by Peter R. Webster

Creative Thinking in Music, Twenty-Five Years On

Abstract: Since the publication of the May 1990 *Music Educators Journal* Special Focus Issue on Creativity, the profession finds itself in a new and more challenging time. Our field is changing before our eyes as new ideas about the music we teach, the people who are taught, and the way music as art is delivered and consumed affect our pedagogy. In all of this, the dispositions behind the work written in 1990 remain fresh even today. This article revisits the content of the 1990 issue with an eye toward the writings from research and practice that have been done since then and that have extended and refined our understanding of this topic, particularly as it relates to composition in the schools. The conceptual frames of sociocultural approaches, constructivism, and model building are stressed, as are several new dimensions of curriculum that feature teaching practice and the study of product and process with new thinking about assessment and technology. The article asks us to consider changes in teacher education at the college level as well as in our pedagogies for K–12.

Keywords: composition, creative thinking, pedagogy, research, teaching practice, technology

How has our view of creativity in music learning changed over the past two and a half decades? Here's one perspective.

> "The real essence of art turned out to be not something high up and far off—it was right inside my ordinary daily self."
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> —Shinichi Suzuki, *Nurtured by Love*, 2nd ed., 1983, p. 83

> "Every society has its protectors of status quo and its fraternities of the indifferent who are notorious for sleeping through revolutions. Today, our very survival depends on our ability to stay awake, to adjust to new ideas, to remain vigilant and to face the challenge of change."
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> —Martin Luther King Jr., Spring 1968

A few summers ago, I visited the Portland Museum of Art in Maine to view a curated, special exhibit on the paintings of Richard Estes. Estes is considered by many to be the foremost exponent of photorealism. He uses photographs of venues like New York City, London, Tokyo, and the Maine coast to paint vividly realistic works that are inspired by the photographs. His use of light, reflected images, and attention to the most minute of detail is rewarding for the careful viewer.[1] On a wall next to the exhibit, I encountered the following quotation from this American painter:

> I think that the popular concept of an artist is a person who has this great passion and enthusiasm and super emotion. He just throws himself in to this great masterpiece and collapses from exhaustion when it's finished. It's really not that way at all. Usually it's a pretty calculated, sustained, and slow process by which you develop something. The effect can be one of spontaneity, but the real

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test is to plan something and be able to carry it out to the very end.[2]

As I returned to the exhibit to gaze at still another stunning painting of a city street scene, I realized how profoundly meaningful this statement was, not only for our understanding of creative work in painting and photography but also for music. It is tempting to think that creativeness[3] occurs in a flash of insight and that all one has to do is execute it. In fact, the idea that "execution generally doesn't require creativity" is a common myth exposed in Keith Sawyer's excellent account of modern scholarship on creativeness.[4] Creative work is the result of years of practice, very hard work, personal experiences with others, and social interactions commonly associated with the domain of music.

It also might be convenient to think of music compositional ability, for example, as something for only those "special" students who gravitate toward composing partly because of private lessons and participation in our ensembles; many are tempted to think that "talented" students will be naturally identified and encouraged by other specialists outside traditional music education and that such students are not really the point of our daily work as general music or performance-based educators. But we know better. We know from countless writings in our field by practitioners and researchers alike[5] that all children are not only capable of music composition but that they thrive on it as a way to deeply enhance their musical understanding. Creative achievement for children and adults is driven certainly by personal characteristics such as innate talent and personality but more importantly by continued opportunities to compose, improvise, perform music of others with creative intention, and listen to music creatively. Of critical importance are the creative music experiences that happen regularly in schools with the help of skilled and creative music educators who engage their students in comprehensive music experiences daily.[6] This is reinforced by our profession's re-formation of the National Core Arts Standards that celebrate creative work at the very center of artistic processes:

> The fundamental creative practices of imagination, investigation, construction, and reflection, which are essential in the arts but equally important for science and mathematics learning, are cognitive processes by which students not only learn within an individual discipline but also transfer their knowledge, skill, and habits to other contexts and settings. Creative practices are essential for teaching and learning the arts, and are therefore included in this document to help arts teachers identify methods to implement the core arts standards.[7]

Ideas such as these fueled the passion behind the writings in the May 1990 *Music Educators Journal* Special Focus Issue[8] on Creative Thinking in Music, and it is well worth revisiting today. The articles in this current issue of *MEJ* that focus on the compositional experience—some twenty-five years later—are an important reminder of the vital nature of this topic.

