# INNOMATH: Innovative enriching education processes for Mathematically Gifted Students in Europe

**Reference number**: 2019-1-DE03-KA201- 059604

**Implementation period**: September 2019 – August 2021

## Training program for teachers or others interested in the identification/ support/ enriching with practical skills of mathematically gifted students in the context of the INNOMATH project

**Template** (*for the Methodology and Structure of a Learning Plan for Presenting a Module for the INNOMATH course programme, module of 3 hours duration*).

**Module Number and Area/ Topic**: Evolution of Education 1.0 to 4.0 , Future Schools

## Introduction and Broad Description of the Context and Goal of the area/ topic addressed:

The education systems implemented in most countries today are characterised by the elements of Education 2.0, while very few countries are pushing for reforms defined by Education 3.0. The features of the development stages of Education from Education 1.0 to Education 4.0 are more or less clear. But talking about Education 4.0 with today's technologies may not be so accurate. We do not know what will be the technologies in 15-20 years and how these will affect the learning processes. However, we do know that today's technologies are not fully utilized in the current learning processes in school education systems. One of the objectives of this course is to try to answer the question: is this an evolution or a revolution? Some results of EU funded projects, like L-Cloud: Development of tomorrow's Cloud Education Leaders will be discussed, the STEAME project and other.

## Learning Outcomes: With the completion of this module the trainees will be able to

1. Understand the evolution differences of Education 2.0, 3.0 and 4.0

2. Understand the need to be adaptable to change

3. Understand and develop creative thinking for future schools

**Content and Resources (providing information on the various constituents/ dimensions of the topic under consideration):**

**Methodology and approaches for the module training presentation:**
1. Presentations of definitions
2. Presentation of Reasoning for change and highlights from reports on evolution of learning
3. Presentation of tools, methods and new approaches in learning
4. Discussion sessions and debates

**Instruments/ Tools/ Supporting Material/ Resources to be used:**
…………
(list of file, web links, videos, PPT…. use file names inseting the Module number)
1. PPT on Evolution of Education from EDU 1.0 to EDU 4.0
2. Presentation of related videos of modern schools as a case study for discussion
3. Comparative Tables and studies
4. Adaptable Cloud Education Leaders related reports
5. Guidelines for STEAME Activities and Schools
6. Related Websites supporting learning of the future such as
www.steame.eu,
https://www.schooleducationgateway.eu/en/pub/index.htm

**Pedagogical/Learning Sequencing and Activities Plan:** ………………..
**Introductory activities (**creation of interest, reference to real value issues, relation to background experiences etc)

| Activity 1 – Comparative thinking: | |
|---|---|
| Development | Compare past, present and consider what has changed over the last 100 years. |
| Materials | PPP, pictures, presentation by trainees of their school learning environment |
| Resources | Slides, Pictures |
| Estimated Time | 30 min |
| Environment/Room Setting | U-Shape or ZOOM |
| Trainees' role | React to questions raised by the trainer |

**Development activities**

| Activity 2 – Needs for change: | |
|---|---|
| Development | What has to change? What teachers in Europe say? |
| Materials | EU reports for schools and learning needs |

|  | Survey reports by the STEAME project and other |
|---|---|
| Resources | Web reports, pictures, videos |
| Estimated Time | 30 min |
| Environment/Room Setting | U-Shape or ZOOM |
| Trainees' role | Reading, discuss, imagine, create |

| Activity 3 – What experts say?: | |
|---|---|
| Development | Think Tank suggestions |
| Materials | Publications by experts, reports by authorities |
| Resources | Publications, Executive Summaries, Web reports, pictures, videos |
| Estimated Time | 30 min |
| Environment/Room Setting | U-Shape or ZOOM |
| Trainees' role | Considering, Evaluating, Estimating, imagine, realise, discuss |

## Practicing Activities (hands-on activity)

| Activity 4 – Design the future with critical evaluation: | |
|---|---|
| Development | Exercise to write a set of pedagogical changes, learning environments and methods, infrastructure changes that could be done if the teacher had the power to do |
| Materials | Small self stick papers. Teachers are asked to write what they will stop in red papers, what they will keep in yellow papers and what they will change or introduce in green papers |
| Resources | Boards in the room so teachers can stick their ideas |
| Estimated Time | 20 min to prepare the papers, 5 min to stick them on the board, 15 min to peer review and evaluation for what colleagues uploaded . |
| Environment/Room Setting | U-Shape with boards available ZOOM with sending ideas via chat |
| Trainees' role | Moderate the activity and coordinate the discussion at the end |

## Evaluation of Learning Outcomes

| Activity 5 – Conclusion of Activity 4: | |
|---|---|
| Development | Discuss with trainer and prioritize. |
| Materials | Live Board |
| Resources | Prioritize listing for the three categories Stop-Keep-Introduce (SKI) |
| Estimate Time | 30 min |
| Environment/Room Setting | U-Shape with boards available ZOOM with sending ideas via chat |
| Trainees' role | Moderate the priority listing |

# Reflection and Closure activity:  Do we have a plan of change?