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## **Music Listening and Critical Thinking**

Teaching Using a Constructivist Paradigm

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# Music Listening and Critical Thinking

## Teaching Using a Constructivist Paradigm

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### Abstract

*Music, a universal human endeavor, offers a unique perspective on studying the humanities. Studying music combines the intellectual and emotional meaning listeners make from music, engaging them in aesthetically focused-activities. In this article, the benefits of teaching music using a methodology based on critical thinking are discussed. Additionally, the nature of critical thinking as an instructional methodology is explored from multiple perspectives.*

*To elevate intellectual standards and to effect a qualitative change in thinking, critical thinking advocates have encouraged students to think for themselves by guiding students' reflection on their own experiences, by developing listening as a critical thinking skill, and by asking probing questions. To reflect the fast-paced technological changes in contemporary society and education, teachers should impart thinking skills instead of mere information. As Whitehead suggested, the real goal of education is the development of thought processes instead of the accumulation of information. Constructivism, an approach emphasizing the meaning students create in the process of education, is also examined in terms of musical settings.*

*While human beings are naturally predisposed to create meaning and construct concepts, particular ways in which we make sense of the world are learned. From constructivist paradigms to educational interventions, critical thinking is discussed as a movement based both on theory and applied techniques. Among the goals of this movement is the responsibility to educate independent thinkers and autonomous learners who actively make their own meaning of the world. Implications for understanding music, critical thinking, and the humanities in general conclude this paper.*

**Keywords:** Music Listening, Critical Thinking, Constructivism, Education

### Introduction

Music, a part of every culture on Earth (Etzorn, 1989), plays a meaningful role in both human society and well-being (VanderArk & Ely, 1991). As such, music offers a unique perspective on studying the humanities. Specifically, studying and experiencing music include the intellectual and emotional meaning listeners make from music, engaging listeners in aesthetically focused-activities, and learning as an act of transformation.

In the following article, the importance of music listening and music listening instruction as a representative of music itself is examined. Critical thinking is also examined in terms of theoretical perspectives and applied pedagogical studies in musical contexts. The connection between music listening and critical thinking will be developed using several different theoretical perspectives. Finally, results of related research studies in which students engaged in making meaning from music listening using a constructivist paradigm are examined along with implications for understanding music, critical thinking, and the humanities in general.

### Music Listening

Listening to music is an essential part of any musical activity (Hartshorn, 1957), pervades each of the American "National Standards for Music Education" as contained in the 1994 *Standards for Arts Education* (Reimer, 2003), and is a prerequisite for musical pursuits (Madsen & Madsen, 1970). Live performances, radio, television, analog recordings, and digital media provide multiple opportunities for music listening. The purposes for listening to music are varied, including intrinsic enjoyment, self-motivation, and accompaniment for daily activities (personal interviews, March 30, 2003). Among the most prevalent reasons that people choose to listen to music are for entertainment, to create a mood, and for ceremonial purposes (O'Brien, 1987). A majority of students, over two hundred, rank listening to music first among sixty-two physical, social, and recreational activities enjoyed during leisure time (Fitzgerald, Joseph, Hayes, & O'Reagan, 1995). Even though many secondary students do not actively perform music, most students regularly listen to and purchase music (Boal-Palheiros & Hargreaves, 2001). Furthermore, as evidence of their interest in listening to music, American consumers



spend approximately \$40 billion annually on the purchase of recorded music and listening equipment worldwide according to 2001-2002 data reported by the Recording Industry Association of America. The variety of reasons for listening to music as well as the amount of time and money spent listening support the idea that people value listening to music.

During the second half of the twentieth century, listening to music has been shown to have increasing importance in the lives of adults and children (Boal-Palheiros & Hargreaves, 2001). Multimedia and digital technologies have changed the nature of listeners' musical experiences and expanded the range of listening possibilities. Since music has become more accessible to listeners, more often, and in more places, musical experiences have become more individualized (Frith, 1996), as reflected in listeners' personal choices of music. Listeners can choose from many musical styles and genres, spanning the gamut from classical and romantic pieces to rock and rap music. Even within a given genre of music, listeners can select a recording from the multitude of recordings available.