Challenging and Changing Times

But why focus on creativeness and composition specifically now? We have so many other issues to face. Certainly our profession finds itself in a new and perhaps more challenging time than three decades ago. The usual problems with proper funding and administrative support for arts in education remain, but other factors are in play. In many ways, the profession is changing before our eyes. New notions about *what* music we teach alongside our wonderful traditional canon of Western art music is causing continual debate. Also of concern are issues surrounding *who* we teach, especially at the secondary level as we strive to provide music experiences for those not participating in traditional performance ensembles. Certainly *how* we teach is under constant discussion, as experiments with online learning, alternative learning devices such as tablets and smartphones, and more experimental learning strategies are actively considered as changes in pedagogy.

For some, these all may be signs of weakness and chaos, but another way to view these fundamental challenges and changes is that they are signs of maturity. We are responding actively to our social context by considering a broader and a more nuanced world of music that more honestly reflects the sonic experience of our young learners. We are also responding more democratically to the variety of students before us, and we are attempting to harness the powerful affordances of technological change that affect learning in and outside of the school environment. The historians of the future may look back at this time not as unfocused and chaotic but rather as the beginning of a fundamentally new and exciting era for music teaching and learning.

The answer to why devote time to composition in the schools and to other musical engagements that involve creative thinking in sound is that these experiences provide a powerful platform for addressing these challenges in our profession. By devoting time and energy to the musical imaginations of students, we can be (1) more inclusive of musical styles and genres—teaching music in a more authentic way, (2) more likely to reach a greater number of our students and tap into otherwise hidden talents and skills, (3) more effective in our use of technology and creative teaching strategies, and (4) more centrally aligned with our core values and standards.

The 1990 Special Focus Issue

Considering each article in the 1990 special focus issue, I recalled that the thinking behind the order and choice of subjects was designed around several dimensions of strong teaching practice. The first two authors[9] in the special issue sought to create a conceptual framework about creative thinking both within music teaching and outside the field. A case was made that the term *creativity* was a difficult one and often misunderstood. Interestingly, some recent contemporary writers[10] have also suggested that the term *musical creativity* might best be abandoned in favor of *imagination* or *invention*. The ability of children to imagine in sound was valued, and a distinction between more

convergent (linear/right answer) versus divergent (speculative/multiple-answer) thinking was presented. These authors proposed that a combination of convergent and divergent thinking is informed by personal enabling skills and social enabling conditions. Each author stressed the importance of product as necessary for creativeness to be manifest and that evaluation of these products seemed more doable than one might have thought. Risk taking and willingness to fail were cited as critical for creativeness to occur, and overcoming fear of failure was deemed essential both for teachers and students alike.

The next article addressed the formulation of carefully crafted goals and objectives for creative pedagogy.[11] Objectives formed around the perspective of person, product, and process were profiled using the late Stanford arts education scholar Elliot Eisner's notion of "expressive" objectives[12]—objectives based on an aspect of learning or outcome but not on the specific nature of the outcome itself. For example, a process objective might be "Small groups of students will compose a piece that includes imitation between two different timbres." Here students are given a structure or a scaffold to give them direction, but the exact result is open for a flexible solution.

The article that followed listed strategies for fostering creative thinking in early childhood through elementary and secondary levels.[13] A number of important strategies were featured, including setting aside time for individual exploration, doing short improvisations within larger forms, creating covers of familiar songs, exploring environmental sounds in order to create a composition that explores the musical elements, and using instruments from other cultures. This led logically to the next article that focused on the critical importance of cross-cultural perspectives.[14] Music of other cultures, particularly in India, Iran, China, and West Africa, were shown to rely heavily on improvisation within established boundaries. The importance of understanding the particular musical language of these cultures was stressed as the basis for creative work in that culture. Readers were reminded of the powerful ways other cultures consider improvisation as a natural part of music learning in honoring tradition but allowing for personal expression.

