Online Seminar Series on Programming in Mathematics Education

Friday, July 31, 2020, 11:00 am - 12:15 pm EDT

Chronis Kynigos

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Designing for Mathematics through Baking

40 years on from Mindstorms, programming is mostly poorly connected to mathematics curricula considered either as irrelevant or at best as a fragmented add-on to an already extended syllabus. In my talk I will focus on my recent attempts to design contexts where constructionist activity fuses programming with the use of mathematical concepts to engage in computational thinking. I will discuss two diverse situations: one where programming animated 3D graphical models addresses the mathematical properties inherent in their behavior (MaLT2) and another where mathematics becomes a humble tool in a very different setting and paradigm, that of addressing socio-scientific issues within a post-normal science paradigm (ChoiCo). Respectively MaLT2 and ChoiCo are authoring systems freely available to use on the web and in English. 'Baking' means modding and fixing specially crafted 'half-baked', i.e. faulty or incomplete, artefacts or games. I will draw examples from three contexts in Greece: a new Masters course at NKUA with students of diverse specialty, an also new Masters course for Swedish Mathematics Teachers through my collaboration with Linnaeus University, and thirdly the Ministry of Education's digital infrastructure including more than 200 programmable micro-experiments in the year 5-11 mathematics curricula.

Prof. Chronis Kynigos is Director of the Educational Technology Lab at NKUA. He is interested in the design of digital media for socio-constructionist learning activity and their use in the context of added-value pedagogical methods. Recently, he co-designed and developed 'MaLT2' for mathematical modelling and 'ChoiCo' for socio-scientific gaming. He has been involved in large-scale interventions in mainstream education, focused on the value of design in the context of lifelong learning.

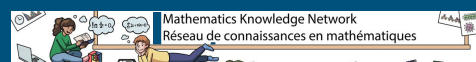## FREE registration - visit the MKN website

Next Seminar: Friday August 14 2020, 11:00 am EDT
Ricardo Scucuglia (São Paulo State Univeristy, Brazil)
Computational Thinking and Humans-with-Media: Blocks, Fractals, and Music

For all seminars in this series, please visit the MKN website

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