Habits of Mind as a Framework for Assessment in Music Education

Jillian Hogan and Ellen Winner

The Oxford Handbook of Philosophical and Qualitative Assessment in Music Education
Edited by David J. Elliott, Marissa Silverman, and Gary E. McPherson

Print Publication Date: Sep 2019 Subject: Music, Music Education
Online Publication Date: Jul 2019 DOI: 10.1093/oxfordhb/9780190265182.013.3

Abstract and Keywords

Music making requires many kinds of habits of mind—broad thinking dispositions potentially useful outside of the music room. Teaching for habits of mind is prevalent in both general and other areas of arts education. This chapter reports a preliminary analysis of the habits of mind that were systematically observed and thematically coded in twenty-four rehearsals of six public high school music ensembles: band, choir, and orchestra. Preliminary results reveal evidence of eight habits of mind being taught: engage and persist, evaluate, express, imagine, listen, notice, participate in community, and set goals and be prepared. However, two habits of mind that the researchers expected to find taught were not observed: appreciate ambiguity and use creativity. These two nonobserved habits are ones that arts advocates and theorists assume are central to arts education. The chapter discusses how authentic assessment of habits of mind in the music classroom may require novel methods, including the development of classroom environments that foster additional levels of student agency.

Keywords: music education, habits of mind, thinking disposition, music ensembles, music assessment

(p. 203) EVERYONE faces challenges. But not everyone responds to the same challenge in the same way. How we respond is governed by our habits of mind, our thinking dispositions. Imagine three people in a room with a jigsaw puzzle to solve. The first person industriously gets to work and formulates a plan that allows her to get from start to finish. She lays down the corners, then the borders, and fills in the middle. We can surmise that the pursuit of organization and order seems to be a cognitive umbrella that governs her choices. She has the skill to get organized, sees a puzzle as a useful opportunity to be organized, and chooses to go ahead and make a plan. The second person responds differently, with irritation, questioning the need to complete the puzzle. She never begins the task. We can surmise that the desire to question authority seems to be governing her choices. The third person leisurely inspects the puzzle. She takes a moment to smell the cardboard of the box and slowly takes out each puzzle piece, looking at and feeling each

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

one. This person's behavior suggests a different cognitive umbrella: she seems governed by the habit of mindfully noticing sensory information. In new situations, she defaults immediately to slowing down and attentively taking in the sights, sounds, and smells of the setting.

We all have developed habits of mind that guide our behaviors. In the activities of a musician, we can infer many thinking routines that are a result of engaging in music making, automatic trains of thought that do not require a great deal of prompting to elicit. Wondering "Am I in tune?" and asking "How should I fix it?" are pervasive, habitual ways of thinking for a skilled musician. We do not see professional orchestra conductors touching their earlobes, frantically trying to signal that the chord should be (p. 204) tuned. That behavior is more likely to be seen in high school conductors, whose students are still developing the habit of mind of listening for intonation. Similarly, longtime musicians do not receive lengthy lectures about arriving at 7:00 p.m. for the 8:00 p.m. concert or about preparing for rehearsal by bringing a pencil, as we sometimes hear from school music teachers. Rather, seasoned musicians have a disposition of thought that has them wondering, "Am I ready? For the next performance? For the next rehearsal? For the next entrance?" By the time musicians have reached an amateur level, there is a thorough understanding that music making requires persistence. They enter the practice room and rehearsal space with a general understanding that to make progress, they will need to work hard, even when things are difficult. This isn't a new discovery every time they begin music making, but rather an underlying habit of mind that motivates their behavior.

For practiced musicians, habits of mind like these are nearly automatic. They don't require a great deal of conscious thought; they are readily accessible. In this chapter we argue that music education helps instill a number of discipline-specific habits of mind, and that these are useful to musicians at all levels. While the vast majority of music students do not aim to be professional musicians, they nonetheless can benefit from broad thinking dispositions that are a result of participation in music making. Arguably, these are the most cogent and important benefits for amateur musicians. These habits of mind are of great importance to music making and music understanding, but they have not typically been considered when assessment frameworks in music are developed. Since we believe all students can benefit from calling attention to and valuing habits of mind used by musicians, we argue in this chapter that music assessment should include an assessment of musical habits of mind.

Conceptions of Thinking

In using the term "habit of mind" we are referring to generalizable ways of thinking that are big and broad, not necessarily specific to the music domain. Examples of domain-specific skills include recognizing the images on a microscope slide (biology), drawing in linear perspective (visual art), knowing fingerings for guitar chords (music), and demonstrating proper form for a basketball free throw (athletics). By describing something as a habit of mind, we imply a more general and generalizable ability. Habits of mind are ways

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

of thinking that could potentially be used outside of the domain in which they are observed. Categorization, for example, is a habit of mind that might be taught in biology class but could be deployed in many disciplines, including the arts, language learning, and history.

Another way of thinking about habits of mind is that they are cognitive patterns that support dispositional thinking (Perkins & Tishman, 2001; Perkins, Jay, & Tishman, 1993). Dispositional thinking is a way of describing abilities beyond just the use of skills. (p. 205) D. N. Perkins and others consider three aspects of dispositional thinking: ability, sensitivity, and inclination. Take the example of categorization. A child may have the *ability* to sort nonliving from living things in a science class but may not notice when this is called for. Noticing when this is called for requires *sensitivity* to situations in which the ability to categorize might be useful. When a child uses her ability to sort living from nonliving things as a way of deciding if something is compostable or not, she is showing sensitivity to the opportunity to use this ability. *Inclination* refers to the motivation to use categorical thinking as opposed to some other strategy, such as guessing whether or not the object is compostable. When using a lens of thinking dispositions, teachers ask not only the skill-based question, “Can the student do this?” They also probe behaviors and attitudes with questions such as, “Does the student know when to do this?” (asking about sensitivity) and “Will the student do this?” (asking about inclination). We consider the terms “habit of mind” and “thinking disposition” to be synonymous and use both interchangeably here.

Habits of mind are broad enough to make their utility applicable to more than one discipline. However, cultivating one particular habit of mind in one discipline does not necessarily mean that habit of mind will transfer to another discipline (Detterman & Sternberg, 1993; Perkins & Salomon, 1989). The study of transfers of habits of mind between disciplines is one for continued and future research.

Habits of Mind

A focus on habits of mind in school curricula is not new. The teaching of habits of mind, or similar concepts called by different names, is noted in general education (Boyes & Watts, 2009a, 2009b; Costa & Kallick, 2013; Fletcher, Najarro, & Yelland, 2015; Ritchhart, Church, & Morrison, 2011; Root-Bernstein & Root-Bernstein, 2013; Tishman, Jay, & Perkins, 1993, 1995). The teaching of habits of mind is also noted in distinct subject areas: math education (Cuoco, Goldenberg, & Mark, 1996; Goldenberg, 1996; Goldenberg & Mark, 2015), special education (Burgess, 2012), science education (Calik & Coll, 2012; Steinkuehler & Duncan, 2008), higher education (Berrett, 2012; Wineburg, 2003), teacher education (Borko, Liston, & Whitcomb, 2007; Diez & Raths, 2007; Dottin, 2009), and medical education (Epstein, 2003; Lunney, 2003). Most of these are lists of habits of mind that are created “top-down”; that is, they derive from literature reviews or beliefs about the kinds of habits central to a particular discipline. A few frameworks have been built “bottom up,” on the basis of systematic observation of teaching in specific disciplines.

