STEAM for the Future - Integrating Hungarian, Israeli and South African Arts into Mathematics Teaching

Zsolt Lavicza
Johannes Kepler University, Austria
lavicza@gmail.com

Kristóf Fenyvesi
Jyväskylä University, Finland
fenyvesi.kristof@gmail.com

Philip Collett
Nelson Mandela Metropolitan University, South Africa
philip.collett@nmmu.ac.za

Thierry Dana-Picard
Jerusalem College of Technology, Israel
ndp@jct.ac.il

Sara Hershkowitz
Israel Center for Educational Technology, Israel
sarah@cet.ac.il

Werner Olivier
Nelson Mandela Metropolitan University, South Africa
werner.olivier2@nmmu.ac.za

Gyorgy Tury
Budapest Metropolitan University, Hungary
gtury@metropolitan.hu

Gabriella Uhl
Budapest Metropolitan University, Hungary
guhl@metropolitan.hu

Diego Lieban
IFRS-Bento Gonçalves, Brazil
diegolieban@yahoo.es

Abstract

Connecting mathematics and the arts is becoming increasingly important not only to teach mathematics from new perspectives, but also to enhance the inter- and trans-disciplinarity of education. Our research group has been working together during the past two years, with the support of an Erasmus+ mobility programme, to explore how Hungarian, Israeli and South African Arts could contribute to the teaching and learning of mathematics and how to create activities to raise attention for such issues for students, teachers and researchers.

In our project, we organised several meetings and conferences where prominent researchers and teachers shared their ideas and we aimed to further develop and embrace these ideas for education. Applying the generated ideas, we also run student and teacher workshops in Hungary, Israel, and South Africa.

These workshops offered us additional insights into the development of education with arts and mathematics. We utilised not only traditional teaching materials, arts objects, but also employed various kinds of technologies as well as integrated knowledge from other

subjects to create and experiment STEAM (Science, Technology, Engineering, Arts and Mathematics) based approaches and pedagogies.

We also paid particular attention to connecting physical and digital activities and use the most out of them for learning. In our presentation, we will outline activities of the project and offer examples of culturally-anchored STEAM-based teaching materials and approaches.