The final article in the series featured assessment of musical thinking using technological resources and a plan based on the Harvard Project Zero Arts Propel model of production, reflection, and perception.[15] Various domain projects were described that encouraged middle school students in the Pittsburgh schools to compose with the aid of a computer-based notation program. Long-term engagements with significant musical problems, self-paced work, open-ended learning situations, and problems defined and framed by students themselves with the guidance of teachers were processes that were featured. Judgments about the final products were stressed, as was the processes of revision, which gave students feelings of empowerment.

Creative Thinking in Music Today

Many of the important themes from 1990 persist today but have been enhanced and extended in important ways by subsequent research and practical writings. What follows is a brief sample[16] of some of the more important work from research and practice done in recent years. Each has important implications for how we structure our music teaching today and are offered as exemplars for consideration. Practitioners will find many ideas for practice in each of the sample writings. They are organized around similar dimensions of strong teaching practice (conceptual framework, curriculum/assessment, and technology) that were the organizers in the 1990 special focus issue.

Conceptual Framework

Sociocultural Approach

Much of the writing in the 1990 articles was based on factors related to the individual child and the musical products they were creating. In the past decade, the scholarship on creative thinking in music has been influenced heavily by a more sociocultural orientation. This perspective allows for more than just the consideration of how students deal with the sonic qualities of music cast against a canonic frame. Non-sonic considerations such as gender, student and teacher identities, meaning-making as it relates to social context, aspects of student collaboration, and youth culture[17] have revealed new insights. Also of interest has been a more inclusive view of creative work in more popular and non-Western music cultures. These sociocultural considerations of creative work are endorsed by many contemporary scholars as more authentic ways to study creativity as these approaches offer more real world–based explanations for how creativeness works.[18]

For example, in Cambridge University professor Pamela Burnard's book[19] on musical "creativities" in practice, she profiled nineteen musicians from Britain, Europe, and Australia. Musicians—some composers, some performers, some recording engineers—were drawn from various fields (mostly popular genres) in music and were presented as different artists functioning in the complex arena of contemporary music. In doing so, Burnard celebrates different sociocultural contexts. In a similar way, the work of Teachers College associate professor Lori Custodero[20] provided perspective on early childhood and music-making related to the notion of "flow" as defined by psychologist Mihaly Csikszentmihalyi.[21] Referenced here are concepts such as intrinsic motivation, embodied meaning, feelings of self-worth, control over creative work, and the role of imitation as a precursor to creativeness.

Certainly such work on creativeness using a sociocultural context is critical and makes particularly good sense for contemporary teaching and learning, but the study of individuals and their products and processes cannot be abandoned. A leading expert on creativity, Keith Sawyer has argued that we need both approaches and to consider these in interdisciplinary ways across fields and domains.[22]

Constructivist Philosophy

As a guiding philosophy for encouraging creative thinking in music, constructionist

approaches tend to celebrate student-centered learning and favor the social and collaborative nature of education. Constructivism as understood and practiced is a complicated topic, particularly in music teaching and learning. It is less a theory of teaching and more a way to think about how learning occurs and how knowledge is acquired:

> Although constructivism is not a theory of teaching, it suggests taking a radically different approach to instruction from that used in most schools. Teachers who base their practice on constructivism reject the notions that meaning can be passed on to learners via symbols or transmission, that learners can incorporate exact copies of teachers' understanding for their own use, that whole concepts can be broken down into discrete sub-skills, and that concepts can be taught out of context. In contrast, a constructivist view of learning suggests an approach to teaching that gives learners the opportunity for concrete, contextually meaningful experience through which they can search for patterns, raise their own questions, and construct their own models, concepts, and strategies. The classroom is seen as a mini-society, a community of learners engaged in activity, discourse, and reflection.[23]

