Creative Thinking in Music: Student-Centered Strategies for Implementing Exploration Into the Music Classroom

Roger G. Coss

Abstract
Research suggests that exploratory experiences in the music classroom are a crucial developmental stage as students begin making the kinds of decisions required of them during composition and improvisation. The aims of this article are to (1) articulate a rationale for exploratory learning experiences in the music classroom and (2) outline practical strategies for using exploration as a foundation for compositional and improvisational development. Drawing on the research of Peter Webster, John Kratus, and Maud Hickey, this article outlines group and individual strategies for setting up a listening walk, introducing students to invented notation, scaffolding exploratory learning experiences in the classroom, and provides resources for extending these lessons into composition and improvisation instruction. Embedding exploration into the music classroom empowers students to develop the mental flexibility, disposition, and skills needed for improvising and composing.

Keywords
composition, creative thinking, exploration, music education, improvisation

Introduction
Over the past 25 years, music educators have witnessed a heightened focus on student-centered approaches to teaching and learning where musical growth occurs through creative experiences (Hickey & Webster, 2001; Strand, 2017). As music educators, our profession’s interest in constructivist notions of how learning occurs displaces the teacher as sole harbinger of official knowledge and elevates the students’ control over the musical decision making in the classroom (Scott, 2006, 2011; Webster, 2016). Consider as an example the 2014 National Coalition for Core Arts Standards (NCCAS), a broad collaborative effort to revise the 1994 National Standards for Music Education toward developing students’ creative thinking through composition and improvisation (NCCAS, 2014; Shuler, Norgaard, & Blakeslee, 2014). These acts require musicians, whether novice or expert, to make rhythmic, melodic, harmonic, thematic, orchestral, and stylistic decisions that result in new musical ideas and are organized in musically coherent ways (Barrett, 2006; Coss, 2018; Hargreaves, 2012; Norgaard, 2011, 2017; Randles & Sullivan, 2013). Music educators are tasked with preparing students to make the kinds of aesthetic decisions required of them while composing and improvising. However, an important question remains: What kinds of experiences are necessary for students as they begin to make musical decisions in the form of composition or improvisation?

In this article, I argue that open-ended, exploratory learning experiences offer music educators a developmentally appropriate tool for helping students take ownership of the creative decision making in the music classroom. As one of my teaching mentors has argued, “It’s not what we do as teachers that matters most, but rather what we are able to get students to do” (Nelson, 2017, p. 14). Exploration empowers students to develop the mental flexibility, disposition, and skills needed for composing and improvising. The aims of this article are to (1) articulate a rationale for exploratory learning experiences in the music classroom and (2) outline practical strategies for using exploration as a foundation for compositional and improvisational development.

Creative Thinking Process
Peter Webster conceptualizes creativity as a process driven by creative thinking (Webster, 1990). Adopting Maud

1Great Valley Academy, Modesto, CA, USA

Corresponding Author:
Roger G. Coss, Great Valley Academy, 5901 Sisk Road, Modesto, CA 95356, USA.
Email: rcoss15@comcast.net
Hickey’s definition, creative thinking is understood here as “the ability to think imaginatively (creatively) in sound and to manipulate and create new and interesting musical ideas” (Hickey, 2012, p. 8). The creative thinking process begins with an intention for a musical product, goes through a four-stage thinking process, and ends with a product such as a composition, improvisational performance, or musical analysis such as listening or writing. Webster (2002) has since updated his model to include the following four stages that drive the creative thinking process:

- **Preparation** (imagining, exploring, and planning new musical ideas and problems)
- **Time away** (subconsciously processing ideas)
- **Working through** (revising, editing, and forming of more new ideas)
- **Verification** (final polishing stage)

As displayed in Figure 1, students move through these stages in a nonlinear fashion and frequently revisit previous stages as needed (Cropley & Cropley, 2010). Students move through these stages using both divergent thinking (multidirectional development of many ideas) and convergent thinking (developing single answers to specific problems). In Webster’s (1990) model, divergent thinking requires of students a particular set of musical skills such as extensive time internally imagining sound in meaningful ways, a wide and flexible range of musical expressiveness (e.g., dynamics, tempo, pitch), and/or a disposition to think of original or unusual ideas. It is in affording students the resources, time, and support to explore new musical ideas and creative problems—the central aim of the “preparation” stage of Webster’s creative thinking model—that this article is primarily focused on.

