



SCIENCE

HOTS IN SCIENCE

OVERVIEW

This course will introduce participants to the what, why and how of higher order thinking as well as useful teaching and learning approaches, strategies and thinking tools that foster HOTS amongst science students. Students need to be prepared to be a creative and innovative workforce. It is no longer enough for high school graduates to simply know basic facts and skills. In order to be successful, students must master decision-making, prioritising, strategizing and collaborative problem solving.

LANGUAGE

English

TIME

2.00—4.30pm

DURATION

5 hours (2 sessions)

TARGET PARTICIPANT

- ◆ Upper primary science teachers
- ◆ Lower secondary science teachers

METHODOLOGY

- ◆ Open ended discussions
- ◆ Diagnostic tests on participants' scientific literacy – nature of science
- ◆ Active learning strategies – using expert group model, nominal group technique and think-pair share.

LEARNING OUTCOMES

On successful completion of this module, teachers will be able to:

- discuss definition and notion of HOTS in science education;
- improve on scientific literacy;
- acquire at least one strategy to develop HOTS through contemporary teaching and learning approaches; and
- incorporate thinking tools to cultivate creative, critical and inquiry thinking skills;

CONTENT

- In-depth discussions on the nature of science.
- Exploration into different types of thinking.
- Discussion on differences between LOTS and HOTS.
- Evolution of Bloom's Taxonomy.
- Introduction and modelling of Socio-Scientific Issues-Based Education (SIBE). as a teaching and learning approach.
- The use of six thinking hats, Venn diagram and fishbone as thinking tools.