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Because we know of no literature that specifically puts forth a framework of habits of mind or thinking dispositions in music education, we first examine resources in general education and other disciplines in order to illustrate what we believe to be possible within the domain of music education.

(p. 206) Habits of Mind in General Education

Some of the most prolific resources about habits of mind are those by Arthur Costa and Bena Kallick (2000, 2008, 2009). They have developed a top-down list of sixteen habits of mind (e.g., striving for accuracy, managing impulsivity, gathering data through all the senses, finding humor), now adopted by schools around the world. Costa and Kallick (2008) aimed to create a list of dispositions that help students become critical producers—rather than reproducers—of knowledge. They define habits of mind as "broad, enduring, and essential lifespan learnings that are as appropriate for adults as they are for students" (p. xvii), a definition consistent with our own vision. Their books describe various strategies for formatively and summatively assessing such habits of mind, including school report card redesigns that reflect progress with each habit of mind; lists of concrete behaviors that serve as evidence of thinking within a habit of mind; tools for helping students monitor their thinking progress and set goals; and rubric, portfolio, performances, and journal examples. A quick search engine query reveals many blogs and resources that teachers have developed for using and assessing habits of their own minds in their classrooms—evidence that using thinking as a fundamental guide for learning in the classroom is possible.

Habits of Mind for Creative Education

Habits of mind in creative education are addressed theoretically (Booth, 2009, 2012) and in terms of assessment in schools (Lucas, 2016; Lucas, Claxton, & Spencer, 2014; Spencer, Claxton, & Lucas, 2012). Booth argues that his top-down list of twenty habits of mind for creative engagement includes attitudes and processes that occur within the flow state of creative activity. These habits include inquiring skillfully, persisting, observing intentionally, going back between parts and wholes, and self-assessing. Booth notes that while creative engagement is often seen in the arts, creativity is not limited to the arts and can be seen in any discipline. These habits become routine and automatic. They do not require conscious control because they are ingrained. Using them helps learners achieve flow. Bill Lucas, Guy Claxton, and Ellen Mary Spencer developed an assessment tool that captures five broad dispositions (inquisitive, persistent, imaginative, collaborative, and disciplined), each with three subdispositions. Teachers in various disciplines, and teaching at different grade levels, have used this tool, ranking each student's progression from novice to advanced within each of the fifteen subdispositions. Teachers found this assessment tool not only useful but also feasible for giving formative feedback, and students reported that the accompanying self-report was accessible.

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Habits of Mind in the Arts

The habits of mind put forth in *Studio Thinking: The Real Benefits of Visual Art Education* (Hetland, Winner, Veenema, & Sheridan, 2007, 2013) were developed bottom up, (p. 207) through systematic observation of high-level teaching in the visual arts. Five teachers in arts-based high schools were observed, videotaped, and interviewed over the course of a school year. The aim was to code teachers' behaviors into the teaching of habits of mind. Teaching of eight broad habits of mind was observed: develop craft, persist, envision, express, observe, reflect, stretch and explore, and understand art worlds. Because this list of dispositions was created from data within classrooms, these habits of mind are ones that teachers are likely to already be teaching. In fact, many visual arts teachers report that having a list of such dispositions resonates with their current teaching and provides them with language to discuss the value of their discipline (Hogan, Hetland, Jaquith, & Winner, 2018). Thus this framework was not put forward as a mandate for how teachers should teach, but rather was offered as a way of illuminating ways of thinking already present within the authentic practice of the discipline. And if these ways of thinking are authentic, they should be assessed.

The Studio Thinking framework has been adopted in the visual arts curricula and assessment practices by school districts across the world. Teachers report that this list of habits of mind provides them with concepts and terms with which to speak to administrators, parents, and students about the importance of what they do. Now, in addition to assessing technical skills such as color mixing or shading or perspective drawing, teachers are discussing and assessing students' ability to persist through technical challenges, envision a plan for creating and completing an artwork, and critically reflect upon their own progress.

Visual arts teachers are putting these kinds of habits of mind at the forefront of their teaching, making them explicit to students, and making them a part of ongoing formative assessment. For example, many teachers try to help students become aware of the habits they are using and thereby become more metacognitive in their art-making practice. Teachers hang signs on the wall noting each habit of mind, use the first five minutes of class to discuss a famous artwork whose creation exemplifies a particular studio habit of mind, review strategies for becoming skilled in a particular studio habit of mind, and provide students with feedback on how well they are exhibiting studio habits of mind. Other strategies include asking students to discuss studio habits of mind in artist statements written after the completion of a work and "exit tickets," in which students reflect on which habits of mind they employed during the course of the class. Visual arts teachers have developed rubrics to capture progression within the development of each habit of mind, and these can be completed by the teacher as well as the student (Hogan, Hetland, Jaquith, & Winner, 2018).

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Habits of Mind in Music Education

We argue here that music teachers should follow the example of visual arts teachers by teaching for and assessing musical habits of mind. We have brought the approach used by Lois Hetland et al. (2007, 2013) to the high school music ensemble classroom (Hogan & Winner, 2015). In short, we have developed, bottom up through systematic observation, a catalog of habits of mind that are already present within high school (p. 208) ensemble classrooms. Our method was to code the teaching behaviors of six public high school ensemble teachers in twenty-four videotaped rehearsals.

We describe our findings in the following sections, with an awareness of the current environment of disagreement about the aims and potential reform of music ensemble education (Allsup, 2012; Allsup & Benedict, 2008; Elliott & Silverman, 2015; Fonder, 2014; Heuser, 2011, 2015; Regelski, 2013; Thibeault, 2015; Williams, 2007, 2011). Here we adopt two different perspectives: that of empirical researchers observing what we see and that of critical commentators. The aim of the study was to investigate and identify those broad, potentially transferable habits of mind that are already present in typical high school ensemble teaching—ensembles in which the conductor-teacher does most of the talking and group decision-making. We believe that reporting what we observe will shed light on the thinking that is occurring (mostly through modeling) in teacher-directed, large ensembles. At the same time, as critical commentators we wholeheartedly support emancipatory arguments for the democratization of music education, increasing student-centered and social practices, and making music education more relevant to diverse populations—ideas fundamental to practices such as informal music learning (Green, 2002, 2009).

It is our hope that an identification of the habits of mind being taught in traditional music ensemble classrooms will help teachers of all music education approaches make the teaching of these habits of mind more explicit. At the same time, we also aim to call attention to authentic and important musical habits of mind that we do not see when we observe what actually goes on in typical ensemble music classrooms. Thus our work may also be useful in thinking not only about how best to assess, but also about how best to teach and how to best structure any possible reforms.

Our preliminary findings suggest that teaching behaviors used in the course of rehearsals can be categorized into eight habits of mind, five of which were seen with high levels of frequency and three of which were seen with more moderate levels of frequency. Habits of mind taught with high levels of frequency were evaluate (decide what needs to be better), listen (really listen, not just hear), imagine (use imagery and inner hearing), persist (focus and “stick to it”), and set goals and be prepared (think toward the future). The three less frequently observed habits of mind were participate in community (show accountability to the musical group), express (find and show meaning), and notice (critically observe through the eyes and body).

