BPRI121- Developing the Young Mathematical Mind

ECTS Value: 5 ECTS
Self-Study Hours: 60

Contact Hours: 25
Assessment Hours: 40

Overall Objectives and Outcomes

This module focuses on the content to be covered during Mathematics lessons in primary schools in Years 1 to 6. Year 1 and 2 are part of the Early Childhood Education while Years 3 to 6 are referred to as Junior Years.

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

Competences

a. extend syllabus-bound activities and textbook-based activities to real life mathematical application so as to generate a more holistic childhood development.
b. formulate a weekly scheme of work which includes the inter-linking of different topics, and later self-reflect on this task.
c. enhance the understanding of common Mathematics difficulties and misunderstandings by solidifying their own perception and relationship to the subject content.

Knowledge

a. develop an understanding of the history of mathematics education;
b. explain theories related to how humans develop an understanding of specific topic in the topics taught such as Van Hiele's model for shapes and use this knowledge as background when creating activities;
c. communicate various arguments that show that Mathematics education must be a crucial part of the primary education curriculum;
d. reference the different learning outcomes as well as the key vocabulary related to mathematics;
e. develop a knowledge of several learning opportunities that outlined in the syllabus;
f. develop an understanding of how various mathematical topics can be interrelated;
g. identify the content which educators are encouraged to cover through the maths learning outcomes framework.

Skills

Applying knowledge and understanding

The learner will be able to:

a. devise attractive, student-centred lessons and classroom activities which are inter-linked and meaningful to the learners' realities;
b. create anchor tasks that are related to the different topics in the syllabus and can be used to introduce a lesson as a strategy for engaging the learners;
c. devise tasks which broaden the learners' basic numeracy skills to a deeper understanding of mathematical concepts, principles and applications.
d. prepare mathematical lessons number and place value, addition and subtraction, multiplication and division, fractions, decimals, percentages and proportion, mass, capacity, length, perimeter

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and area, time, money, shapes and symmetry, position, direction and angles as well as tables, graphs and averages.

e. prepare activities which comprise a range of tasks and problems and entail the application of a number of mathematical ideas.
f. evaluate and select useful multisensory resources for each of the topics dealt with which will help them to ensure that a Concrete Pictorial Approach is always maintained;
g. evaluate and choose a bank of activities that may be used as part of a continuous assessment approach for each of the topics covered.
h. link the content of previous year groups to what will be covered in future years.

Assessment Methods

This module will be assessed through: Scheme of Work, Peer-Feedback and Self-Reflection.

Suggested Readings

Core Reading List

1. Primary Maths Support Team. (2014). *Mathematics - a revised Syllabus for Primary Schools*. Malta: Department of Curriculum Management, Ministry of Education and Employment.
2. Pepperell, S. (2014). *Mathematics in the Primary School*. Routledge.
3. Haylock, D., & Cockburn, A. (2013). *Understanding mathematics for young children (4th Edn.)*. London: Sage.

Supplementary Reading List

1. Koshy, V., Casey, R. and Ernest, P. (2014). *Mathematics For Primary Teachers*. Hoboken: Taylor and Francis.
2. Davis, A., Goulding, M. and Suggate, J. (2017). *Mathematical Knowledge for Primary Teachers*. Florence: Taylor and Francis.
3. Tiley-Nunn, N. and Beadle, P. (2014). *Primary Maths*. Carmarthen, United Kingdom: Independent Thinking Press.
4. Rowland, T. (2009). *Developing Primary Mathematics Teaching*. Los Angeles: SAGE.

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