Beiträge empirischer Musikpädagogik

b:em, Vol. 15
April 2024
ISSN: 2190-3174
DOI:
10.62563/bem.v2024237

The bright future of research on creativity in music education

Zur vielversprechenden Zukunft der musikpädagogischen Kreativitätsforschung

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Summary
Over the last decades, theories of creativity have developed from frameworks where creativity is understood as mainly an individual, internal cognitive process, to theories viewing creativity as socially constructed, materially and culturally embedded and embodied, and emergent over time. In this article, I will review these developments and connect them to empirical research on music education. We will come to conclude that musical creativity is not something music students are born with, but rather an acquired skill that emerges out of an interaction between the student, their teacher(s), peers, and musical 'material' such as musical instruments or composition software. Detailed analyses of these processes, both qualitative as well as quantitative, are necessary to better understand the diverse ways in which musical creativity develops.

Keywords:
musical creativity, sociocultural theory, affordances, competencies, music education

Zusammenfassung
In den letzten Jahrzehnten hat sich die Auffassung von Kreativität gewandelt – von einem vorwiegend individuellen, internen kognitiven Prozess zu einem sozial konstruierten, kulturell verankerten Phänomen. Dieser Artikel verknüpft diese Entwicklungen mit empirischer Forschung zur Musikpädagogik. Es zeigt sich, dass musikalische Kreativität keine angeborene Gabe ist, sondern eine erworbene Fertigkeit, die durch die Interaktion von Studierenden, Lehrkräften, Peers und musikalischem 'Material' entsteht. Eine detaillierte Analyse dieser Prozesse ist notwendig, um die vielfältigen Wege der musikalischen Kreativitätsentwicklung zu verstehen.

Schlagwörter:
musikalische Kreativität, soziokulturelle Theorie, Möglichkeiten (affordances), Kompetenzen, Musikpädagogik

1. Introduction

Throughout history, human beings have engaged in creative expressions in countless ways and forms. In fact, the ability to imagine physical objects, songs, and solutions to problems and then acting upon these imaginations can be considered at the very core of what makes us human (Welch & McPherson, 2012). Creativity emerged as a theme of interest in research in psychology especially in the post second-world war era. This was a time of great technological advancements: the development of the computer, of space travel and of new sources of energy. Understanding how people come up with these novel, and ever more complex technological inventions was seen as a crucial condition to be able to not only 'keep up' with the advances but also to push their development forward. The idea that the complexity of the world in which we live keeps increasing exponentially is still very much alive today. Creativity is seen as a central part of the '21st century skills' that students need to navigate the complex society today and in the future. Although the idea of 21st century skills is heavily debated in the scientific community (Kirschner & Stroyanov, 2020), the idea that creativity is relevant in today's society and education, and therefore also as a topic of scientific investigation, is still very much alive.

Creativity can play a role in different school subjects in different ways. In STEM classes, thinking of different ways to solve a mathematical problem, or brainstorming about different hypotheses to test in an experiment are examples of creative thinking by students. Creativity is also (and perhaps foremost) central in arts and arts education (and correspondingly in music education). Improvising and composing music, in general music education or extracurricular instrumental music education, alone or together with other students, can be considered core competencies to be acquired in and through music lessons. But how do students acquire these competencies? In parallel with a surge research on children's creativity, students' creativity in music education has also gained attention during the past two to three decades. Webster (2002) predicted that the turn of the century would mark a transition in music education and music education research, with the focus of research broadening to "a more comprehensive approach [...] which embraces the study of musical composition and improvisation" (Webster, 2002, p. 2). This means that in the past 20 years we should have gained a better understanding of how creative processes work in music education.

Over these last decades, theories of creativity have developed from frameworks where creativity is understood as mainly an individual, internal cognitive process, to theories viewing creativity as socially constructed, materially and culturally embedded and embodied, and emergent over time. The *aim* of this article is to review these theoretical developments and to connect them to key articles and recent work in the field of music education. This theoretical review will lead to implications and recommendations for future research on creative music education.

2. Defining creativity

Creativity is an elusive concept. However, different definitions of creativity have two core elements in common (see e.g., Baas et al., 2008; Amabile, 1982). First, scholars agree that a crucial element of creativity is *novelty*. An expression or product is considered creative when it has elements beyond what we already know, when it is novel and original, something that has not been thought of before. At the same time, however, there is the criterium of appropriateness. This means that the creative product or expression also needs to 'fit' with a certain field, or needs to be a viable solution to the problem at hand. When we zoom in at the thinking processes that may lead to these kinds of novel and appropriate ideas, products or artistic expressions, two parallel processes are relevant. Divergent thinking refers to the process of coming up with as many different ideas, or alternative problem solutions as possible. Brainstorming' is the typical, more well-known term for this. Convergent thinking is oriented to selection of ideas in order to find the best possible solution to a problem. It involves connecting ideas to prior knowledge and (critically) evaluating ideas (Cropley, 2006). Divergent and convergent are currently known as intertwining and interacting processes.

