



Jakob Gyllenpalm

Abstract

As a science teacher educator and musician I have often found it useful and illuminating to compare teaching with music. In particular I find that planning instruction and the act of teaching has many similarities to composing and improvising in music, especially jazz. Both involve creativity in the preparation, as well as in the moment of performance with a sensitivity to the evolving and constantly changing context. This is probably one reason why teaching is often described as an art, making it relevant to compare the creative processes in teaching with those of other art forms. For teacher education this leads to questions concerning how the education of teachers prepare them for the creative aspects of their task, and what teacher education can learn from the education of other artists, and in particular jazz musicians. The reason for choosing to focus on jazz is that it is a tradition that places improvisation in the foreground while simultaneously containing many of the formal and theoretical aspects of classical music. This provides a rich basis for comparing the theory/practice relationship in both domains. In this work I present an analysis of the similarities and differences between teaching and music and what this may imply for science teacher education. A starting point for comparing teaching and music is the observation that both teachers and musicians may be informed by a theoretical understanding of their craft, but that this is not always indispensable. Many teachers, if not most, rely more on experience and examples of good teaching when planning and conducting teaching than they do on the results of educational research. These preliminary observations lead to a number of interesting questions regarding teacher education that I will address: What is the role of educational research in relation to teaching when it is seen as an art or craft? How are arts and crafts taught and studied in other areas (e.g. music) and what can teacher education learn from such a comparison? And what does this imply for how teacher education programs are organized? In this presentation I want to discuss; (a) a new model of creativity and its relevance for teacher education, (b) the rationale for using a comparison with art education to help bridge the theory/practice gap in teacher education, and (c) a summary of what such a bridge may look like based on the similarities between teaching and jazz music. My intention is thus to inquire into the potentially problematic relationship between theory and practice in science teacher education, as well as to provide some hopefully constructive suggestions that follow from comparing teaching as an art with music.

Bio

My educational background is in physics in which I have a Masters degree, and before that music which I studied in a specialized high school. After embarking on a PhD program in experimental quantum chemistry, I decided to change focus and become a teacher, and obtained a Master of Teaching degree. While in the teacher education program I was offered to do a PhD in science education. After my dissertation I went back to school and taught physics and math in the International Baccalaureate program. Simultaneously I have continued to explore art, creativity and philosophy, and their connection to teaching and learning in a number of ways including e.g. improvisational music, dance, yoga, Tai Chi, and more. Since four years, I am back at the university as a lecturer and researcher in science education. My present interest revolves around teacher education and laboratory work in high school and university physics education.