While listening to music, the listener is constantly making judgments and decisions, consciously or unconsciously, about what is being heard. These decisions include personal likes and dislikes, as well as preferences for a particular musical style and performance medium. Listeners also make decisions about how to direct their focus of attention during listening, a central issue in developing listening skills (Prince, 1972). For example, college students have reported attending to the lyrics, the melody, the rhythm, and the bass line in their favorite music (personal interviews, March 30, 2003). The act of consciously choosing to listen to music involves a considerable number of thought processes and decisions. Understanding the human thought process during music listening can provide invaluable insights into the process of musical thinking. Furthermore, as the anthropologist Levi-Strauss asserted, "if we can explain music, we may find the key for all human thought" (cited in Gardner, 1983, p. 123).

Listening to music may involve thinking about musical style, patterns, and meaning. Serafine (1983, 1986) suggested that listening involves thinking about music in active, cognitive processes, in which listeners develop their own understandings of music. She proposed that specific cognitive processes are generic (independent of musical style) and have a direct correlation to patterns or organization in the music. In her research, she examined cognitive operations in temporal and non-temporal processes. She found that children of different developmental levels as well as adults process music in different ways. Her work has raised important questions about the developmental nature of music listening and students' musical understanding.

## **Music Listening and Critical Thinking**

Understanding music listening is of fundamental importance in understanding how music is experienced. Bamberger (1972, 1982) suggested that understanding music and learning music are both acts of problem solving through listening. Bamberger (1991) also proposed that elementary-aged students organize sound as it occurs. Listening, then, is a process during which listeners make meaning from sounds and develop ways of understanding music, including developing new ways of understanding the same music (Bamberger, 1994). Bamberger's work in music cognition included repeated listenings to music that resulted in conceptually reorganizing the listener's perception and accommodating new understandings of the same music. Metacognitive processes during listening, or "reflection-in-action" (Bamberger, 1991), involved alternatively reflecting from an experience and reflecting on an experience. Bamberger's work includes the exploration of musical self-knowledge and intuitions, beginning from the premise that listeners' knowledge of music is based on lifelong experiences with music. In *Developing Musical Intuitions* (2000), Bamberger asserted that music is what we make of it, because each listener creates his or her own musical understanding through imagination and experience.

Despite advances in the study of music listening and music cognition, the act of listening to music has often taken a secondary role in music education. Music educators have often focused on performance preparation and instrumental skills through drill and practice instead of developing listening skills. Music listening seldom plays an integral role in daily music education because of the lack of teachers' training and resources, pressures to prepare for performances, and inadequate means of assessment (Bundra, 1993). Haack wrote, "music listening is among the last and least studied aspects of music" (1992, p. 451). Learning to play instruments, to read and write notation, and to perform in ensembles often occupies the majority of music instructional time; however, some scholars believe that instrumental performance skills and repeated practice "not only greatly impede the growth of musical sensitivity, they [also] distort and obscure the goals of musical development" (Gaston, 1963, p. 64). Madison (1966) also noted that reliable evidence of music listening skills is difficult to obtain, and that listening is consequently often overlooked or neglected as an instructional objective.

Yet listening skills are an essential part of all other musical skills, because the primary purpose of music is to be heard and shared (Haack, 1992). Baldwin (1936) and Reimer (1989, 2003) also support the importance of simply listening to music, as it allows for music appreciation and musical experience



without the concerns and limitations of performance. The ability to listen to music intelligently can be taught, especially using structured pedagogical approaches (Haack, 1969). At the end of the twentieth century, the general music movement began to focus more attention on the learning and teaching of listening skills (Haack, 1992); music educators made considerable progress by including analytical and perceptive listening activities and lessons in music series textbooks and curriculum guides (Haack, 1990). If the central challenge and contribution of general music curricula is to provide musical experiences that are “intensely involved, perceptive, feelingful, creative, richly significant, and satisfying” (Reimer, 1970, p. 120), then music listening is an important educational goal that deserves attention in the classroom. To this end, an innovative pedagogy in the form of critical thinking offers promise for advancing both teachers’ and students’ musical understanding.