Certainly creative learning can be and often is encouraged by more directed, teacher-centered approaches; however, those that see creative work as best taught by allowing students to have some degree of control find the idea of allowing children to "construct" their understanding of music by experimenting with sound with less teacher intervention to be most appealing.[24] Jacqueline Wiggins has written about this for composition and music learning, especially in terms of general music education.[25] Those interested in a philosophical rationale for including more student-centered, socially rich creative activities in music classrooms, studios, and rehearsal halls have found this epistemological position a strong conceptual base.[26]

Model Building

A model of creative thinking across multiple musical experiences was presented in the May 1990 *Music Educators Journal*[27] and has continued to be refined in recent years. Notably, it has been extended to account for more complete descriptions of both sociocultural and individualist evidence.[28] Refinements have been made also to the core of this model that stress the initial gestures of creative thinking, the revision process, and final stages of product creation.[29]

Other models and theories have joined this one to offer more complete explanations of compositional thinking in particular. For example, Norwegian music professor Magne Espeland[30] presented a model for the compositional process that stressed personal and compositional actions. Maud Hickey[31] published a model of compositional work based in part on the work of Amabile in which social and intrinsic motivations were stressed. Hickey has more recently presented a model inspired by the creative writing literature that focuses more completely on the compositional process and role that teachers play.[32] Based on her work with children as a teacher and researcher, Wiggins[33] provided a frame for understanding the creative process for individuals and groups. Of importance in her model is the interplay between teacher and student in the context of culture, curriculum, and the compositional problem.

Curriculum/Assessment—Teaching Process

Recent work on teaching process has yielded a number of rich descriptions of teachers engaging students in creative work, especially in composition. For example, investigator Alexander Koops[34] field-tested a curriculum of composition experiences in middle school band in three phrases and sought confirmation of the feasibility of such an approach in future teaching. Baxter and Santantasio[35] used narratives of a salsa concert and a lesson with a Native American flute performer to help illustrate the concept of "groove." Non-Western ideas of time in music were explored, and a sixth-grade composition project was described as an application of the work. Breeze[36] completed case studies with students between the ages of ten and thirteen composing music under a condition of "proscription"—a kind of teacher-designed scaffolding that allowed for the study of how students stayed within constraints or worked outside of the boundaries. Bolden[37] presented a detailed description of an experienced teacher of composition in a high school setting in Canada. From a sociocultural perspective, work by Major and Cottle[38] explored teacher inquiry as a stimulus for student talk during a composition task. The summary work by Strand[39] of twelve action research studies represented an interesting qualitative content analysis that is informative about teaching practices. Finally, the article by Menard[40] is noteworthy because of her explanation of one teacher that applied a noted conceptual model of creative thinking as a basis for the construction of composition experiences. Each of these works provides a sampling of the varied and colorful accounts of the effectiveness of compositional work and how composition might be integrated into curriculum.

Composition Itself

Product and Processes

Research on the actual processes and products of compositional thinking is another rich area of recent study. Concerned with the process of revision, in 2012, I offered a portrait of a middle school student and his quest for improvement of a solo work for piano.[41] Patricia Riley[42] was concerned more with product analysis in her study of Mexican students' creation of a non-traditionally notated composition using mallet and percussion instruments. She related these products to music that the students listened to regularly. Evan Tobias[43] focused on the role that the production process played in popular music creation. Using a case study methodology, student work in music production in a popular music context was studied in an attempt to inform pedagogy. Viladot, Gómez, and Malagarriga[44] were interested in music composition as the basis for the study of verbal interaction; classroom interaction was the focus here through discourse analysis in hopes of

understanding the learning process. Thibeault and Evoy[45] reported on the creation of a unique ensemble centered on the ukulele. Composition was at the heart of this work, as was the collaborative and participatory learning activities of an ensemble to build instruments, perform, and create projects. Studies such as these demonstrate ways that music learning happens by concentrating on product and process.