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

As mentioned previously, it is important to know not only what is being taught in music classrooms but also what is not being taught. In our study, there were two habits of mind that we consider important but that were not observed being taught: use creativity (engage in novel and useful thinking) and appreciate ambiguity (recognize that musical problems have more than one correct answer). Arts advocates often claim that arts education teaches students to think creatively and to recognize that problems have more than one correct answer (Davis, 2008; Eisner, 2002), and 97 percent of the American public believes that playing an instrument helps a child or teenager develop creativity (NAMM, 2009). While we did not observe music teachers trying to instill (p. 209) these two habits of mind despite systematically looking for them, we believe these habits can and should be taught in all music classes.

A notable difference emerged between the coding processes in visual arts and ensemble music. In visual arts classes, students were directly engaged in practicing the habits of mind being taught. They were nearly always active participants in the thinking disposition. This happened when teachers asked questions to lead students to their own thoughts rather than giving explicit directions for improvement. In ensemble music rehearsals, the conductor-teacher did not engage the students in this way, instead giving the students explicit directions about what to do. Was the conductor-teacher the only one doing the thinking, or did the students implicitly model this example? We cannot know, but we can say that the students rarely stated any decisions or evaluations. We recognize that other types of music classes, not large secondary school ensembles, may be more likely to emphasize these habits of mind or to teach them in a way that is more active on the part of students. Perhaps environments such as general music classes, popular music ensembles, jazz groups, and dedicated composition and songwriting classes are more natural settings for such activities. However, we believe teachers of high school ensembles can continue to build upon the habits of mind we've documented here and grow to both include additional habits of mind and become more student centered and informal in their practice. Models for reconceptualizing traditional ensembles are becoming more available to assist teachers (Abrahams, Rafaniello, Vodicka, Westawski, & Wilson, 2017; Clements, 2010; Colquhoun, 2017; Heuser, 2015).

Musical Habits of Mind

The ten habits of mind we have identified in our study are consistent with our definition of a habit of mind; they are big, broad, and potentially useful outside of the music room. We can also think of them in terms of the framework of D. N. Perkins, Eileen Jay, and Shari Tishman (1993): they encompass a skill, an awareness of when to use the skill, and an inclination to do so. Furthermore, these thinking dispositions are already either inherent in the process of authentic school music making or on the minds of practicing music teachers, as evidenced by their presence in the literature, discussed later in the chapter. But by drawing attention to the concept of habits of mind, teachers may be encouraged to

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

make these more explicit in their teaching and to develop ways of assessing them. In what follows, we go into more detail about each of the habits we observed being taught.

Habits of mind are nonlinear. They are complex cognitive routines, and though they develop through systematic practice, they do so over time and in idiosyncratic ways. The list of possible habits of mind used for assessment in the classroom is presented alphabetically here. We make no claims for the importance of one habit of mind over another or any kind of developmental progression. Rather, it is our claim that thinking (p. 210) dispositions work together simultaneously, the boundaries separating one disposition from another are not always clear, and they are often fuzzy.

Habits of Mind Observed in Music Classrooms

Evaluate (Decide What Needs to Be Better)

The general music classroom, the ensemble rehearsal, and the individual practice session all incorporate forms of evaluation. In our data, teachers were often the modelers of the evaluation process, pointing out errors and making suggestions for their improvement, but we know there were additional opportunities for students to take greater part in the evaluation process. While there is considerable discussion about music teacher modeling in regard to skills, such as the demonstration of beautiful tone quality or correct rhythm (Dickey, 1992; Haston, 2007; Polk, 2006), there is far less discussion about music educators using modeling to teach thinking behaviors such as evaluating. We suggest that the continual modeling of evaluating out loud by the teacher is of equal or greater importance as the modeling of skills. Even more important, we hope to see further research on how teacher modeling of student evaluation can improve students' self-evaluation so that students can become active participators in all musical evaluations.

While teachers can and should model the skill of evaluating a piece of music, doing so does not fully cultivate a habit of mind in the three-part definition of Perkins, Jay, and Tishman (1993), which includes skill, sensitivity, and inclination. While students may, for example, have the skill to identify something to make measure six better, they may not have the sensitivity to know that measure six is a good place to focus some attention or the inclination to make improvements at all. In fact, research by Perkins and colleagues suggests that when presented with problems that require dispositional thinking, students do quite well in demonstrating the skill to solve problems. However, only about 10 percent of the time were students able to demonstrate the sensitivity to find those problems (Ritchhart & Perkins, 2005). Thus, while students may learn from teacher modeling how to evaluate their playing, they do not naturally intuit when to evaluate themselves. Teachers must therefore provide opportunities for them to do so.

The development of independent practicing skills has been stressed in music education (Byo, 2004; Hart, 2014; Miksza, Prichard, & Sorbo, 2012; Prichard, 2012). Teachers regularly create practice charts, logs, forms, and reflection prompts in order to focus stu-

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

dents' attention during music making (Johnson, 2009; Oare, 2011). The aim of these activities is to create musicians who are able to monitor their performance and then take appropriate steps, through evaluating, toward refining that performance. When students are encouraged to troubleshoot problems in their music on their own, they (p. 211) practice not just the skill of evaluating, but also the sensitivity and inclination to do so. This process can provide valuable assessment information for teachers as they consider how each student is progressing toward thinking like an authentic musician.

Throughout daily life, we frequently encounter situations that require evaluation. From troubleshooting why the freezer isn't keeping the ice cream cold enough to concluding whether a posting on social media is reliable or not, people constantly demonstrate the skill to examine information, the sensitivity about when to examine that information and assign value to it, and the inclination to do so.

Express (Find and Show Meaning)

Expression in the music classroom is taught both verbally and nonverbally through musical works. Consider the role of the ensemble conductor-teacher. One of her aims is to help convey intended emotional messages through the performance of the group. She may choose to do this nonverbally, through the shape, force, speed, and articulation of her gestures. She may also choose to do this verbally; for example, "play cheerfully," "play like a stormy day," "play like you are fearful." Consider how a general music teacher can help his second-grade students sing a lullaby. By prompting with questions about phrasing, dynamics, and articulations, he is helping students convey expressive emotionality in music.

Teachers can use students' abilities to recognize and convey expressive messages in music for assessment. By allowing students the opportunity to work in small groups to make musical choices about interpretation; giving homework assignments to mark up a score with dynamic, tempo, or other expressive markings (as suggested by Byo, 2014); or assigning composition work with the guideline of having an expressive message, teachers are teaching and can assess the way students express through music.

Expression is something we value throughout the course of a student's school day, including language arts classes and foreign language instruction. The ability to identify a message to convey and craft a meaningful way in which to portray it is paralleled in writing essays, completing geometry proofs, and articulating a winning basketball strategy.

Imagine (Use Imagery and Inner Hearing)

Imagining includes the ability to call up pictures, sounds, smells, feelings, and moods. Music teachers frequently ask their students to imagine, and we separate these instances as happening through both metaphorical and literal means. A teacher may invite students to imagine they are singing for the queen of England, playing a baby to sleep, or any other situation that helps set the mood, genre, or spirit of the piece. In general music settings, students may have a chance to imagine during exploration activities, fundamental

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

to the Orff-Schulwerk approach (Frazee & Kreuter, 1987), or by (p. 212) devoting time to exploratory musical centers, as described by Stevens (2003). The results of these imaginative explorations can be documented by the teacher, in student reflections, or by in-group sharing. In referring to literal imagining, we mean the process of "audiation" (Gordon, 2003)—that is, "singing in one's head" tones and rhythms that have been heard before or something created in the moment. A direction to play a passage with shorter articulations may result in a band student audiating the passage before playing it. A general music student may audiate the steps of the folk dance he is learning after being taught using Phyllis Weikart's (2006) "say, say and do, whisper and do, think and do" approach. While theories of audiation in music making have been challenged in recent years by more holistic and complex theories, such as Elliott and Silverman's (2015) 4E-concept of musical personhood, the emphasis teachers placed on subdividing, giving time to play something "in one's head," or questions about how a passage might sound from outside of the ensemble and from an audience perspective, which emerged during our coding process, required students to use their inner hearing in an imaginative way.