### **Critical Thinking**

In the twenty-first century, listeners have unprecedented access to a wealth of music and information via the internet and other digital media. As a result, discriminating consumers need to select from an increasing amount of music and information according to their personal preferences. In response to the volume of recorded music and information, listening to music has become a passive activity (O’Brien, 1987), and “children are learning *not* to listen” [*italics in original*] (Sims, 1990, p. 38). Similarly, Meyers (1986) asserted that students’ abilities to understand and process information have not kept pace with the amount of resources identified in his text on teaching critical thinking skills. As ever-advancing technology is likely to provide even greater amounts of information in the coming years, music educators’ pedagogical focus needs to shift from content to cognition. To reflect technological changes, teachers should impart thinking skills instead of mere information (Knowles, 1980); in other words, “in an age where textbooks are often outdated before they are off the press . . . the goals and aims of education inevitably must change” (Meyers, 1986, pp. 1-2). Whitehead suggested that the real goal of education is the development of thought processes instead of the accumulation of information (1929/1967). While human beings are naturally predisposed to create meaning and construct concepts (Hunt, cited in Meyers, 1986), Meyers wrote, “the specific ways in which we make sense of the world are learned” (1986, p. 11).

In education, critical thinking and its instruction have taken many forms. These include both generalizable and context-specific approaches that embrace self-constructed meaning and discovery (Kim, 1993; Kurfiss, 1988; Meyers, 1986). Using the term “reflective thinking,” Dewey (1933) first

described the active and persistent consideration of belief or knowledge. His writings served to provide the basis for subsequent authors who defined critical thinking in a variety of ways.

Along with increased access to music and information, social and technological changes have demanded a higher quality of thought at the turn of the twenty-first century to understand and apply the wealth of available information (Paul, 1993). Critical thinking, then, is “the essential foundation for adaptation to the everyday personal, social, and professional demands of the twenty-first century” (Paul, 1993, p. xi). To elevate intellectual standards and to effect a qualitative change in thinking, critical thinking advocates such as Paul have encouraged students to think for themselves by guiding students’ reflection on their own experiences, by developing listening as a critical thinking skill, and by asking probing questions. Learning to listen to music, however, has not been explored by music educators using such a pedagogy.

As discussed above, the instruction of music listening skills has traditionally taken a diagnostic and prescriptive approach including visual guides and knowledge-level questions often related to music theory. For example, in *Music for Young Americans* (1966), Berg recommended teaching program music in terms of composers’ feelings suggested by their use of melody, rhythm, form, and other musical elements; authors such as Berg gave few opportunities for students to express their own thoughts or feelings in response to music listening. Textbook authors approached music listening as music appreciation, including the acquisition of musical vocabulary and an understanding of music in historical contexts.

A contrasting approach to music listening instruction, based on verbal descriptions, emphasized the listener’s personal response to music listening (Bamberger, 2000). By highlighting the importance of listening experiences apart from theoretical and historical information, Bamberger and Brofsky (1975) stimulated the listener’s powers of critical observation and independent judgment. In active listening, as advocated by Bamberger and Brofsky, the listener’s perspective of the music is “personally involved, questioning, and critical” (p. xix). In other words, Bamberger and Brofsky prescribed no fixed way of listening but encouraged the listener to discover personally relevant meaning in the music. Instead of relying on terminology and music theory to inform the listener, Bamberger (2000) also advocated addressing musical thinking through inquiry and analysis. Such an approach to music listening and music education lends itself to critical thinking and higher order thinking skills. Higher order thinking, including analysis, synthesis, and evaluation (Bloom, 1956), provides a theoretical basis for critical thought (Olson, 2000) and can be applied to music listening activities in the classroom.

For the purposes of this discussion, critical thinking in music may be defined as musical understanding through reflection and participation in a constructivist model of education. Critical thinking skills used to developing musical understanding includes: analyzing, synthesizing, comparing and contrasting, developing criteria for judgment, sequencing, making connections, recognizing patterns, and evaluating musical information through active listening, reasoning, and reflection based upon affective responses and prior musical experiences.

Critical thinking is both a major goal in education (D'Angelo, 1971) as well as a universal term in educational theory and practice (Richardson, 1998). The process of critical thinking begins with comprehending information that has been presented. Critical thinking includes thinking for one's self, using inductive and deductive reasoning skills (Bloom, 1956; Ennis, 1962; Sternberg, 1985) and is "reasonable reflective thinking that is focused on deciding what to believe or do [with newly acquired information]" (Ennis, 1987, p. 10). Instruction in critical thinking, as defined in this study, assists students in learning new material and encourages students to think for themselves.

Great thinkers including Plato, Aristotle, and Descartes advocated an approach to education based on reason and inquiry using reflective, "Socratic" questions based on the student's reasoning and thinking abilities. By using reflective questions, scholars and teachers developed students' minds through logical reasoning. The development of inductive and deductive reasoning skills gave rise to the modern definition of critical thinking (Black, 1952).