Webster (2002; 2012) used the concepts of convergent and divergent thinking as the base for his well-known model of creative thinking in music. In this model, he states that creative musical processes start with an intention for a certain outcome, resulting in different types of processes. The intention might be to compose a piece of music, to be per-

formed at a later moment, to perform music of others, or to improvise music on the spot. The core of the model is the individual's thinking process, which consist of an interplay between divergent and convergent thinking. More concretely, creative thinking can be seen as a cycle of preparation (exploring sounds, melodies and chords), working through the initial ideas (revising, editing, and forming new ideas on the basis of the initial ideas), and verification of these ideas through rehearsal and polishing. Depending on the nature of the process, time away (for instance, taking a step back from a halfway finished composition) can also be part of the creative process. Empirical research on young music students (Burnard & Younker, 2004) as well as on advanced music students and beginning professional composers (Biassutti & Concinna, 2021), has shown that the steps in this model do not always neatly happen in this exact order, but that these real-life creative musical processes consist of going back and forth between these different phases in ways that differ between students.

3. Creativity as socially constructed

Creativity, especially when viewed at the 'genius level' of truly innovative discoveries or artworks, has been viewed historically first as either a fixed trait or an individual process, perhaps with the compelling view of an individual composer, artist or scientist in mind working day and night at the writing table or in the laboratorium (Glaveanu, 2012). Increasingly, however, creativity theories recognized creativity as a social process. When we look at the development of creativity theories, we see a steady shift from the recognition of social influences *on* creativity, to social processes *being at the core* of creative thinking and acting (Sawyer & DeZutter, 2009; Glaveanu, 2012). This seemingly small but crucial shift requires some conceptual clarification. Already in the early days of creativity research (referring here to the 1950s and 1960s), scholars recognized that the 'outside world' impacts on creativity. Rhodes (1961) in his "4-p" model of creativity summarized the research lines on the impact of the social environment on creativity, under the term 'press'. In these early days of creativity research, there was the recognition that the individual who is creating is impacted by for instance teachers, colleagues, or peers. However, this is still seen as an 'outside influence', impacting (in a unidirectional way: the teacher influences the student but not the other way around) on the individual creating. Indeed, also Websters' model recognized social or cultural factors, such as peer influence or task as so-called 'enabling conditions' for the creative thinking process (Webster, 2002).

A fundamentally different way of conceptualizing creativity is moving beyond social factors impacting on the (in principle individual) creative process and seeing creativity as an inherently social process. Csikszentmihalyi's systems model (1988) does exactly that. The core of the systems theory is that creativity does not occur in isolation in individual minds. This is true even if someone is engaged in a creative process by him or herself. The systems model explains how individual creative processes are on the one hand constrained and enabled by the direct environment (such as the person one is brainstorming with, or a teacher who makes a positive comment about a drawing of a student). On the other hand, these social processes also emerge in interaction between the person and the environment. The systems model also incorporates 'the environment' on different levels of organization. The direct environment of the individual (e.g., parents, teachers, peers, but also music critics and museum directors) constitute the field. They have a role in evaluating the creative product (finished or 'in-the-making'). These evaluations play a role in determining which creative ideas or products are valued, and therefore also shape the future field and the culture at large: the persons in the field act as gatekeepers. It is important to note that the field can also be, and is actually likely to be internalized, by the person. Even if there are no others present, one is aware (through education and upbringing in the field) what is likely to be considered acceptable, good or innovative. Most creative professionals will be familiar with this 'internal critic', which is basically an anticipation on the reactions of relevant others in the field. The field thus acts as a gatekeeper to the culture and determines which creative ideas are valued and become a part of the culture on the longer term (Csikszentmihaly, 1988). It is important to note that these layers (individual, field, culture) can be seen as nested in the sense that the influence does not only go from field to individual, but also the other way around.

In the field of musical creativity, there has been considerable work done in capturing especially social collaborative processes, such as group improvisation, and joint musical composition. Focusing specifically on music education, Miell and MacDonald (2000) looked at how young children work together as they engage in making a musical composition

together. While studying the interactions between peers in detail, they distinguished between transactive turns in their interactions (where a child builds upon what has been previously said or done before, either by themselves or by their peer) and non-transactive turns. They found that dyads of students who were also friends had more of these transactive turns in their communicative process, and that transactive turns were associated with a higher level of quality in the eventual composition that the dyads made. In a recent systematic literature review, Barett et al. (2021) found that most literature on creative collaborations in music focused on higher music education and professional musicians rather than communities and elementary education. They also found that the mechanisms of creative collaborative learning are investigated but only rarely the link between collaborative processes and creative outcomes (such as in the study of MacDonald and Miell, 2000).

