

MODULE 1

Concept-Based Teaching and Learning: A Student-Centered Cross-Disciplinary Curriculum linked to the Sustainable Development Goals (SDGs)

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DESCRIPTION

To enhance their pedagogy and for best practice, teachers will learn how to integrate concepts into the interdisciplinarity of teaching and learning in scientific disciplines. The theoretical focus will be placed on knowledge structure and the essential elements of concept-based curriculum design linked to the SDGs. The practical part of the module will engage teachers in an SDG concept-based experiential activity as well as unit planning (conceptual statements and questions) for real-world transfer of learning by students.

LEARNING OBJECTIVES

Throughout the workshop participants will:

- recognize the value of concept-based teaching and learning.
- understand the difference between facts, processes and concepts in their subject area.
- gain insight of the development of conceptual understanding in learners through interdisciplinarity.
- learn to craft quality guiding questions.
- embed the use of technology to foster and enhance conceptual understanding.
- use the knowledge structure and essential elements of concept-based curriculum to design learning experiences.

THEORY

Participants will achieve the above learning objectives by:

- defining concept-based teaching and learning using keywords such as concepts, inquiry, big ideas, competencies, deep learning and more.
- identifying the building blocks of and tools for concept-based instruction.
- making comparisons with content based curriculum to identify purpose and advantages of teaching and learning by concepts
- engaging in the development of inquiry questions on big ideas using concepts that are worthy, timeless, universal, and abstract.
- designing assessments for conceptual understanding (backwards planning)
- finding ways to make it happen in each and every classroom by following the QPKII (question, problematic knowledge, inquire, integrate).

PRACTICAL/HANDS-ON

- *Thinking Routines*: activities used throughout the workshop to strengthen knowledge and understanding of concept-based teaching and learning
- *SDG Project Development*: activity to help teachers engage learners in finding and designing solutions for sustainable development goals (SDGs)
- *Unit Plan*: consolidation activity to apply concept-based teaching and learning in the classroom

USEFUL RESOURCE

Stern, J. H., Mohnkern, J., & Ferraro, K. F. (2017). *Tools for teaching conceptual understanding (Secondary): Designing lessons and assessments for deep learning*. Thousand Oaks, CA: Corwin, a SAGE Publishing Company.