Guides to the Pedagogy of Composition

Perhaps the most dramatic curricula development since 1990 comes in the form of full books devoted to compositional teaching pedagogy, particularly from a North American perspective. Michele Kaschub and Janice Smith[46] provided an extensive set of suggestions for practice that are based on solid philosophy and research. Not only are lesson examples provided, but conceptual frameworks are also established, and important issues related to assessment are addressed.

Hickey[47] has published a book with similar impact based on her extensive experience with composition in the schools and in many settings outside of traditional settings. Her chapter on the "issues" in music composition prepares the teacher for considering the questions of standard notation use versus other forms of representation, assessment, ensemble context, and where to begin to teach composition. It is a decidedly musical approach with accent on music elements, music listening, and music exploration—all provided with many examples for practice.

Finally, a book edited by Clint Randles and David Stringham[48] provided exemplars for including composition in traditional band and orchestra programs. Twenty-six lesson plans are accompanied by descriptions of purpose, method, and ways to assess. The lessons are written by established music educators and practicing composers. A similar volume from the same publisher is in preparation that will address choral settings.

These publications mark a major advancement for curriculum development. An important part of each book is the inclusion of assessment approaches. Rubrics, peer-based approaches, consensual assessment, self-assessment, and portfolio suggestions are embedded in these works.

Technology

As might be expected, the advances in technology as a strong support partner for creative thinking research and practice have been breathtaking in the past two decades. The role of music technology in both formal and so-called informal teaching environments[49] has vastly increased in recent years to include "cloud-based" software programs that are inexpensive or free of cost. Devices like smartphones and tablets on which children can make and listen to music are now commonplace. Recent books by Jay Dorfman,[50] William Bauer,[51] and Barbara Freedman[52] each serve as sources of current data about contemporary music technology and its effective use in creative work. Also helpful are various writings that focus on the role of music technology in the development of music learning.[53]

Part of the narrative about the new age of creative music engagement lies in broadening our conceptions of musical understanding. For example, teacher and researcher Matthew Thibeault[54] reviewed the development of media from the 1930s to modern times, placing emphasis on the challenges that face music education in what he terms a "post-performance world." Another example of the changing scene is the consideration of video games as an avenue for music learning.[55]

A number of researchers have used case studies to examine both students' and teachers' use of technology as a major pathway to the study of compositional thinking. Stuart Wise, Janinka Greenwood, and Niki Davis[56] presented meaningful data in the study of nine classroom teachers of music working with composition and technology in New Zealand. Cambridge University teaching associate Phil Kirkman[57] also provided a perspective on the use of technology in understanding music composition process using multimodal resources and did so by the study of the compositional process over a full year of study. Technological tools such as those portrayed in these publications provide a powerful resource for engaging the creative minds of our students.

A Bright Future

The aforementioned descriptions of work in creative thinking and specifically in composition represent a small sample of the richness in the literature that serves to inspire and guide us. If we can learn from this work and have the courage to create new pathways toward using what is presented here, our future will be bright, and many of the challenges of our time will be addressed.

This special focus issue on composition continues these themes. As a conceptual framework, the article cowritten by Kaschub and Smith provides a more nuanced view of how creating, performing, and responding might be used to enhance artistry, expand expressivity, and build technical skills. David Stringham provides a powerful way to conceptualize compositional spaces in our performance-centered curricula. Curricular themes continue with new thinking about the role of songwriting in secondary music settings by John Kratus. Strand expands our views on composition still further by encouraging us to consider arts integration strategies with compositional thinking to celebrate interdisciplinary collaboration with our teaching colleagues. Daniel Deutsch provides a vital look at context-based assessment—a theme from the 1990 issue and much work since.