While this habit of mind could be assessed by Edwin Gordon's (1986) Music Aptitude Tests, assessing in this manner is unlikely to capture all the parts that are encompassed within a habit of mind. The use of this measure would not reveal whether a student knows when it is a good time to be using inner hearing. For this, we must assess in vivo or retrospectively, within the context of actual music making.

The habit of mind of imagining is used in many disciplines. Architects and engineers imagine new buildings and products before they are reality, while dancers and athletes imagine their bodies moving through space, and archaeologists and historians imagine a world before the time in which they live.

Listen (Really Listen, Not Just Hear)

In many ways, listening is the aural counterpart to observing. While Hetland et al. (2013) describe observing as "really seeing, not just looking," listening can be thought of as "truly listening, not just hearing." In a world full of sounds, music teachers aim to engage children in "ear cleaning" (Schafer, 1976 in Campbell & Scott-Kassner, 2013), in which students eliminate the distractions of aural pollution in order to reflect on and attend only to musical sounds. Students in music classes are regularly asked to listen to themselves and the group critically. Judgments that students are asked to independently make about their own sounds include focused aural attention to subtleties in intonation, balance, timbre, pitch and rhythm accuracy, articulations, and the musically expressive interpretation of the score as a whole. Students are regularly encouraged to listen not only to their own sounds, but to how their sounds match the sounds of those around them. For example, questions such as "Are my standmate and I playing that note the same length?" are ones that conductor-teachers encourage students to be asking of themselves; if they don't, conductor-teachers ask them for the students. (p. 213) Listening is recognized in the litera-

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

ture as an important part of teaching music (Byo, 1990; Elliott & Silverman, 2015; Huenink, 2012; Townsend, 2003).

Listening happens concurrently when we evaluate a performance, persist in recreating a specific sound, imagine a place where this piece might be played, or observe whether or not a peer's playing is following the conductor. Because music making is impossible without listening, and comprehensive listening education can happen simultaneously within active music making (Elliott, 1997; Elliott & Silverman, 2015), this habit of mind is ubiquitous within the music classroom. It should be assessed in ways that reflect the active, authentic music making that occurs in those classrooms, which may include integration with another habit of mind.

Common statements by elementary classroom teachers, such as, "get your listening ears on," or "stop, look, and listen," confirm that listening is important throughout one's day, particularly in following directions, communicating with others, and synthesizing spoken information. Some researchers argue for the human connection that listening provides and advocate for its systematic teaching in general education (Wolvin, 2012; Wolvin & Coakley, 2000).

Notice (Critically Observe Through the Eyes and Body)

Students in music classes, particularly those that involve group performance, need to look closely, specifically at the gestures of the conductor-teacher or the group leader. Eye contact, facial movements, and gestures, from the tip of a finger to the entire body, are just some of the ways that the conductor-teacher conveys important information to students mid-piece. Phrases such, "Look up here!," "Eye contact!," and "Follow the stick!" (referring to the baton) were all common utterances by conductor-teachers in our data, and they encourage close and frequent critical observation. In less teacher-centered environments, such as garage bands and chamber ensembles, a focus on observing one another is equally or more important.

In addition, teachers in our study consistently called attention to students' bodies—for posture, fingerings, bowings, breathing, and so on. They also designed warm-up activities specifically aimed at focusing students' attention on their bodies, and they periodically asked students to check their posture.

The ability to critically notice also holds value outside of the artistic realms. The eye contact and facial observation taught in music ensembles are comparable to the systematic teaching of social and communication skills in other domains or with exceptional populations (Cappadocia & Weiss, 2011; Palmer, 2011). In addition, critical observation plays an important role in analyzing the results of scientific experiments and mathematical data. Those in the medical sciences frequently critically observe in order to find abnormalities and form diagnoses. Awareness of one's body can help with the maintenance of: a positive state of mind, one's health and well-being, and one's direction of movement through complex crowds and tight spaces.

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

(p. 214) Participate in Community (Be Accountable to the Musical Group)

The formed community and individualized culture of the school music ensemble are well documented in the literature (Adderly, Kennedy, & Berz, 2003; Bartolome, 2013; Morrison, 2001; Parker, 2014) and were present in our sampled high school classes. Music ensembles in high schools are different from other classes in the school day in the way students refer to them. While one "takes" a math class, another is "in" the orchestra (Morrison, 2001). Sarah Bartolome (2013), Mary Kennedy (2002), and Adderly, Kennedy, and Berz (2003) describe students' perceptions of ensembles as collective experiences. Students report learning to think of the group before oneself and valuing the opportunity to be with like-minded individuals. Sarah Morrison (2001) believes ensemble teachers serve as "culture bearers," passing on values, traditions, and accepted practices to a younger generation. Acts of culture bearing can vary widely on the part of the conductor-teacher, from ordering band jackets and organizing group field trips, to modeling the conversational manner of musicians, to assigning orchestra buddies, to pairing younger and older students as stand partners. When ensemble teachers hold students to high standards of musicality and for commitment and accountability to the group, they are helping to teach students to work for the good of the entire group. Teachers can document these culture-promoting practices formally, such as assigning new students older ensemble buddies or giving jobs to make sure set up and strike down are completed. Or they can be documented more informally, such as noting the student who volunteers to give up her spot on a prized classroom instrument in an Orff Schulwerk arrangement so that a better balance can be achieved, or the high school senior who volunteers to wake up extra early to help drive freshmen to the orchestra competition on time.

Having the ability, awareness, and inclination to work with others and for the good of the group is acknowledged to be a valuable habit of mind. The Partnership for 21st Century Skills (n.d.) cites both interacting effectively with others and working effectively in diverse teams as necessary life skills for current students. Furthermore, mental health professionals advocate for a systematic emphasis on group belonging in the education of adolescents, and this subject is prevalent in the literature (Allen & Bowles, 2012; Faircloth & Hamm, 2011; Tillery, Varjas, Roach, Kuperminc, & Meyers, 2013).

Persist (Focus and "Stick to It")

We use group engagement with "persist" because students are most likely to persist when they are engaged. Music making is an activity that lends itself to deep engagement, as described in the flow process articulated by Mihaly Csikszentmihalyi (2011) and first applied to music education by David J. Elliott (1995). The playing of a musical (p. 215) instrument is acknowledged in the literature to require perseverance, discipline, and persistence (Costa-Giomi, Flowers, & Sasaki, 2005; Pitts, Davidson, & McPherson, 2000), and teachers play a large role in encouraging students to continue on an instrument (Davidson, Sloboda, & Howe, 1995; Woody, 2001).

