

MPRI210 Embracing Numeracy Strategies

ECTS Value: 1 ECTS
Self-Study Hours: 12

Contact Hours: 5
Assessment Hours: 8

Overall Objectives and Outcomes

Numeracy Skills are fundamental in our daily lives hence the importance of this module. The module will aim at giving participants a greater appreciation of an inquiry-based learning approach including the use of and the promotion of problem solving situations in the classroom, the use of appropriate questioning techniques to enhance the development of the learner's analytical skills, the use of manipulatives to provide a multi-sensory approach to the learning of the fundamental basic numeracy skills and concepts needed.

By the end of this module, the learner will be able to:

Competences:

- a) Manage anchor/problem solving tasks in the classroom;
- b) Produce anchor tasks which enhance the development of much needed analytical skills also using technological devices;
- c) Ensure that the right questions are asked to get the learner to engage in higher order thinking;
- d) Create resources that can be used to provide an experiential and multisensory learning experience in the classroom;
- e) Be responsible for using manipulatives such as Base Ten Blocks and Numicon to support the learner's learning structure and help him/her build mental representations of the concept at hand;
- f) Establish what evidence of the learner's mastery of the numeracy skills and concepts at hand can be collected in a given task.

Knowledge:

- a) Recall a set of heuristics as problem solving strategies which they may suggest to their learners in the classroom;
- b) List different questions that may be asked to engage learners in higher order thinking;
- c) Define why a multisensory approach to the acquisition of numerical skills and concepts is essential;
- d) Label a list of maths resources which can be used to provide an experiential and multisensory learning situation such as Base Ten Blocks;
- e) Describe the different uses of each maths resource in relation to the teaching of the various numeracy components.

Skills:

- a) Prepare appropriate anchor tasks which embrace an inquiry-based approach to the learning of numerical skills and concepts;
- b) Create resources that can be used to provide an experiential and multisensory learning experience in the classroom;
- c) Plan which questions to ask the learners and the time when to do so;

- d) Use different manipulatives such as Base Ten Blocks to make classroom activities as multisensory as possible;
- e) Use different ways of collecting evidence of learners' mastery.

Assessment Methods

This module will be assessed through: Journal/Learning Task

Suggested Readings

Core Reading List:

- 1) Chapman, O. (2011). Elementary school teachers' growth in inquiry-based teaching of mathematics. *ZDM: The international journal for mathematics education*, 46 (6), pp. 951-963. doi:10.1007/s11858-011-0360-3.
- 2) Watt, J. and Colyer, J. (2014). *IQ: A practical guide to inquiry-based learning*. Canada: Open University Press (OUP).
- 3) McTighe, J. and Wiggins, G. (2013). *Essential Questions. Opening Doors to Student Understanding*. Alexandria, VA, USA: ASCD.