I close with a special endorsement of Rob Deemer's article that makes the case for more teacher preparation in composition. Recent writings about teacher education reform and the role that creative experiences like composition and improvisation must play in how we prepare teachers are emerging at almost every turn.[58] This was reinforced at both the October 2014 and November 2015 meetings of the College Music Society, which featured extensive discussions of a task force report[59] on

rethinking music curricula for *all* undergraduate music majors at the college level. Reminiscent of the Tanglewood Declaration from 1967 and the Contemporary Music Project from 1963 to 1973, this task force report centered on three pillars: creativity (composition and improvisation), diversity of music content, and integration across the many subdisciplines of music study. Prompted by the need to consider what a twenty-first-century musician must know and be able to do, this report presented a number of ideas for changing the undergraduate experience in music across all majors. It placed the encouragement of creative thinking and entrepreneurship at the center. The music teaching profession must consider the same questions for music education at the precollege level, and this special focus issue and those that are sure to follow will certainly help to make my optimistic view of a bright future a reality.

Two Contests for Your Young Composers

The National Association for Music Education (NAfME) Council for Music Composition seeks to promote and improve the teaching of music composition in school settings. The Council administers two composition contests:

- The Student Composers Competition
- The Electronic Music Composition Contest

Are there students in your classes who might create an acoustic or electronic piece? For contest guidelines, visit nafme.org and search the site using the previous bulleted terms.