4. Creativity as materially and culturally embedded, enacted, and embodied

Thus far we discussed creativity as being socially situated, but this is far from the whole story. Creativity is not only socially situated but also situated in the material and cultural environment. In the case of musical creativity in education, students come to class with more or less knowledge and (listening and performing) experience in and of music (Kratus, 2017). Some teachers might ask the students to compose or improvise with a musical instrument, sometimes the task is to compose a piece of music in a digital environment. Some schools have many different instruments that can be used by students (and a proficient teacher who knows what can be done with these instruments) while some schools are ill-equipped for music in general and musical creativity in particular. Gibsons (1977) theory of affordances recognizes that all kinds of cognitive processes (such as creativity) do not 'reside' in individual minds but are enacted in interaction with the physical environment. Affordances are 'action possibilities' of the physical environment. These are not characteristics of the environment either, but arise in interaction between the person and the environment. For instance, a rock has the possibility to be thrown, but only for a species who has a body strong enough to lift a rock, and arms long enough to throw it. Applied to music education a musical instrument such as a guitar or a violin has many affordances for musical creativity for a skilled musician, but the affordances for a beginner are much more limited. Withagen et al. (2012) add an important element to the definition of Gibson (1977). They state that in principle, physical objects have infinite action possibilities. Yet, people only 'use' a limited number of these affordances. Action possibilities differ, thus in the extent to which they are inviting certain actions. A chair for instance can be used for an infinite number of things, but most people use it for sitting.

What does this mean for musical creativity? Glaveanu (2012) translated the affordance concept to the field of creativity. In his affordance framework for creativity theory and research, the most 'inviting' or obvious affordances can be summarized as 'what is usually done' and consist of a combination of the affordances that are in principle possible (what one can do), normativity (one should do) and intentionality (what one would do). Applied to music performance, the bow and arm movements of a cellist are constrained by a) what is physically possible; b) the affordances of the instrument (i.e. the need to keep the bow horizontal) and c) the norms that exist for performing composed music from a certain time period (how one should play Brahms) (Winold & Thelen, 1994). Since creativity is about novel insights, ideas or uses, creativity is what happens around the edges of the landscape of well-known affordances, moving beyond 'what is usually done' in a context, in interaction with some given physical material. For instance, young children who are not yet sensitive to adult norms might engage in emergent creativity by using 'unexploited affordances'. A classic example is a child drawing on a white wall. White walls afford drawing, the drawing is intentional, but the child is not yet aware of the adult norm that 'walls are not meant to be drawn on'.

In research on musical creativity, the (educational) affordances of musical composition software have been well investigated (Özenç-Ira, 2023). Some key findings are that the software affords collaboration between students, because students have a joint 'canvas' they can work on together, and that can be saved to be worked on at a later time. Also, the libraries of different rhythms and instruments in the software offers students the possibility to make music that is culturally relevant to them (Gall & Breeze, 2005; Webster, 2012). Music composition software also affords possible collaboration between students of different levels of musical

competency, because playing a musical instrument is no longer a requirement for engaging in musical composition. Bell (2015) however, also notes that musical composition software acts as a constraint on musical composition; a physical instrument has affordances that software (and a physical computer) do not.

Bremmer and Nijs (2020) pay specific attention to music making as an embodied practice, that is: to the affordances of the human body in (creative) musical interactions. This means that meaning making in music education is not limited to what teachers say to their students; the bodily engagement of the teacher (gesturing, modeling, etc.) in music lessons affords many possibilities for instruction. The embodied interaction between teacher, student, instruments provides different possibilities for creative music making. For instance, the teacher can use gesturing and modeling to point the student into different possibilities of interacting with an instrument or with musical composition software that the student might not have noticed by themselves. In our own study, for instance, we saw the teacher demonstrating possibilities of musical composition software unknown to the student, in response to the student talking about a broad musical new idea she had (Kupers & Van Dijk, 2020).

5. Conclusions and future directions

In this brief overview article, I unpacked the definition of creativity as a socially constructed, materially and culturally embedded and embodied process unfolding over time, and connected each of the elements of this definition to key works in the field on musical creativity. In sum, we can conclude that musical creativity is not something music students are born with, but rather an acquired skill that emerges out of an interaction between the student, their teacher(s), peers, and musical 'material' such as musical instruments or composition software.

The development of children's musical-creative competencies varies tremendously. McPherson (2005) found that of a large group of students who started instrumental music lessons, a substantial group (40%) did not improve or even declined in their ability to improvise on their instrument after three years of music lessons. This underlines the need to zoom in on creative processes during the lessons – both in general as well as in instrumental music education. How do teachers and students interact, how do they engage in improvisation or composition and what kind of processes lead to a beneficial overall musical development of students? Research can help us clarify which kinds of tasks, and what kinds of creative processes lead to high quality creative outcomes that serve as the 'building blocks' for creative development. That also means we should study creative processes with solid mixed method designs. On the one hand, rich qualitative case descriptions, like the ones that now constitute the majority of the research studies on musical creativity, provide insight in how creativity emerges in interaction between music student, teacher, peers, and task. On the other hand, larg-scale research is needed to systematically look at how different variations of tasks can elicit more or less productive creative interactions, or how teachers might best be coached to guide students' creative processes, which require more interindividual comparisons and more intervention studies.

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Kupers 2024
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b-em (15), S. 1–6

ISSN: 2190-317
DOI: 10.62563/bem.v2024237