Meyers (1986) suggested critical thinking is the ability to generalize and invent new possibilities, while Brookfield (1987) characterized critical thinking as questioning assumptions underlying habitual ways of thinking. Siegel (1988) suggested that critical thinking requires understanding the role of reason in actions and beliefs, while Paul (1993) articulated five dimensions of critical thinking (i.e. elements of reasoning, intellectual abilities, modes of reasoning, traits of mind, and intellectual standards). Two broad components of critical thinking emerge from an analysis of the various critical thinking definitions: the abilities necessary to think critically, and the attitudes and habits that characterize intellectual independence (Younker, 2002).

Critical listening, a skill involved in critical thinking, is an active process (Paul, 1993) which could positively affect students' music listening skills. The processes of comparing, evaluating, reflecting, judging, and classifying have been reported as evidence of critical thinking by Bundra (1993) and Richardson (1998) in musical contexts. While often applied in other disciplines, critical

thinking processes may also be utilized in musical contexts for a variety of classroom music listening activities. Music listening, therefore, may be one form of learning particularly well suited to constructed meanings and reflection through critical thinking.

The issue of generalizability is a central theme in the critical thinking literature (Younker, 2002). Ennis (1987) offered a definition of critical thinking generalizable to multiple subject areas. He wrote that critical thinking is "reasonable reflective thinking that is focused on deciding what to believe or do" (p. 10). What may be considered sound reasoning in one field, however, may not be valid in another (McPeck, 1981, 1990). McPeck instead suggested that critical thinking implies specific content knowledge and is the appropriate use of "reflective skepticism" (1981, p. 7). Similarly, Siegel (1997) suggested that there are two types of thinking abilities: subject-neutral and subject-specific; both types include elements of logic and reason applicable to different subjects, as well as judgments and evaluations dependent on specific content knowledge. While subject-neutral principles employ a logical approach to verify the correctness of an answer, subject-specific principles use a psychological approach to investigate the process of determining an answer (McDaniel & Lawrence, 1990).

In music, Woodford (1995) suggested that critical thinking encompasses elements of both generalizable and subject-specific approaches. Other researchers have regarded critical thought processes involved in musical contexts as higher-order thinking skills. Artistic disciplines are particularly well suited to promote higher-order thinking skills (Paul, 1985). Because thoughts are not emotion-free nor are emotions thoughtless (Dressel, 1988), both affect and cognition play a part in higher-order thinking, especially in the arts.

The idea of critical thinking instruction in music education was supported in *Dimensions of Musical Thinking* (Boardman, 1989). This volume was published in response to *Dimensions of Thinking: A Framework of Curriculum and Instruction* (Marzano et al., 1988), which addressed the concern that high school graduates were not sufficiently prepared to use higher-order thinking skills independently. In Marzano's text, the authors identified one goal of education as the development of competent thinkers who can learn and make use of knowledge independently. Musical independence is a central goal of music education (Boardman, 1989; Wiggins, 2001), and critical thinking is essential ingredient for an education supporting intellectual autonomy and self-determination (Paul, 1985). Critical thinking instruction in music listening is therefore an important avenue for developing competent and independent musical thinkers.

In “The Behavior of Listeners” (1980) and “The Acquisition of Music Listening Skills” (1992), Haack reviewed over two hundred studies on music listening and formulated a number of conclusions about this body of research. Haack (1980) summarized music listening research in four major areas: physiological (including verbal), psychological, sociological, and developmental-educational. The majority of music listening research has been descriptive or experimental, usually taking a quantitative, positivistic approach. Summarizing his findings, Haack (1992) highlighted “the importance of verbal imagery and the value of verbal skills in teaching and learning about music listening” (p. 461). Particularly important to the current discussion is Haack’s finding that there is an increased interest among researchers in verbal aspects of teaching music listening skills, as well as the expectation that verbal responses to music are valuable resources for future research. Of particular interest is Haack’s recommendation that future studies strengthen cooperation between researchers and educators to result in more practical applications of empirical findings.

Haack concluded that several findings were common to both his 1980 and 1992 reviews of literature. Specifically relevant to the current discussion is the observation that, “there remains a timely need for applied research into the three C’s of cognitive style, creativity, and critical thinking vis-à-vis music-listening behaviors” (1992, p. 462). Considering the existing literature on music listening research, there is an opportunity to investigate instructional methods that impart “truly imaginative, thoughtful, and feelingful listening” (p. 462). Haack’s findings are consistent with other researchers’ findings on music listening pedagogy and recommendations for classroom applications, including those offered by Reimer.

