

Mauritius Institute of Education Mauritius

The Mauritius Institute of Education (MIE), Mauritius, is a parastatal body and degree-awarding institution of Higher Education, operating under the aegis of the Ministry of Education, Tertiary Education, and Science & Technology. The MIE has a three - fold mandate, namely, Teacher Education, Curriculum Development and Educational Research. It is also responsible for the development of the National Curriculum Framework for the pre-primary, primary, secondary education and the Special Educational Needs sectors for the Republic of Mauritius, as well as the development of the Teaching and Learning Syllabus (TLS) and teaching and learning resources such as textbooks and interactive digital materials. The MIE is centrally concerned with the professionalization of key stakeholders in education, including the Early Childhood Education and the Special Educational Needs. Teacher Education is the core activity of the MIE. It provides pre-service and in-service teacher education and courses for continuous professional development. Teacher Education programmes include Certificates, Diplomas, Degrees, Post-Graduate Certificates, Post Graduate Diplomas, and Doctoral studies.

The MIE offers a range of programmes in collaboration with international universities, from the UK and South Africa, which include Masters in Education, Ed.D and Ph.D programmes. The MIE is active in educational research, which provides the basis for contextually appropriate pedagogy in teacher education. Furthermore, it allows teaching to keep pace with international trends to cater for the needs of 21 st Century schools. The MIE uses online teaching and a blended mode of delivery through Office 365 and Microsoft Teams Technology. As such, the Institute expects to reach a global clientele by enabling external students to acquire international qualifications and recognition through MIE strategic partnership with international institutions of repute.

For more details please visit: <http://web.mie.ac.mu/>



Homi Bhabha Centre for Science Education Mumbai

Homi Bhabha Centre for Science Education (HBCSE) is a National Centre of the Tata Institute of Fundamental Research (TIFR), Mumbai, India. The broad goals of the institute are to promote equity and excellence in science and mathematics education from primary school to undergraduate college level, and encourage the growth of scientific literacy in the country. To these ends it carries out a wide spectrum of inter-related activities, which may be viewed under three broad categories: Research and Development; Teacher Education and Science Popularisation; Olympiads, NIUS and other Students' Nurture Programmes.

HBCSE is the premier institution in the country for research and development in science, technology and mathematics education. It is India's nodal centre for Olympiad programmes in mathematics, physics, chemistry, biology, astronomy and junior science.

HBCSE (TIFR) runs a Graduate School in Science Education. Students admitted to HBCSE Graduate School work towards the Ph.D. degree of the Tata Institute of Fundamental Research (TIFR) which is a Deemed University. For more details please visit: <https://www.hbcse.tifr.res.in/>



MCT's College of Education and Research Airoli, Navi Mumbai

&

Thakur Shyamnaryan College of Education and Research Kandivali, Mumbai

In Collaboration with

Mauritius Institution of Education Mauritius

&

Homi Bhabha Centre for Science Education TIRF Mumbai

Organizes

International Workshop on Developing Methodological Framework to Enhance Critical Thinking in Teaching of Science

25th to 27th August 2022



On the Special Occasion of

Azadi Ka Amrit Mahotsav

MCT's College of Education and Research Airoli, Navi Mumbai

Manjara Charitable Trust is a renowned trust in Maharashtra, founded by India's distinguished administrator, Shri Vilasraoji Deshmukh in 1988. It is a social welfare organization whose goal is economic, social, political, and cultural upliftment of the masses in Maharashtra by providing quality education.

In keeping with the ideals of the Trust, MCT's College of Education and Research has been for nearly four decades serving the needs and interests of the people. Manjara Charitable Trust (MCT) College of Education and Research has been in the forefront imparting high quality Teacher Education and is one of the best colleges in Navi Mumbai. The MCT's College of Education & Research, Airoli established in 2005, is affiliated to Mumbai University and approved by NCTE. Since its inception, College is experiencing remarkable growth both qualitatively and quantitatively.



The College is governed by the voice of the many, a shared responsibility of faculty, Academic staff, and students respectively. From a modest beginning and as a result of the Judicious application of limited resources, College has grown into an established eminent Teacher Education Institution within one and a half decades. It stands in the midst of an ever-expanding revolution in communication, which influences fundamentally the technology and practices in Education.

For more details please visit: www.mctbedcollege.org

Thakur Shyamnaryan College of Education and Research Kandivali, Mumbai

Thakur Trust has educational institutions from Pre-primary to Post- graduation level. Under Thakur trust, TSCER is one of the prestigious Teacher Education institutions in the suburban Mumbai affiliated to University of Mumbai. The vision of the institution is to prepare effective teachers for National and Global level.

TSCER has completed a glorious decade in its journey which started in 2008 and the academic year 2021-22 is the 14th year of in a humble attempt to prepare dynamic teachers not only capable of facing the challenges of 21st Century Education but also to use their knowledge and skills to prepare the future generations for the same & Expecting the same quality for further years.

TSCER provides learning experiences for the budding teachers from academics to co-curricular as well as cultural activities since past thirteen years. TSCER students are being recruited by prominent educational institutions and are performing wonderfully in their profession.