**Exploration**

Literature on compositional and improvisational development supports the role of exploration as students imagine and plan new musical ideas—the initial stage in Webster’s (2002) creative thinking process. Drawing from an analysis of novice and expert improvisers, John Kratus (1995) has proposed a developmental model that argued for exploration as a necessary pre-improvisational step. Research into the thinking processes of expert-level improvisers suggest that they use various strategies for generating new musical ideas such as drawing from a previously memorized idea bank, shaping and modifying these ideas with a melodic or harmonic focus, and revisiting musical ideas played earlier during a performance (Norgaard, 2011). However, Kratus argued that “exploration lacks the purposefulness and structural constraints of improvisation” (Kratus, 1995, pp. 30–31). Students learning to compose or improvise music may benefit from exploring the spatial and timbral qualities of instruments and sounds, rather than a specific focus on a musical product that is organized in a coherent manner.

Take as an example Maud Hickey’s (2009) examination of the ways in which improvisation has often been taught in schools. Operating through a more rigid, teacher-directed approach, traditional approaches to improvisational development are often characterized by teaching specific skills in a highly controlled learning environment (Hickey, 2009). Published materials on jazz improvisation pedagogy tend to emphasize melodic embellishment and fitting stylistically appropriate melodic patterns over common harmonic progressions (e.g., ii–V–I) (Heil, 2017; Watson, 2010). However, Hickey (2009) argued, “methodologies that emphasize tonally centered, rhythmically simple, short and uncontextualized patterns are more likely to hamper the growth of creative musical thinkers than to elicit true creative thought” (p. 286). Rather than starting with a codified set of prescribed skills to be used when improvising, a more developmentally appropriate approach...
Coss

for educators would be to develop students’ disposition toward discovery and creating new musical ideas.

Learning through exploration is similar to the way in which children learn to speak. Children develop initial facility in language through the exposure to and imitation of sounds, words, and speech (Brandt, Gebrian, & Slevc, 2012). Like language development, learning is often an implicit, open-ended experience that is driven by the learner and their interactions with their environment (Brandt et al., 2012; Perruchet & Pacton, 2006; Romberg & Saffran, 2010). The child is making the decisions during the learning process.

Drawing from the approaches described above, as well as from literature on improvisational and compositional development, a cursory list of characteristics of exploratory learning is provided below. These characteristics are displayed in Figure 2.

- Open-ended learning objectives (Rajan, 2013).
- Problem-based questions that lead students to an array of answers and further questions (Burnard & Younker, 2004).
- Student choice in the sounds and instruments they are exploring (Moorhead & Pond, 1942).
- Safe and supportive learning environments where students can succeed or fail without penalty when exploring their musical ideas (Stringham, 2016).
- Extensive time to explore without rushing students (Volz, 2005).
- Teacher guidance that emphasizes exploring rather than organizing the sensory qualities of sounds encountered (Kratus, 1995).

Ultimately, musical exploration may aid students in developing the mental flexibility and aesthetic decision-making skills needed for improvising and composing music. Exploration situates students in environments where they are given the freedom to discover and interact with the sensory qualities of their environments. Using exploratory learning experiences, classroom instruction is primarily situated within the preparation stage of Webster’s (2002) creative thinking process.

Setting Up Classroom Instruction

Creating new music, whether through composing (creating and revising over longer periods of time) or improvising (spontaneously creating in the moment), requires aesthetic decisions. Furthermore, students need to practice aesthetic decision making repeatedly with the guidance of expert musicians (Hickey & Webster, 2001). In describing how to guide students through the compositional and improvisational process, Robinson, Bell, and Pogonowski (2011) argued that “the advantage of brainstorming musical ideas in a comfortable large-group setting is that it flows easily into the next step of students working on their own” (p. 54). The progression from large-groups toward individual work provides students with mental models of how the compositional or improvisational process works, as well as motivates them to work toward individual choice. The strategies described below are best introduced sequentially to students. They are presented first in large-group settings and progress by adding in student choice and freedom to make their own musical and creative decisions (see Figure 3). They serve as precompositional and preimprovisational activities that calibrate students’ creative musical thinking, highlight the uniqueness of each student through embedding choice and freedom, and allow students to be guided by their own individual aesthetic interests.