Reimer’s (1970) theoretical view of music listening as an active process is also important to the current discussion. Reimer described the act of listening as an active process during which listeners explore and analyze the music for themselves. According to Reimer, perceiving or listening intensely is a creative process for listeners, and they are more affected by the expressive qualities of the music with each successive listening. In other words:

the experience of the work is both a sharing and a discovering. In this sense, it is also a *creative* experience for the perceiver, in that the new experiences of feeling are made possible as he grasps more and more of the work’s expressive subtleties [*italics in original*](p. 67).

Reimer also indicated that using verbal descriptions and conceptual explanations could enhance a listener’s experience and understanding of music. He wrote, “descriptive use of language, or

concepts, is an essential tool for heightening awareness about the way music works” (p. 109).

By proposing an analytical view of the factors influencing the listening experience, LeBlanc (1980) suggested that the way listeners process music has an important impact on the overall listening experience. LeBlanc proposed an eight-level hierarchy of factors influencing the listening experience. LeBlanc placed the listener’s mental processes on the third level from the top, above musical training, auditory sensitivity, basic attention, and numerous other factors. At this level of the hierarchy, he suggested that listeners formulate and tests hypotheses, imagine extramusical associations, and prepare to make judgments about the music being heard. The effect of enhancing listeners’ thought processes may positively influence their listening experience more directly than many other factors. LeBlanc’s hierarchy, therefore, supports the potential impact and influence that Critical Thinking Instruction has on music listening.

In a developmental study, Bundra (1993) also investigated factors relating to students’ music listening experiences by studying verbal responses to music listening examples. Bundra used verbal protocol analysis (thinking out-loud) to collect descriptive data on differences in children’s reflections on music listening by age, gender, and musical background. She found that children were able to describe their own thoughts while listening to music, to make and express judgments about the music, and to articulate their ideas about the listening process.

Bundra’s findings are consistent with those made by Richardson (1988) who also studied children’s mental processes during music listening. Richardson found that during music listening experiences, children engaged in prediction, comparison, evaluation, reflection, and recognition of musical material. She suggested that four distinct, nonlinear processes contribute to making musical judgments during music listening, i.e. “expectation, comparison, prediction, and evaluation” (p.134). Using a paradigm of four roles to describe the ways expert musicians think reflectively in a musical experience (i.e. performer, conductor, arranger, and listener/critic), Richardson based her definition of musical thinking on Dewey’s idea of reflective thinking. In reflective thinking, Dewey (1933) identified a fund of experiences, which provides a basis of prior academic knowledge, practical experience, affective reactions, and imagination. Accordingly, Richardson termed her verbal protocol analysis methodology as a “philosophical, speculative approach” (p. 28). In a later study, Richardson (1998) found common thinking skills among participants from three different populations while listening to music. She found that classifying, elaborating, comparing, predicting, and evaluating were among the cognitive skills associated with

music listening. Richardson advocated using questioning strategies to encourage students to label, identify, describe, and articulate their thinking while listening to music.

Music listening is an important component of general music instruction (Baldrige, 1984). In his study of music listening activities, however, Baldrige reported that most music teachers assumed their students were listening as opposed to assigning specific listening objectives. Similarly, Crook, Reimer, and Walker (1981) emphasized the need for effective music listening instruction. Addressing students in the Silver Burdett text *Music*, they wrote, "sometimes, when you listen, the music fills your thoughts and your feelings. That's the way composers and performers hope you will listen to their music, *musically*. But sometimes listening is *nonmusical*" [italics in original] (p. 108). Tait and Haack (1984) highlighted the importance of instruction and its effect on enhancing students' music listening experiences. Tait and Haack described sharing feelings and thoughts through the medium of music. Nye (1979) and Madsen and Kuhn (1978), however, reported that music listening instruction often emphasized the elements of music instead of student responses to music.