Notes

1. For those interested in learning more about Estes's work, see "Richard Estes Realism," Smithsonian American Art Museum, accessed January 1, 2015, http://americanart.si.edu/exhibitions/archive/2014/estes/.
2. Sandro Parmiggiani and Guillermo Solana, eds., *Richard Estes* (Madrid, Spain: Museo Thyssen-Bornemisza [Skira], 2006), 108.
3. I prefer the terms *creativeness* and *creative work* here and elsewhere instead of the more general and often misunderstood term *creativity*. Creativeness and creative work refer more directly to the combination of *thinking processes and resultant products* of individuals and groups that are seen by stakeholders in a given culture as creative.
4. R. Keith Sawyer, *Explaining Creativity: The Science of Human Innovation*, 2nd ed. (New York: Oxford University Press, 2012), 12.
5. Maud Hickey, "What Pre-Service Teachers Can Learn from Composition Research," in *Composing Our Future: Preparing Music Educators to Teach Composition*, ed. Michele Kaschub and Janice Smith (New York: Oxford University Press, 2013), 33–56.
6. Janet Barrett and Peter Webster, eds., *The Musical Experience* (New York: Oxford University Press, 2014).
7. "National Core Arts Standards: A Conceptual Framework for Arts Learning," National Coalition for Core Arts Standards, accessed January 1, 2015, http://www.nationalartsstandards.org/content/conceptual-framework.
8. Peter Webster, "Special Focus: Creative Thinking in Music," *Music Educators Journal* 76, no. 9 (1990): 21.
9. Peter Webster, "Creativity as Creative Thinking," *Music Educators Journal* 76, no. 9 (1990): 22–28; and Alfred Balkin, "What Is Creativity? What Is It Not?" *Music Educators Journal* 76, no. 9 (1990): 29–32.
10. David Hargreaves, Dorothy Miell, and Raymond MacDonald, "Explaining Musical Imaginations: Creativity, Performance, and Perception," in *Musical Imaginations: Multidisciplinary Perspectives on Creativity, Performance, and Perception*, ed. David Hargreaves, Dorothy Miell, and Raymond MacDonald (Oxford, UK: Oxford University Press, 2012), 2.
11. John Kratus, "Structuring the Music Curriculum for Creative Learning," *Music Educators Journal* 76, no. 9 (1990): 33–37.
12. Elliot Eisner, "Instructional and Expressive Educational Objectives: Their Formulation and Use in Curriculum," in *Instructional Objectives in Music*, ed. J. David Boyle (Vienna, VA: Music Educators National Conference, 1974), 39–54.
13. Janet Moore, "Strategies for Fostering Creative Thinking," *Music Educators Journal* 76, no. 9 (1990): 38–42.
14. Patricia Shehan Campbell, "Crosscultural Perspectives of Musical Creativity," *Music Educators Journal* 76, no. 9 (1990): 43–46.
15. Lyle Davidson, "Tools and Environments for Musical Creativity," *Music Educators Journal* 76, no. 9 (1990): 47–51.
16. For a more complete review of recent research on composition in the schools, see Peter Webster, "Pathways to the Study of Music Composition by Preschool to Precollege Students," in *Oxford Handbook of Music Psychology*, 2nd ed., ed. Susan Hallam (Oxford, UK: Oxford University Press, in press). Available online via http://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780198722946.001.0001/oxfordhb-9780198722946-e-41?rskey=Qiy18e&result=2.
17. Randall E. Allsup, Heidi Westerlund, and Eric Shieh, "Youth Culture and Secondary Education," in *The Oxford Handbook of Music Education Volume 2*, ed. Gary McPherson and Graham Welch (New York: Oxford University Press, 2012), 460–75.
18. Sawyer, *Explaining Creativity*, 209.
19. Pamela Burnard, *Musical Creativities in Practice*. (Oxford, UK: Oxford University Press, 2012).
20. Lori Custodero, "The Call to Create: Flow Experience in Music Learning and Teaching," in *Musical Imaginations: Multidisciplinary Perspectives on Creativity, Performance, and Perception*, 369–84.
21. Mihaly Csikszentmihalyi, *Flow: The Psychology of Optimal Experience* (New York: Harper & Row, 1990).
22. Sawyer, *Explaining Creativity*, 14.
23. Catherine Fosnot, *Constructionism: Theory, Perspectives, and Practice* (New York: Teachers College Press, 1996), ix.
24. For an interesting comparison of the strengths and weaknesses of both constructivist approaches and those inspired by direct instruction, read these separate chapters: Peter Webster, "Construction of Music Learning" and Richard Colwell, "Roles of Direct Instruction, Critical Thinking, and Transfer in the Design of Curriculum for Music Learning," in *MENC Handbook of Research in Music Learning, Vol. 1: Strategies*, ed. Richard Colwell and Peter Webster (New York: Oxford University Press, 2011), 35–83, 84–139.
25. Jackie Wiggins, *Teaching for Musical Understanding*, 3rd ed. (New York: Oxford University Press, 2014).
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27. Webster, "Creativity as Creative Thinking," 23.
28. Peter Webster, "Creative Thinking in Music: Advancing a Model," in *Creativity and Music Education*, eds. Timothy Sullivan and Lee Willingham (Edmonton, Alberta: Canadian Music Educators' Association, 2002), 16–33.
29. For a more refined accounting of the central section of this model, see Peter Webster, "Music Composition Intelligence and Creative Thinking in Music," in *Composing Our Future: Preparing Music Educators to Teach Composition*, ed. Michele Kaschub and Janice Smith (New York: Oxford University Press, 2013), 27.
