

Volume 4

The epiSTEME Reviews

Research Trends in Science,
Technology and Mathematics Education

Editors

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**HBCSE
(TIFR)**


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The logo for epiSTEME 4 features a stylized DNA double helix on the left, with a vertical line and a horizontal line intersecting it, resembling a microscope or a scientific instrument. To the right of this graphic, the word "epiSTEME" is written in a bold, sans-serif font, with the "S" and "T" being significantly larger and more prominent. The number "4" is placed to the right of "epiSTEME".

epiSTEME 4

Homi Bhabha Centre for Science Education (HBCSE) is a National Centre of the Tata Institute of Fundamental Research (TIFR), Mumbai, India.

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The epiSTEME Reviews Volume 4 includes papers based on the talks delivered at the international epiSTEME-4 conference held in 2011. These papers review recent researches and trends within three strands central to science technology and mathematics education (STME). The first strand explores historical, philosophical and socio-cultural studies of STME, such as the social nature of scientific knowledge and multi-science perspectives. The second strand reviews cognitive and affective studies of STME in the Indian and international context. It highlights the role of argumentation and critical review in the construction of knowledge, connects children's informal knowledge with symbolic representations and provides a developmental view of spatial ability. The third strand discusses curriculum and pedagogical studies in STME. It focusses on the role of creativity in the context of design and technology education, appraises teacher education and pedagogy in India from the perspective of transforming classroom practices, overviews the physics education research on students' learning, and directs attention to the state of post high-school education in India. This volume would be of interest to researchers, teachers and practioners in STME.

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