The NCCAS are organized through common anchors found across all included arts disciplines and subsequent grade levels. These strategies are aligned with the first two NCCAS common anchors and were developed and refined in my own teaching practice as a K–8 music educator (NCCAS, 2014):
General Music Today 00(0)

1. Imagine: Generate musical ideas for various purposes and contexts (Common Anchor 1).

2. Plan and make: Select and develop musical ideas for defined purposes and contexts (Common Anchor 2).

**Strategies for Exploration**

**Lesson 1: Listening Walk**

The first lesson my students participate in is a listening walk using the book, *The Listening Walk* by Paul Showers (1993), and serves as a preparatory lesson for the NCCAS Common Anchor 1: “Generate musical ideas for various purposes and contexts” (NCCAS, 2014). *The Listening Walk* book tells the story of a young girl who goes on a listening walk with her father and dog, Major. As they walk down the street, she describes in detail the various sounds she hears along the way such as her dog’s toenails, sprinklers, cars, basketballs, and so on. After the walk, she challenges the reader in stating, “You do not even have to take a walk to hear sounds. There are sounds everywhere all the time. All you have to do is keep still and listen to them.” Younger students often struggle with thinking conceptually about sound but can often more easily grasp the tangible, visceral qualities of chirping birds, scuffling feet, or creaking doors.

The ability to imagine new and various sounds or ideas, remember and recall them over a period of time, and use these sounds through listening, composing, performing, or improvising is at the core of the creative thinking process—what Hickey and Webster (2001) call “thinking in sound” (p. 21). *The Listening Walk* may help calibrate students’ ears to notice and explore the timbral and sensory qualities of sounds they already hear on a regular basis—the first step in Kratus’ (1995) developmental model.

In a single class session, students read or listen to *The Listening Walk* and then go on an actual listening walk. I set up the following expectations: they may not talk, only listen; when they hear a sound, they can “grab” the sound with their hand and place it in their imaginary listening bag; and they walk in a single-file line following myself around the campus for about 15 minutes. When we arrive back at the classroom, we list all the sounds we heard on our walk. These often include footsteps, chirping birds, lawnmowers, basketballs, cars driving by, or children laughing in the distance. We even compare sounds that other classes heard on their listening walk at different times of the day. Participating in a listening walk is a very structured group activity with the purpose of getting students attuned to the sounds around them. This lesson aligns with the preparation stage of Webster’s creative thinking process (i.e., imagining, exploring, planning).

---

**Figure 3. Strategies for exploration at a glance.**

*Note. NCCAS = National Coalition for Core Arts Standards.*
Lesson 2: Doodles

The creative thinking process celebrates divergent thinking as essential to making aesthetic decisions. I typically highlight interesting or unique ways to notate these sounds through their use of shapes, lines, or even colors. My purpose is to challenge students to imagine and use original possibilities for representing sounds—a great way for them to experience divergent thinking. Doodles is a great large-group lesson to follow a listening walk as it affords students opportunities to practice creating invented notations to the sounds they hear. This lesson directly addresses the NCCAS (2014) Common Anchor 2: “Select and develop musical ideas for defined purposes and contexts.” Furthermore, the language across the PK-8 standards in Anchor 2 articulate organizing “standard and/or iconic notation” (MU:Cr2.1PKb-8b) as part of the creative decision-making process (NCCAS, 2014).

Following our discussion of the sounds we encountered on our listening walk, I ask them: How do you write these sounds down without using words or letters? Introducing this question sets up a creative problem for students to further explore. While the ability to read and write standard music notation is an important aim of a well-rounded music education, students should be given the opportunity to create their own form(s) of music notation. “Music notation is not music,” explains Hickey (2012), “Music is sound, and notation provides a means for representing that sound, mostly for the purpose of re-creation by others” (p. 21). Figure 4 provides two examples of students’ invented notations created in my classroom.

Students are positioned in a circle at the center of the classroom with dry-erase boards and markers. I proceed to play a variety of sounds, melodies, and aural textures from instruments found the classroom or sounds bites from recordings. The more varied, memorable, and entertaining the sounds are, then the more engagement you will get from students. I give them about 30 seconds to a minute to silently figure out how to write down the sound they are hearing. They hold up their dry-erase boards so the entire class can see their notations. We then compare how each student chose to represent that sound. Furthermore, the lessons can be flipped: Students can create their own notation first, to which I respond by trying to play them on an instrument of my choice. Invented notation is a way to initially get students to engage their creative musical thinking in a way that makes sense to them.

By starting as a whole-group activity, Doodles aligns with the creative music strategy outlined by Robinson et al. (2011) and gives students who struggle with the concept of invented notation a chance to see how others write down the same sound. Students will want to rush into the exploratory stage discussed below rather quickly. Be sure to give them plenty of time to develop a quality mental model of what invented notation looks like before moving on.