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Music teachers cultivate in their students the twin habits of engaging and persisting in a number of ways. In woodshedding a piece of music, the band teacher continually asks for "one more time," modeling that a piece can always be better, even moments before a performance. Choir teachers who stress body and posture awareness are asking for the complete engagement and attention of their students. The orchestra teacher who has her students hold chords over and over to distinguish subtle changes in intonation is requiring sustained perseverance. The nature of the music ensemble rehearsal in schools—beginning a piece that is difficult enough to require continued practice and seeing that piece through until it is polished enough for public performance—can be viewed as one long exercise in persisting through challenges. This persistence can be documented in any number of ways for assessment purposes: through student reflection, recorded practice sessions archiving student persistence, or teacher rubrics documenting effort through composition or small group activity challenges. In addition, teachers who model constant engagement are teaching their students how to engage deeply. Bakker (2005) found a positive relationship between the flow music teachers reported in their work day and the flow experiences reported by their students.

Persistence is likely mediated by the positive rewards that music provides, including emotional investment (Gabrielsson, 2010; Mas-Herrero, Marco-Pallares, Lorenzo-Seva, Zatorre, & Rodriguez-Fornells, 2013; Schellenberg, 2003). It is easy to look at these benefits and assume that all musical experiences lead to engagement through the intrinsic motivation that results from positive emotion. And perhaps for many students these positive emotions are enough to maintain engagement no matter the music education setting. However, practices present in some traditional music ensembles, such as auditioned seating, scored festivals, and relentless standards for perfection from a conductor-teacher (sometimes accompanied by shaming for not reaching the goal), may be motivating students through extrinsic means (Ryan & Deci, 2000; Kohn, 1999). If students are to become independent amateur or professional musicians beyond their years in school, they should be aware of their motivations for participating in music, and those should be intrinsic—without the need for medals and ribbons, and simply for the cognitive, emotional, social, and spiritual well-being music making can provide.

The ability to persist is useful in all areas of life, not only in the music room. The presence of grit and deep persistence over time predicts future success (Duckworth, Peterson, Matthews, & Kelly, 2007), and self-discipline is a better measure of academic performance than is IQ (Duckworth & Seligman, 2005). In addition, the occurrence of flow, achieved through deep engagement in an activity, is argued by Csikszentmihalyi (2011) to increase happiness in life.

(p. 216) Set Goals and Be Prepared (Think toward the Future)

Traditionally, the ensemble rehearsal can be conceptualized as a series of segments, each devoted to a particular performance goal (Duke, 1994, 1999; Worthy, 2003). These goal-setting behaviors were fundamental to the rehearsals in our data set, in which students were continually challenged to meet a new goal. According to K. Anders Ericsson, Ralf

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Krampe, and Clemens Tesch-Romer (1993), deliberate (goal-oriented) practice is a key component in becoming a musician (at an amateur or a professional level), and this behavior was commonplace in the traditional music ensembles we observed. To refer to a piece as “done” is not compatible with musical vernacular. Instead, musicians are continually setting goals to make improvements. Students are taught to set goals that encompass increasingly minute details in terms of musicality, expressivity, tone, and other musical elements. When conductor-teachers model this process with their classes, they are teaching the habit of goal setting and preparedness.

Similarly, musicians must always be prepared for the next thing. This might be having one’s bow up to play as soon as the conductor takes the podium, bringing a pencil to rehearsal, arriving for warm-up early enough before the performance, or being prepared to watch the conductor for the starting downbeat. Authentic music making always includes being prepared for what is coming next. Assessment practices in music education should aim to capture this habit of mind and thereby call students’ attention to this in a focused manner.

Goal setting and preparedness is important in many arenas. This forward-thinking orientation is used by travel agents and event planners, who are always ready with a plan B; by shift leaders, who set reasonable production goals for their staff; and by medical assistants, who prepare the emergency room with all needed equipment for the incoming patient.

Habits of Mind Not Observed

Appreciate Ambiguity (Recognize Problems with More Than One Correct Answer)

As mentioned, arts education theorists have argued that the arts enable students to see that multiple perspectives can be correct and valid, and that there is frequently more than one correct answer to a question (Davis, 2008; Eisner, 2002). And as mentioned, we did not see this kind of understanding being cultivated. While playing or singing in a group, there is an understanding that certain creative liberties on the part of each performer must be sacrificed in order to create a cohesive interpretation. In most cases, both professionally and in school ensembles, the conductor decides all aspects of these interpretations. But ensemble classrooms need not be this way. Giving students creative (p. 217) liberties to explore possible musical interpretations allows them to practice authentic music making. This would also reinforce a habit of mind fundamental to musical literacy: a recognition that there are multiple ways of conveying, experiencing, or understanding the same phenomenon.

Certain adaptations can be made to ensemble classes to emphasize this habit of mind, such as the integration of chamber groups. In addition, composition or general music

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

classes may emphasize this habit of mind more than we see in traditional ensemble classrooms.

How might the recognition of multiple ways of thinking about a problem be generalized? Clearly there are multiple ways of interpreting data in science and multiple ways of interpreting historical events, and the recognition of multiple points of view is a critical skill for empathy.

Use Creativity (Engage in Novel and Useful Thinking)

When we conceptualize creative thinking in the classroom, we rely on the most commonly used definition: allowing students to think about solutions that are both novel and useful.

In our study (Hogan & Winner, 2015), we saw very little evidence that high school students in large ensembles use any kind of creative thinking. Composition-based and general music classes are likely to provide more opportunities for students to gain experience making creative musical decisions. But we believe that opportunities to make creative decisions can and should be incorporated into ensemble classes, in which case creative decision-making could be assessed.

The claim that students need greater opportunities to develop creative thinking is very common (The Partnership for 21st Century Skills, n.d.), and developing novel and useful ways to accomplish processes and products is relevant in nearly every discipline, from medicine, design, architecture, marketing, and hairstyling to fashion design.

Assessing Musical Habits of Mind

It is important to repeat that each of these broad habits of mind encompasses skills, and that these skills may, on their own, be fairly easy to assess. However, by identifying these abilities as habits of mind, we are interested in calling attention not just to the skill, but also to the awareness of when to use the skill and to the motivation to do so. While these two components may be more difficult to assess, they are important qualities that help students make practical use of these ways of thinking until they truly are habits: patterns of thinking that can be accessed immediately and without teacher direction, rather than a capability that a student can demonstrate but only at the teacher's request. For example, teachers could design a task assessing the ability to observe a (p. 218) conductor: Can a student distinguish a ⅝ beat pattern from a ⅞ beat pattern by watching a video of a conducting pattern? But a more authentic assessment would place a student in an ensemble with her instrument and determine whether she knows that the measure that switches from ⅝ to ⅞ is an important time to watch the conductor. This would also show that the student is motivated enough to stay with her section that she will do so. Teachers can use videotapes to record rehearsals and watch these student behaviors in context.

For many of these proposed habits of mind, authentic assessment may need to happen in ways that are not fully congruent with the large ensemble tradition. Assessment may be

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

easier to accomplish with the integration of chamber groups, unusual homework assignments, more use of composition activities, dedication to reflection activities, use of student conductors so that the teacher can make written observations about sections, and generally more opportunities for students to make individual musical decisions. However, the prevalence of these habits of mind in the music education literature shows they are already relevant to the thinking of music educators.

In fact, the US National Core Arts Standards (2014) employ habits of mind in the category called “anchor standards.” Each of the eleven anchor standards is an example of a habit of mind that is useful inside and outside the arts. For example, one “conveys meaning” in many different places and ways—through writing essays, by monitoring one’s body language, through creating a dance, and so on. Many of the anchor standards also map directly onto the habits of mind we have observed and described here. Anchor standard 6, “convey meaning through presentation of artwork,” is very similar to what we describe as “express,” while anchor standard 5, “develop and refine artistic work,” is nearly synonymous with “goal setting.”

