It is clear by now that computer-based applications are playing an increasingly important role in the field of music education (e.g. Bauer, 2014; Finney & Burnard, 2009; Manzo, 2011; Rudolph, 2005; Webster, 2002, 2011). The development of all kinds of commercial motion controllers (e.g. Wii®, Kinect®) and software platforms (e.g. Max/MSP, Processing) gives rise to a growing number of educational technologies. Designed to provide a rich and engaging learning environment, they are believed to empower learners in their pursuit of music instrumental skills, musical creativity and expressiveness. Evidently, these developments have led to numerous explorations and implementations within the music curriculum.

In this paper we describe our work with the Music Paint Machine, an educational technology that is designed to support the development of instrumental skills and musical creativity. It allows a musician to make a digital painting by playing a musical instrument while moving in various ways. We believe this application introduces a novel approach to movement and visual feedback in instrumental music education.

The Music Paint Machine was developed within an interdisciplinary research framework based on the collaboration between the researcher (also musician and teacher), soft- and hardware developers, teachers and learners.

After presenting an overview of the system, we discuss its pedagogical background (embodied music cognition, educational constructivism). Next, the characteristics of the system are outlined and discussed with regard to the system’s potential of inducing a flow experience. Finally, we present a longitudinal case study in which 12 children (1st & 2nd grade) learned to play the clarinet. We give an overview of the main results and discuss them in the light of the presented background.