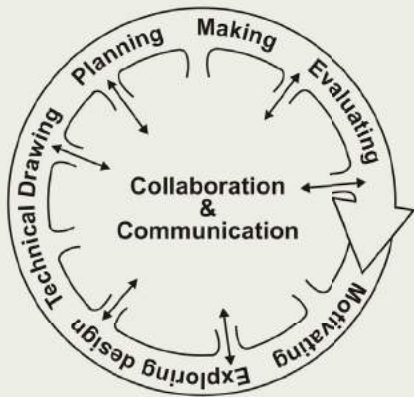
Project staff helping in R&D programmes

Visiting students, interns and teachers working on short term projects

Post-doctoral fellows and Senior visiting fellows

About D&T education

Design and technology education aims to enable learners with self-belief as problem solvers. It is about 'learning by doing' while designing solutions to simple and complex problems relevant to students' lived world. In D&T education, students think of new ideas, translate them to drawings which may be followed by actual making. Students are encouraged to be creative, imaginative, innovative and flexible. They also evaluate artefacts for design appropriateness. Students may draw on knowledge from multiple disciplines – science, maths, social sciences, fine arts and crafts and pay attention to socio-scientific contexts, cultures and value-systems. We look at technology as a component in the broader areas of Educational Technology and Science-Technology-Society (STS) studies.



Collaboration and communication centred D&T model

D&T education engages students in activities that involve:

- Exploring objects and their relations
- Making and evaluating designs and artefacts
- Creating and innovating
- Visuo-spatial thinking - imagining, imaging and drawing
- Using technological knowledge and quantitative reasoning
- Social skills of collaboration, communication and teamwork
- Aesthetic, socio-economic, environmental, judgements / evaluations

D&T education is different from that in the arts and the sciences, and deepens the education in these domains.

Subject Property	Sciences	Humanities	Design
Is about	Natural World	Human - experience	Human-made world
Involves use of	Experiments, analysis, classification etc.	Metaphor, critique, evaluation, etc.	Modelling, pattern formation, synthesis, etc.
Values	Objectivity, rationality, neutrality, concern for truth	Subjectivity, commitment, concern for justice	Practicality, ingenuity, empathy, concern for appropriateness

D&T education: Some areas of Research and Development at HBCSE

- Surveys of ideas about science, technology and design
- Issues of communication and collaboration
- Socio-cultural aspects
- Inclusive education
- Project Based Learning
- Incorporating D&T units in current school curriculum
- Professional preparation of teachers for D&T education and STS education
- Socio-scientific issues
- Creativity, innovation and problem identification
- Development of resources, modules and learning units

Workshops for students and teachers

Some of the lecture and workshop themes of our group include: Nature of Science, Gender and Science, Project Based Learning, Design and Technology activities for school, Gender issues in Education, Environment education and Science, Technology & Society (STS), etc.

If you are interested in having a talk or workshop organized in your school, college or organization, get in touch with us.