In addition, other researchers have reported experimental findings on music listening while investigating contrasting methods of music listening instruction. In one such experimental study on fifth-grade students' verbal responses to music, Johnson (2003a) reported that critical thinking instruction (CTI) had a significant and positive effect on fifth-grade students' written responses to music listening examples as compared to activity-based instruction (ABI) instruction without critical thinking questions. Subjects' responses were analyzed as either musical terms, affective, or associative responses; responses were scored using a word-count methodology by three independent judges. CTI subjects demonstrated greater gains in musical term, associative, and total response scores from pretest to posttest than did ABI subjects;  $p = 0.001$ ,  $0.004$ , and  $0.001$ , respectively. After sixteen lessons, CTI subjects demonstrated higher musical term, affective, associative, and total response scores than did ABI subjects. Significant main effect within group differences were also found such that CTI subjects demonstrated significantly higher musical term, affective, associative, and total response scores on the posttest as compared to the pretest, while no significant main effect differences were found in ABI subjects' response scores. Implications include designing music listening instruction to incorporate critical thinking skills.

Students' descriptions of music during a music listening task were also investigated by Johnson (2003b) in a qualitative study. Johnson presented fifth-grade instrumentalists with a problem-solving task based on music listening. The participants sorted fifteen short musical examples into groups

without any further instruction from the researcher. Four categories of descriptors emerged from the participants' written and verbal responses to the music (i.e. musical terms, affective, associative, and other). Examples of each category included "fast," "slow," and "loud" in the musical term category; "nice," "pretty," and "scary" in the affective category; "Alice in Wonderland," "riding in a car," and "Louisiana trip" in the associative category; and "different" in the other category. Even though musical terms were most often used as descriptive and sorting data, Johnson suggested that affective and associative descriptors of music be included in music listening instruction. Johnson's investigation is relevant to the current discussion with respect to the ways musical examples are conceived and organized by listeners. The descriptors provided by the subjects in Johnson's study served as the model for the four dependent measures on the "Listening and Thinking" instrument (i.e. Musical Term, Affective, Associative, and Total response scores). In addition, Johnson used a verbally based methodology, which is relevant to the current discussion of music, education, and the humanities in general. Because his study linked verbal descriptions of music listening to a constructivist approach, Johnson encouraged students to express their own thoughts and interpretations of music in creative and personally-relevant ways.

Implications of previous studies include recognizing that music listening instruction has historically been based on acquiring musical terminology without much regard for reflective or higher-order thought processes. Research in music listening instruction has focused on teaching technical music vocabulary, open-ended essay responses, and the effect of participation in performing ensembles. As Whitaker (1996) wrote, there is a need to move beyond academic knowledge and other prerequisite experiences for successful problem solving (e.g. affective reactions and imagination). There is also a need to challenge students with problems that have multiple solutions and demand more from them than rote performance or the application of technique "to encourage thoughtful, reflective musical autonomy in our students, regardless of age level" (Whitaker, 1996, p. 13). Music educators advocating for curricular inclusion must demonstrate that music involves sequential study, not merely activities (Lehman, 1994). In addition to creating, presenting, and perceiving in the arts, essential components of the educational process are analysis and synthesis. These processes support higher-order thinking and promote the experience of the arts as expressions of critical thought.

## Conclusion

In conclusion, the importance of music and music listening in terms of constructivist instructional strategies were examined in the above discussion. The experience of listening to music is a central component of the human experience. In particular, the way listeners engage with music plays a central role in the overall musical experience. In this discussion, music listening as a constructivist experience and instructional strategies were examined with particular attention to critical thinking as an effective avenue to increase listeners' perceptions and responses. Both music listening and written descriptors of music were combined to generate a unique perspective on two distinct yet related pursuits in the humanities, i.e. music and language.

Researchers have investigated generalizable critical thinking skills as well as their applications in music and related fields. With an appreciation for the complexity of thought processes, several authors have underscored the importance of context in critical thinking. The definition of critical thinking and its generalizability were discussed as two central

issues from numerous scholars' perspectives. From constructivist paradigms to educational interventions, critical thinking was also discussed as a movement based both on theory and applied techniques. Among the goals of this movement is the responsibility to educate independent thinkers and autonomous learners (Paul, 1993).

In summary, the nature of musical thought may be inherently linked to creating meaning in the listener's experience. Therefore, a pedagogical approach making use of higher-order thinking and constructivist strategies may result in more effective teaching of music and music listening. Experimenting with music as a context for reflective thinking, researchers have developed new understandings regarding pedagogy and musical problem solving. As critical thinking may be a useful tool in music and because educating for musical independence is a central goal of music education (Boardman, 1989; Wiggins, 2001), critical thinking instruction may assist listeners to think autonomously in music. Further research is necessary to explore the efficacy of critical thinking instruction in music listening.

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