Lesson 3: Exploration

The first step to exploration is just letting students explore. No assignments or objectives are required at first. In this open-ended learning environment, you can sit back and watch their imagination guide the learning process. As described by Kratus (1995), expecting of students to develop coherent musical ideas while exploring is not the initial aim. Learning occurs as the students interact with
their musical environments. While time spent on exploration can vary, I have found it most effective to build in more exploration time for younger students. Time to explore instruments, while valuable to students no matter their age or level of musical experience, specifically addresses the preK and kindergarten NCCAS (2014) Common Anchor 1 standards: to “explore and experience” music (MU:Cr1.1PKa-Ka).

Transitioning from group, teacher-led activities toward an exploratory environment may be initially difficult for teachers. While exploration involves absolving much control and allowing the students to lead themselves, it is not without clear expectations on both the students’ and teachers’ part. Strategies that might be helpful in operationalizing an exploratory environment include easy access to a wide variety of instruments; a large, open space for students to take instruments and experiment with; clear behavior expectations for themselves, their classmates, and the instruments; and incorporating frequent class-wide “ear breaks” when it gets too loud.

I then begin to gradually incorporate open-ended objectives into their exploration sessions. Hickey (2009) argued for a nurturing approach that begins with open-ended, discovery-based learning and gradually incorporates skill building over time. While originally intended with improvisational development specifically in mind, I have found that a discovery-based approach is an appropriate way to engage students into the compositional process as well. I often tell my students that they are scientists or archeologists. I ask them: What do scientists do? Responses differ, but typically point toward some sort of exploration or data collection. I tell them that they will be collecting “musical data.”

Students are given the handout shown in Figure 5, a clipboard, and a few markers. They go around the classroom collecting the sounds from whatever instruments they choose as they play them. A portfolio routine is incorporated by having them save these sounds/notations in a folder for use in later compositions. One variation involves guiding their exploration sessions through the various elements of music. Students then begin to develop the language and conceptual tools to begin organizing their sounds into compositions. The handout shown in Figure 5, originally developed by Hickey (2012), tasks students with categorizing the sounds they hear as high/low, loud/soft, fast/slow, and short/long, followed by a brief self-evaluation.

Assessment

These exploration lessons are ideal opportunities to embed peer-assessment into students’ learning experiences. Once students have a collection of sounds written using their
own invented notation, they can walk around, find a classmate, and ask them to “perform” their sounds they wrote down. They can then play it how they originally intended for comparison. The peer-assessment process not only gives each student an opportunity to assess each other’s notations but also helps them to develop the skill of self-assessment. After a few sessions of peer-assessment, I challenge students to imagine how their peers might interpret their notations as a form of self-assessment.

**Transitioning Toward Composition and Improvisation**

The strategies detailed in this article are intended to aid students as they transition into actual composing and/or improvising. While a detailed discussion of what composition and improvisation look like in the classroom is beyond the scope of this article, this is the next logical step. A few initial steps may be taken to successfully transition from exploration into composing and improvising. After a few exploration sessions, I begin preceding each class with a short video of a composition or improvisation—either one I have found on YouTube or of exemplary performances from another class or classes in years past. Second, I steadily incorporate performances at the end of each class. I typically start with one performance each class and gradually increase them as students familiarize themselves with these processes. As students regularly watch quality composition examples, refine their exploratory learning time through peer and
self-assessment, and get the opportunity to perform their notations for the class, their performances will naturally develop into compositions and improvisations.

Once these exploratory learning experiences are embedded into the music curriculum, they are meant for the students to revisit on a regular basis, even be made the central focus of the curriculum. Key characteristics of a quality music education program for younger learners are (1) open-ended experiences emphasizing process over product and (2) music activities that are frequently repeated over time (Rajan, 2013). I regularly incorporate exploration into my curricular planning as a way to reach students who struggle with composing or improvising, as well as to build in ways for students to go above and beyond in their own learning. A cursory list of articles is provided in Figure 6 that provides resources for incorporating composition and improvisation into the music classroom.

**Conclusion**

The musical decisions we make as educators—whether through rehearsing our bands to play expressive pieces of music or getting our students to play songs with tonal and rhythmic perfection—matters very little if we do not help them develop the dispositions and skills to make creative decisions themselves. As students use, revisit, and struggle through Webster’s creative thinking process, affording them time and space to explore sounds within their immediate environment may aid them in developing the requisite skills for composition and improvisation. The strategies outlined in this article may also help music educators conceptualize their own practice through the ultimate aim of helping students develop their creative musical thinking.

**Declaration of Conflicting Interests**

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Funding**

The author received no financial support for the research, authorship, and/or publication of this article.

**References**


**Author Biography**

**Roger G. Coss** is a K-8 general music and band teacher at Great Valley Academy (Modesto, CA). His research interests include music education, jazz improvisation, creativity, and outdoor education.