30. Magne Espeland, "The African Drum: The Compositional Process as Discourse and Interaction in a School Context," in *Why and How to Teach Music Composition: A New Horizon for Music Education*, ed., Maud Hickey (Reston, VA: MENC, 2003), 167–92.
31. Maud Hickey, "Creative Thinking in the Context of Music Composition," in *Why and How to Teach Music Composition: A New Horizon for Music Education* (Reston, VA: MENC, 2003), 31–53.
32. Maud Hickey, *Music outside the Lines: Ideas for Composing in K–12 Classrooms* (New York: Oxford University Press, 2012), 29.
33. Jackie Wiggins, "A Frame for Understanding Children's Compositional Processes," in *Why and How to Teach Music Composition: A New Horizon for Music Education* (Reston, VA: MENC, 2003), 141–67.
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38. Angela Major and Michelle Cottle, "Learning and Teaching through Talk: Music Composing in the Classroom with Children Aged Six to Seven Years," *British Journal of Music Education* 27, no. 3 (2008): 289–304.
39. Katie Strand, "A Narrative Analysis of Action Research on Teaching Composition," *Music Education Research* 11, no. 3 (2009): 349–63.
40. Elizabeth Menard, "An Investigation of Creative Potential in High School Musicians: Recognizing, Promoting, and Assessing Creative Ability through Music Composition" (PhD diss., Louisiana State University and Agricultural and Mechanical College, 2013).
41. Peter Webster, "Towards Pedagogies of Revision: Guiding a Student's Music Composition," in *Musical Creativity: Insights from Music Education Research*, ed. Oscar Odena (Farnham, Surrey, UK: Ashgate Publishing Ltd., 2012), 93–112.
42. Patricia Riley, "A Comparison of Mexican Children's Music Compositions and Contextual Songs," *Research & Issues in Music Education* 6, no. 5–5 (2008). Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=mah&AN=35420054&site=ehost-live.
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44. Laia Viladot. Isabel Gómez, and Teresa Malagarriga, "Sharing Meanings in the Music Classroom," *European Journal of Psychology of Education* 25, no. 1 (2010), 49–65.
45. Matthew Thibeault and Julianne Evoy, "Building Your Own Musical Community: How YouTube, Miley Cyrus, and the Ukulele Can Create a New Kind of Ensemble," *General Music Today* 24, no. 3 (2011): 44–52.
46. Michele Kaschub and Janice Smith, *Minds on Music: Composition for Creative and Critical Thinking* (Lanham, MD: Rowman & Littlefield Publishers, 2009).
47. Maud Hickey, *Music outside the Lines: Ideas for Composing in K–12 Music Classrooms* (New York: Oxford University Press, 2012).
48. Clint Randles and David Stringham, eds., *Musicianship: Composing in Band and Orchestra* (Chicago: GIA Publications, 2013).
49. The notion of "informal" music instruction is often linked to the important work of Lucy Green in the United Kingdom (e.g., Lucy Green, *Music, Informal Learning and the School: A New Classroom Pedagogy* [Hampshire, UK: Ashgate, 2008]). Music technology and the encouragement of creative thinking in music can play a strong role in any music pedagogy that encourages student-centered learning and the exploration of how music is made. Distinctions between the notions of "formal" and "informal" teaching settings may not always be helpful.
50. Jay Dorfman, *Theory and Practice of Technology-Based Music Instruction* (New York: Oxford University Press, 2013).
51. William Bauer, *Music Learning Today: Digital Pedagogy for Creating, Performing, and Responding to Music* (New York: Oxford University Press, 2014).
52. Barbara Freedman, *Teaching Music through Composition: A Curriculum Using Technology* (New York: Oxford University Press, 2013).
53. For a recent review of important writings about music technology use and of music software that holds promise for music development and the encouragement of creative thinking in music, see Peter Webster, "Computer-Based Technology," in *The Child as Musician*, 2nd ed., ed. Gary McPherson (Oxford, UK: Oxford University Press, 2015).
54. Matthew Thibeault, "Music Education in the Postperformance World," in *The Oxford Handbook of Music Education Volume 2*, ed. Gary McPherson and Graham Welch (New York: Oxford University Press, 2012), 517–30.
55. Evan Tobias, "Let's Play! Learning Music through Video Games and Virtual Worlds," in *The Oxford Handbook of Music Education, Volume 2*, ed. Gary McPherson and Graham Welch (New York: Oxford University Press, 2012), 532–48.
56. Stuart Wise, Janinka Greenwood, and Niki Davis, "Teachers' Use of Digital Technology in Secondary Music Education: Illustrations of Changing Classroom," *British Journal of Music Education* 28, no. 2 (2011): 117–34.
57. Phil Kirkman, "Exploring Contexts for Development: Secondary Music Students' Computer Mediated Composing," *Journal of Music, Technology & Education* 3, no. 2 (2011): 107–24.
58. Books with special significance for teacher education reform on this topic are Michele Kaschub and Janice Smith, eds., *Composing Our Future: Preparing Music Educators to Teach Composition* (New York: Oxford University Press, 2013) and Michele Kaschub and Janice Smith, eds., *Promising Practices in 21st Century Music Teacher Education* (New York: Oxford University Press, 2014).
59. "College Music Society," *Transforming Music Study from Its Foundations: A Manifesto for Progressive Change in the Undergraduate Preparation of Music Major: Report of the Task Force on the Undergraduate Music Major November 2014—Conference Version*, accessed January 1, 2015, http://www.music.org/pdf/tfumm_report.pdf.