In an editorial in the *Music Educators Journal*, NAfME president Glenn Nierman (2015) mentions dispositions such as working together toward common goals, flexibility, and risk taking, and he draws connections among these dispositional ways of thinking in music and the process orientation of the new National Standards. In addition, the National Association for Music Education (NAfME) modified its advocacy strategy in 2014 in order to include broad ways of thinking. Rather than focusing narrowly on in-the-[testing]-bubbles messages about arts education, such as the idea that music improves academics (which has little concrete support; see reviews by Winner & Cooper, 2000; Winner, Goldstein, & Vincent-Lacrin, 2013), the “Broader Minded” movement includes ways of thinking that go “beyond the bubbles” to assess habits such as grit, decision-making, reflection, and communication (National Association for Music Education, 2015).

While using these broad ways of thinking for advocacy is another avenue to encourage discussion about habits of mind, including these concepts in classes, with students, and for curriculum and assessment purposes is even more important. It is encouraging that NAfME and the National Standards have included broad ways of thinking in their recent publications and statements. But these declarations are not the result of bottom-up research that tells us what is actually going on in music education classrooms. We believe further research that examines the kinds of habits of mind being taught in a (p. 219) variety of music classes—from general music to iPad ensembles to guitar class—is needed. In addition, studies that investigate whether students are learning habits of mind that are being taught and that document assessment practices for these habits of mind are also important next steps.

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Conclusion

The act of music making is complex and multifaceted. When music educators focus solely on assessing musical technique, they are shortchanging the important ways of thinking that are developed through music making. While some music educators may acknowledge the habits of mind documented here, we argue that these should be put at the forefront of curricular and assessment discussions in all music education environments. Instead of viewing the inclusion of habits of mind as an external mandate, unrelated to or piled on top of the important work that music educators are already doing, the inclusion of habits of mind should be seen as illuminating the thinking that is already occurring in classrooms. At the same time, to capitalize on the development of certain habits of mind, some reforms and flexibility may be needed by music teachers. Fortunately, there are several successful frameworks in various disciplines that can help guide music educators, and the inclusion of habits of mind in the new National Core Arts Standards can help make the discussion of habits of mind in music education more commonplace. It is important that standards, frameworks, and assessment tools that are developed be a result of research that critically and systematically takes into account what teachers are already emphasizing in their classrooms, while still challenging teachers to make music making a more authentic, democratic, and relevant process for students.

References

Abrahams, F., Rafaniello, A., Vodicka, J., Westawski, D., & Wilson, J. (2017). Going green. In F. Abrahams & P. Head (Eds.), *The Oxford handbook of choral pedagogy* (pp. 65–86). New York: Oxford University Press.

Adderly, C., Kennedy, M., & Berz, W. (2003). “A home away from home”: The world of the high school music classroom. *Journal of Research in Music Education*, *51*(3), 190–205.

Allen, K., & Bowles, T. (2012). Belonging as a guiding principle in the education of adolescents. *Australian Journal of Educational & Developmental Psychology*, *12*, 108–19.

Allsup, R. E. (2012). The moral ends of band. *Theory into Practice*, *51*(3), 179–87.

Allsup, R. E., & Benedict, C. (2008). The problems of band: An inquiry into the future of instrumental music education. *Philosophy of Music Education Review*, *16*(2), 156–73.

Bakker, A. B. (2005). Flow among music teachers and their students: The crossover of peak experiences. *Journal of Vocational Behavior*, *66*(1), 26–44.

Bartolome, S. (2013). “It’s like a whole bunch of *me*!”: The perceived values and benefits of the Seattle Girls’ Choir experience. *Journal of Research in Music Education*, *60*(4), 395–418.

(p. 220) Berrett, D. (2012). Habits of mind: Lessons for the long term. *Chronicle of Higher Education A*, *1*, A4.

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Booth, E. (2009). *The music teaching artist's bible: Becoming a virtuoso educator*. New York: Oxford University Press.

Booth, E. (2012). The habits of mind of creative engagement. Retrieved from **http://ericbooth.net/the-habits-of-mind-of-creative-engagement/**

Borko, H., Liston, D., & Whitcomb, J. A. (2007). Apples and fishes: The debate over dispositions in teacher education. *Journal of Teacher Education*, *58*, 359.

Boyes, K., & Watts, G. C. (2009a). *Developing habits of mind in elementary schools*. Alexandria, VA: ASCD Publishing.

Boyes, K., & Watts, G. C. (2009b). *Developing habits of mind in secondary schools*. Alexandria, VA: ASCD Publishing.

Burgess, J. (2012). The impact of teaching thinking skills as habits of mind to young children with challenging behaviours. *Emotional and Behavioural Difficulties*, *17*(1), 47–63.

Byo, J. (1990). Teaching your instrumental students to listen. *Music Educators Journal*, *77*(4), 43–46.

Byo, J. L. (2004). Teaching problem solving in practice. *Music Educators Journal*, *91*(2), 35.

Byo, J. L. (2014). Applying score analysis to a rehearsal pedagogy of expressive performance. *Music Educators Journal*, *101*(2), 76–82.

Çalik, M., & Coll, R. K. (2012). Investigating socioscientific issues via scientific habits of mind: Development and validation of the scientific habits of mind survey. *International Journal of Science Education*, *34*(12), 1909–30.

Campbell, P., & Scott-Kassner, C. (2013). *Music in childhood: From preschool through the elementary grades*. Boston: Cengage Learning.

Cappadocia, M., & Weiss, J. (2011). Review of social skills training groups for youth with Asperger syndrome and high-functioning autism. *Research in Autism Spectrum Disorders, 5*(1), 70–78.

Clements, A. (Ed.) (2010). *Alternative approaches in music education: Case studies from the field*. Lanham, MD: Rowman & Littlefield Education.

Colquhoun, S. (2017). Informal learning from a band director's perspective. *Media Journal in Music Education*, *1*. Retrieved from **http://hosted.usf.edu/mjme/**

Costa, A., & Kallick, B. (2000). *Habits of mind: A developmental series*. Alexandria, VA: Association for Supervision and Curriculum Development (ASCD) Publishing.

Costa, A. L., & Kallick, B. (2008). *Learning and leading with habits of mind: 16 essential characteristics for success*. Alexandria, VA: ASCD Publishing.

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Costa, A. L., & Kallick, B. (Eds.) (2009). *Habits of mind across the curriculum: Practical and creative strategies for teachers*. Alexandria, VA: ASCD Publishing.

Costa, A. L., & Kallick, B. (2013). *Dispositions: Reframing teaching and learning*. Thousand Oaks, CA: Corwin Press.

Costa-Giomi, E., Flowers, P. J., & Sasaki, W. (2005). Piano lessons of beginning students who persist or drop out. *Journal of Research in Music Education*, *53*(3), 234–47.

Csikszentmihalyi, M. (2011). *Flow: The psychology of optimal experience*. New York: Harper Perennial Modern Classics.

Cuoco, A., Goldenberg, E. P., & Mark, J. (1996). Habits of mind: An organizing principle for mathematics curricula. *Journal of Mathematical Behavior*, *15*(4), 375–402.

Davis, J. (2008). *Why our schools need the arts*. New York: Teachers College Press.