For more details please visit
[:http://tscermumbai.in/](http://tscermumbai.in/)



Patrons

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Shri Amit V. Deshmukh Mrs. Aditi A. Deshmukh Executive Trustees, Manjara Charitable Trust	Shri Jitendra R. Singh Trustee & Hon. Secretary
Mr. Kaushal Paurana CEO, MCT & VDF Foundation	Shri Rajkumar S. Singh Treasurer
	Shri Rakesh V. Singh Trustee, TSCER

Convenors

Dr. Savita Sable Principal MCT's College of Education and Research	Dr Megha Gokhe Principal Thakur Shyamnaryan College of Education and Research
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Organizing Committee

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Dr. Jyotirmayee Nayak Asst. Professor, MCTs	Ms Rukminee Yadav Asst. Professor, TSCER
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Mrs. Divya Belchada Asst. Professor, MCT	

Introduction

Education is the process of learning or acquisition of knowledge, skills, values, morals, and beliefs for full human potential. The National Education Policy (NEP) 2020 lays emphasis on developing the “creative potential” and “higher-order cognitive capacities” of students. That includes “critical thinking and problem solving” in addition to “social, ethical, and emotional capacities and dispositions”. Keeping in mind the importance of teachers in the education system, the NEP-2020 has underlined the role of teachers along with the desired attributes of teachers for nation-building. This shift requires a different set of skills from teachers. In addition to being knowledgeable about their subject matter, they must also be skilled in critical thinking and problem-solving. Critical thinking is the ability to think deeply about a problem or question, and to come up with creative solutions. In other words, critical thinking is disciplined thinking governed by a set of intellectual standards. It is an essential skill for teachers, as it allows them to guide their students to think critically about the concepts they are learning and how they are applied in contexts. Teacher education programs must adapt to this new reality and prepare future teachers for their evolving roles. Providing opportunities for future teachers to develop their critical thinking skills is essential. Only then will they be able to provide their students with the best possible education.

Critical thinking is a highly desired attribute for teachers. Teachers who are able to think critically can identify problems and find solutions more effectively. They can also better understand and communicate with their students. There are many ways to develop critical thinking skills. Some people can inculcate themselves with these skills during self-study, while others develop them through experience or education with the guidance of other knowledgeable professionals.

There are also many resources available that can help people to develop their critical thinking skills. With the NEP 2020 coming into effect, we are hoping to transform education and putting a significant thrust on learning about how to think critically and solve problems effectively, how to be creative and multidisciplinary, and how to innovate, adapt, and absorb new materials in novel and changing fields. The new curriculum will include basic arts, crafts, humanities, games, sports and fitness, languages, literature, culture, and values, in addition to science and mathematics, to develop all aspects and capabilities of learners, and make education more well-rounded, useful, and fulfilling to the learner.

About the Project

In 2021, an international collaboration between the Mauritius Institute of Education (MIE) and the Homi Bhabha Centre for Science Education (HBCSE), Tata Institute for Fundamental Research (TIFR), Mumbai & three associated teacher education colleges & schools from India has undertaken a comparative study about critical thinking among science trainees in both countries (India & Mauritius). The project title is: Understanding the Level of Critical Thinking internalized by Science Student-teachers and the associated misconceptions: An International perspective.

The aim of this study is to:

- a) determine whether student-teachers in the two collaborating institutions (MIE, Mauritius and HBCSE & Education Colleges, India) have, during their training, developed critical thinking;
- b) identify how student-teachers relate CK and PCK with critical thinking;
- c) develop a methodology for engaging students-teachers from MIE and HBCSE & Education Colleges, India in collaborative engagements. The MIE team members came up with a research study on the assessment of critical thinking of learners in

physics and they found the Barnett model (1997) to be most appropriate for assessing critical thinking in science. This model captures three levels of critical thinking, namely, Thinking, Reflecting, and Action. After some brainstorming session both team members decided to adopt a particular type of scenario, which is directly related to the real life of the learners with a view to provoking them to critically reflect on a particular contextual problem in their immediate environment, that is, at their home place and to relate their prior knowledge to the science concepts learnt at school. Students both at the secondary and tertiary levels have a difficulty in articulating critical thinking in putting into action the thinking and reflecting elements.

First workshop at Satara and Mumbai

As a part of this project we decided to organise workshops: ‘International Workshop on Developing Methodological Framework to Enhance Critical Thinking in Teaching of Science’, in India (2022) and in Mauritius (2023). In India, the first workshop we are organizing jointly with Rayat Education Society’s Azad College of Education, Satara from August 22-24, 2022 and the second workshop with Thakur Shyamnarayan College of Education and Research, Kandivali, Mumbai & MCT’s College of Education & Research, Airoli, Navi Mumbai from August 25-27, 2022.

The purpose of the ‘International Workshop on Developing Methodological Framework to Enhance Critical Thinking in Teaching of Science’, is intended to: a) analysis the CT & science pedagogy; b) apply framework for critical thinking, which is based on Barnett model to asses critical thinking; c) develop the scenario-based tasks for the identification of critical thinking elements in articulation of thinking of trainees; d) to create learning environments that promote critical thinking both in the classroom and beyond among science trainees.

Programme Schedule

Day 1

09.30 - 10.00	Registration
10.00 - 11.00	Inauguration
11.00 - 12.00	Pre-test(Q1): To assess Teacher Trainee CT Skills
12.00 - 01.30	Keynote Address- Prof Yashwant Ramma
01.30 - 02.30	Lunch Break
02.30 - 04.00	Orientation to Critical Thinking (CT) and Group Work
04.00 - 05.00	Open Forum

Day 2

09.30 - 10.00	Breakfast
10.00 - 11.00	CT and Science Pedagogy : Discussion and analysis (Group work)
11.00 - 01.00	Introduction of Methodological Framework on CT
01.00 - 02.30	Lunch Break
02.30 - 04.00	Planning and Preparation --Template of Science SBL (Group work)
04.00 - 05.00	Open Forum

Day 3

09.30 - 10.00	Breakfast
10.00 - 11.30	Presentation and Finalization of developed Science SBL
11.30 - 12.30	Post test (Q 2) : To assess Teacher Trainee CT Skills
10.30 - 11.30	Valediction of the Workshop
01.00 - 01.45	Lunch Break

[For
Registration
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Venue

Thakur Shyamnaryan College of
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How to Reach

