



Building Interdisciplinary Bridges Across Cultures

## Antonija Balić Šimrak

### Abstract

Almost In this session we present on an interdisciplinary project The Mathematical Picturebook – Artistic and Literary Activities as an Encouragement to Young Learners (MASLIK), conducted at the Faculty of Teacher Education, University of Zagreb, Croatia. The project explored combining science and art in educational context. It was focused on young learners and their mathematical competences. Its main goal was twofold. Firstly, the project aimed at establishing conceptual foundations for designing materials in the form of picturebooks and short animated films that would facilitate the process of acquiring mathematical concepts by young children. Secondly, materials that combine mathematical ideas and aesthetic experiences were produced, to help young learners develop their creative potentials in both areas. The project outcomes contradict the common belief that children find such mathematical concepts as number or geometric shapes too difficult because of their abstract nature. The idea that mathematical concepts are important not only for the intellectual development of a child, but for the development of the child's personality as a whole, was at the heart of this venture. Picturebooks and animated films offer an approach that is both appropriate and acceptable to young learners. The picturebook as a form is a multimodal and playful form, interactive by definition. It encourages its audience to read The central theme was combining the ideas of circle and disc with basic counting skills. One of the picturebooks, about numbers, is based on soft sculpture, involving sewing and embroidery. The other explores various combinations of the circle and the disc, inviting readers to participate by fitting in cut-out shapes into die-cut slots. The films focus on the relationship of these two shapes as mathematical concepts. One of them shows how these shapes transform into each other and the other presents them as characters that share some adventures and reveal their distinctive features in the process. Picturebook and film instigate and deepen the child's sensibility for aesthetic experiences and improve the child's general appreciation of artistic creations. They stimulate children to think creatively and improve their observation and reflection skills. Besides, making picturebooks and films with mathematical content brings mathematics closer to children.

Antonija Balić Šimrak, is an Associate Professor at the Faculty of Teacher Education, University of Zagreb (FTEUZ), Croatia. Antonija is also a sculptor and early education expert, who teaches courses in art and creative education. She leads the interdisciplinary project The Mathematical Picturebook. The whole team comes from FTEUZ, Croatia. Dubravka Glasnović Gracin, PhD, is Assistant Professor, and a mathematician and expert in early learning, who teaches courses in mathematics and teaching methodology. Smiljana Narančić Kovač, PhD, is Assistant Professor, a literature and ELT expert, and teaches courses in children's literature and picturebook. Kristina Horvat Blažinović, is an Assistant Professor, a multimedia artist, and teaches courses in art and early learning. Vlatka Velički, Assistant Professor, is an expert in Croatian children's literature and early learning, and teaches courses on developing language and literature competences. Danijel Žabčić, is Full Professor, a painter and fine arts expert, teaches art courses and leads the Gallery of FTEUZ, Croatia. Predrag Oreški, PhD, is an Assistant Professor, an IT expert, teaches courses in IT in Education.