Davidson, J. W., Sloboda, J. A., & Howe, M. J. (1995). The role of parents and teachers in the success and failure of instrumental learners. *Bulletin of the Council for Research in Music Education*, *127*, 40–44.

(p. 221) Detterman, D. K., & Sternberg, R. J. (1993). *Transfer on trial: Intelligence, cognition, and instruction*. New York: Ablex Publishing

Dickey, M. R. (1992). A review of research on modeling in music teaching and learning. *Bulletin of the Council for Research in Music Education*, *113*, 27–40.

Diez, M. E., & Raths, J. D. (2007). *Dispositions in teacher education*. Charlotte, NC: Information Age Publishing.

Dottin, E. S. (2009). Professional judgment and dispositions in teacher education. *Teaching and Teacher Education*, *25*(1), 83–88.

Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, *92*(6), 1087–1101.

Duckworth, A. L., & Seligman, M. E. (2005). Self-discipline outdoes IQ in predicting academic performance of adolescents. *Psychological Science*, *16*(12), 939–44.

Duke, R. A. (1994). Bringing the art of rehearsing into focus: The rehearsal frame as a model for prescriptive analysis of rehearsal conducting. *Journal of Band Research*, *30*(1), 78–95.

Duke, R. A. (1999). Measures of instructional effectiveness in music research. *Bulletin of the Council for Research in Music Education*, *143*, 1–48.

Eisner, E. (2002). *Arts and the creation of mind*. New Haven, CT: Yale University Press.

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Elliott, D. J. (1995). *Music matters: A new philosophy of music education*. New York: Oxford University Press.

Elliott, D. J. (1997). Continuing matters: Myths, realities, rejoinders. *Bulletin of the Council for Research in Music Education*, *132*, 1–37.

Elliott, D. J., & Silverman, M. (2015). *Music matters: A philosophy of music education* (2nd ed.). New York: Oxford University Press.

Epstein, R. M. (2003). Mindful practice in action (II): Cultivating habits of mind. *Families, Systems, & Health*, *21*(1), 11.

Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, *100*(3), 363.

Faircloth, B., & Hamm, J. (2011). The dynamic reality of adolescent peer networks and sense of belonging. *Merrill-Palmer Quarterly*, *57*(1), 48–72.

Fletcher, J., Najarro, A., & Yelland, H. (Eds.). (2015). *Fostering habits of mind in today's students*. Sterling, VA: Stylus.

Fonder, M. (2014). Another perspective: No default or reset necessary—Large ensembles enrich many. *Music Educators Journal*, *101*(2), 89–90.

Frazee, J., & Kreuter, K. (1987). *Discovering Orff: A curriculum for music teachers*. London: Schott & Company Limited.

Gabrielsson, A. (2010). Strong experiences with music. In P. N. Juslin & J. A. Sloboda (Eds.), *Handbook of music and emotion* (pp. 547–74). Oxford: Oxford University Press.

Goldenberg, E. P. (1996). "Habits of mind" as an organizer for the curriculum. *Journal of Education*, *178*(1), 13–34.

Goldenberg, E. P., & Mark, J. (2015). *Making sense of algebra*. Portsmouth, NH: Heinemann.

Gordon, E. (1986). *Manual for the primary measures of music audiation and the intermediate measures of music audiation: Music aptitude tests for kindergarten and first, second, third, and fourth grade children*. Chicago: GIA Publications.

Gordon, E. (2003). *Learning sequences in music: Skill, content, and patterns; A music learning theory*. Chicago: GIA Publications.

Green, L. (2002). *How popular musicians learn: A way ahead for music education*. London: Ashgate Publishing, Ltd.

(p. 222) Green, L. (2009). *Music, informal learning and the school: A new classroom pedagogy*. London: Ashgate Publishing, Ltd.

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Hart, J. T. (2014). Guided metacognition in instrumental practice. *Music Educators Journal*, *101*(2), 57–64.

Haston, W. (2007). Teacher modeling as an effective teaching strategy. *Music Educators Journal*, *93*(4), 26–30.

Hetland, L., Winner, E., Veenema, S., & Sheridan, K. (2007). *Studio thinking: The real benefits of visual arts education*. New York: Teachers College Press.

Hetland, L., Winner, E., Veenema, S., & Sheridan, K. (2013). *Studio thinking 2: The real benefits of visual arts education*. New York: Teachers College Press.

Heuser, F. (2011). Ensemble-based instrumental music instruction: Dead-end tradition or opportunity for socially enlightened teaching. *Music Education Research*, *13*(3), 293–305.

Heuser, F. (2015). Pipe dreams, ideals and transformation in music education: Lessons from the field. *Research Studies in Music Education*, *32*(4), 215–31.

Hogan, J., Hetland, L., Jaquith, D., & Winner, E. (2018). *Studio thinking from the start: The K-8 art educator's handbook*. New York: Teachers College Press.

Hogan, J., & Winner, E. (2015, August). *Ensemble habits of mind: What is actually taught in high school music ensembles? Preliminary results*. Poster presented at American Psychological Association conference, Toronto, Ontario.

Huenink, J. (2012). Sing it, hear it, play it! Ear training for middle school students. *Teaching Music*, *10*(1), 56–61.

Johnson, D. (2009). More than just minutes: Using practice charts as tools for learning. *Music Educators Journal*, *95*(3), 63–70.

Kennedy, M. A. (2002). "It's cool because we like to sing:" Junior high school boys' experience of choral music as an elective. *Research Studies in Music Education, 18*(1), 22–36.

Kohn, A. (1999). *Punished by rewards: The trouble with gold stars, incentive plans, A's, praise, and other bribes*. New York: Houghton Mifflin Harcourt.

Lucas, B. (2016). A five-dimensional model of creativity and its assessment in schools. *Applied Measurement in Education*, *29*(4), 278–90.

Lucas, B., Claxton, G., & Spencer, E. (2014). Progression in student creativity in school: First steps towards new forms of formative assessments. *Contemporary Readings in Law and Social Justice*, *6*, 81.

Lunney, M. (2003). Critical thinking and accuracy of nurses' diagnoses. *International Journal of Nursing Knowledge*, *14*(3), 96–107.

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Mas-Herrero, E., Marco-Pallares, J., Lorenzo-Seva, U., Zatorre, R. J., & Rodriguez-Fornells, A. (2013). Individual differences in music reward experiences. *Music Perception: An Interdisciplinary Journal*, *31*(2), 118–38.

Miksza, P., Prichard, S., & Sorbo, D. (2012). An observational study of intermediate band students' self-regulated practice behaviors. *Journal of Research in Music Education*, *60*(3), 254–66.

Morrison, S. (2001). The school ensemble: A culture of our own. *Music Educators Journal*, *88*(2), 24–28.

NAMM Foundation. (2009). New Gallup survey by NAMM reflects majority of Americans agree with many benefits of playing musical instruments. Retrieved from **http://www.namm.org/news/press-releases/new-gallup-survey-namm-reflects-majority-americans**

National Association for Music Education. (2015). Broader minded. Retrieved from **https://nafme.org/broader-minded-beat-how-much-does-talent-matter/**

(p. 223) National Core Arts Standards: A Conceptual Framework for Arts Learning. (2014). Retrieved from **http://www.nationalartsstandards.org/content/conceptual-framework**

Nierman, G. E. (2015). From the president's keyboard: Strategic priorities—Focusing on standards and student dispositions. *Music Educators Journal*, *102*(1), 10.

Oare, S. (2011). Practice education: Teaching instrumentalists to practice effectively. *Music Educators Journal*, *97*(3), 41–47.

Palmer, E. (2011). *Well-spoken: Teaching speaking to all students*. Portland, ME: Stenhouse Publishing.

Parker, E. (2014). The process of social identity development in adolescent high school choral singers: A grounded theory. *Journal of Research in Music Education*, *62*(1), 18–32.

The Partnership for 21st Century Skills. (n.d.). Life and career skills. Retrieved from **http://www.p21.org/our-work/resources/for-educators**

Perkins, D. N., Jay, E., & Tishman, S. (1993). Beyond abilities: A dispositional theory of thinking. *Merrill-Palmer Quarterly*, *39*(1), 1–21.

Perkins, D. N., & Salomon, G. (1989). Are cognitive skills context-bound? *Educational researcher*, *18*(1), 16–25.

Perkins, D. N., & Tishman, S. (2001). Dispositional aspects of intelligence. In J. Collick, S. Messick, & U. Schiefele (Eds.), *Intelligence and personality: Bridging the gap in theory and measurement* (pp. 233–57). New York: Psychology Press.

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Pitts, S. E., Davidson, J. W., & McPherson, G. E. (2000). Models of success and failure in instrumental learning: Case studies of young players in the first 20 months of learning. *Bulletin of the Council for Research in Music Education*, (146), 51–69.

Polk, J. A. (2006). Traits of effective teachers. *Arts Education Policy Review*, *107*(4), 23–29.

Prichard, S. (2012). Practice makes perfect? Effective practice instruction in large ensembles. *Music Educators Journal*, *99*(2), 57–62.

Regelski, T. A. (2013). Re-setting music education's "default settings". *Action, Criticism, and Theory for Music Education*, *12*(1), 7–23.

Ritchhart, R., Church, M., & Morrison, K. (2011). *Making thinking visible: How to promote engagement, understanding, and independence for all learners*. Malden, MA: John Wiley & Sons.

Ritchhart, R., & Perkins, D. N. (2005). Learning to think: The challenges of teaching thinking. In K. Holyoak & R. G. Morrison (Eds.), *The Cambridge handbook of thinking and reasoning* (pp. 775–802). Cambridge: Cambridge University Press.

Root-Bernstein, R. S., & Root-Bernstein, M. M. (2013). *Sparks of genius: The thirteen thinking tools of the world's most creative people*. New York: Houghton Mifflin Harcourt.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, *25*(1), 54–67.

Schafer, R. M. (1976). *Creative music education: A handbook for the modern music teacher*. New York: Schirmer Books.

Schellenberg, E. G. (2003). Does exposure to music have beneficial side effects? In I. Peretz & R. J. Zatorre (Eds.), *The cognitive neuroscience of music* (pp. 430–48). Oxford: Oxford University Press.

Spencer, E., Lucas, B., & Claxton, G. (2012). *Progression in creativity: Developing new forms of assessment*. Newcastle, UK: Creativity, Culture and Education, and Centre for Real-World Learning.

Steinkuehler, C., & Duncan, S. (2008). Scientific habits of mind in virtual worlds. *Journal of Science Education and Technology*, *17*(6), 530–43.

(p. 224) Stevens, S. (2003). Creative experiences in free play. *Music Educators Journal*, *89*(5), 44–48.

Thibeault, M. D. (2015). Music education for all through participatory ensembles. *Music Educators Journal*, *102*(2), 54–61.

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Tillery, A., Varjas, K., Roach, A., Kuperminc, G., & Meyers, J. (2013). The importance of adult connections in adolescents' sense of school belonging: Implications for schools and practitioners. *Journal of School Violence*, *12*(2), 134–55.

Tishman, S., Jay, E., & Perkins, D. (1993). Teaching thinking dispositions: From transmission to enculturation. *Theory into Practice*, *32*, 147–53.

Tishman, S., Perkins, D., & Jay, E. (1995). *The thinking classroom: Learning and teaching in a culture of thinking*. Needham Heights, MA: Allyn & Bacon.

Townsend, A. (2003). Stop, look, listen! For effective band rehearsals. *Teaching Music*, *10*(4), 22–25.

Weikart, P. S. (2006). *Teaching movement & dance: A sequential approach to rhythmic movement*. High/Scope Foundation.

Williams, D. A. (2007). What are music educators doing and how well are we doing it? *Music Educators Journal*, *94*(1), 18–23.

Williams, D. A. (2011). The elephant in the room. *Music Educators Journal*, *98*(1), 51–57.

Wineburg, S. (2003). Teaching the mind good habits. *Chronicle of Higher Education*, *4*, 11–49.

Winner, E., & Cooper, M. (2000). Mute those claims: No evidence (yet) for a causal link between arts study and academic achievement. *Journal of Aesthetic Education*, *34*(3–4), 11–75.

Winner, E., Goldstein, T., & Vincent-Lacrin, S. (2013). *Art for art's sake? The impact of arts education*. Paris: OECD Publishing.

Wolvin, A. (2012). Listening in the general education curriculum. *International Journal of Listening*, *26*(2), 122–28.

Wolvin, A., & Coakley, C. (2000). Listening education in the 21st century. *International Journal of Listening*, *14*(1), 143–52.

Woody, R. H. (2001). Learning from the experts: Applying research in expert performance to music education. *Update: Applications of Research in Music Education*, *19*(2), 9.

Worthy, M. D. (2003). Rehearsal frame analysis of an expert wind conductor in high school vs. college band rehearsals. *Bulletin of the Council for Research in Music Education*, *156*, 11–19.

Jillian Hogan

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019

Jillian Hogan is a PhD student in developmental psychology in the Arts & Mind Lab at Boston College. She holds an MM in music education and a BM in clarinet performance from Boston Conservatory and has additional training in Montessori and Orff-Schulwerk approaches. In her research, she uses mixed methods to investigate what we learn through arts education and how those findings align with public perceptions. Her primary interest is the teaching and learning of habits of mind in visual art and music education, which is informed by teaching for six years in schools that specialize in gifted, inclusion, and autism spectrum disorder populations. She is an author of the book Studio Thinking from the Start: The K-8 Art Educator's Handbook (2018) (www.jillhoganinboston.com).

Ellen Winner

Ellen Winner is professor and chair of psychology at Boston College and senior research associate at Project Zero, Harvard Graduate School of Education. She directs the Arts and Mind Lab, which focuses on cognition in the arts in typical and gifted children as well as adults. She is the author of over one hundred articles and three books—Invented Worlds: The Psychology of the Arts (1982); The Point of Words: Children's Understanding of Metaphor and Irony (1988); and Gifted Children: Myths and Realities (1996)—and coauthor of Studio Thinking: The Real Benefits of Visual Arts Education (2007) and Studio Thinking 2: The Real Benefits of Visual Arts Education (2013). Soon to appear are Studio Thinking for Elementary Schools and How Art Really Works. She received the Rudolf Arnheim Award for Outstanding Research by a Senior Scholar in Psychology and the Arts from APA Division 10 in 2000.

PRINTED FROM OXFORD HANDBOOKS ONLINE (www.oxfordhandbooks.com). © Oxford University Press, 2018. All Rights Reserved. Under the terms of the licence agreement, an individual user may print out a PDF of a single chapter of a title in Oxford Handbooks Online for personal use (for details see Privacy Policy and Legal Notice).

Subscriber: OUP-Reference Gratis Access; date: 09 July 2019