The Effect of Critical Thinking Instruction on Verbal Descriptions of Music

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Bio

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Author's Note

This article is based on the author's doctoral dissertation, "The effect of critical thinking instruction in music listening on fifth-grade students' verbal descriptions of music," completed at the University of Arizona in 2003.

Abstract

The purpose of this study was to determine the effect of critical thinking instruction on music listening skills of fifth-grade students as measured by written responses to music listening. The researcher compared instruction that included opportunities for critical thinking (Critical Thinking Instruction, CTI) with parallel instruction without critical thinking opportunities (Activity-Based Instruction, ABI). The same music teacher delivered both instructional treatments concurrently in a series of sixteen, forty-five minute classroom lessons. Two randomly-assigned, intact classes of participants (n = 41 and 40) comprised the CTI and ABI treatment groups, respectively. Three independent judges scored participants' pretest and posttest responses using a researcher-designed instrument. Using a multivariate analysis of variance (MANOVA), the researcher found a significant test by treatment interaction. The post hoc analysis indicated that while the CTI participants scored higher on the posttest as compared with the pretest, ABI participants demonstrated no significant differences by test. Readers should note the larger than expected standard deviations when considering the positive effects of the CTI treatment . Implications include recommendations for future research and for designing music listening lessons to incorporate critical thinking skills in classroom music instruction.

Music listening is a meaningful activity for people throughout the world. Furthermore, it is of primary importance to music education, essential to each of the nine "National Standards for Music Education" (MENC—The National Association for Music Education, 1994), and fundamental to other musical experiences (Hartshorn, 1957; Kerchner, 2009; Reimer, 2003). In practice, however, listening to music may be neglected in favor of performance skills in music classrooms and ensembles (Haack, 1992). Boal-Palherios and Hargreaves (2001) found that listening skills addressed in schools were taught didactically with students expected to acquire music vocabulary, and some school listening instruction has been found to discourage students from participating in music study (Williamson, 2005). Instead of the direct methods music teachers often use to teach listening skills at the knowledge level (Sheldon & DeNardo, 2005), more indirect instruction taking a constructivist approach emphasizes the listener's personal responses to musical experiences. Rather than relying on terminology and music theory to inform the listener, teachers can promote thinking in musical contexts by using inquiry and analysis (Bamberger, 2000). While students are naturally predisposed to create meaning and construct concepts (Hunt, 1982), Meyers wrote, "the specific ways in which we make sense of the world are learned" (1986, p. 11). Such a learner-centered approach to music listening and music education lends itself to higher order thinking skills, a basis for critical thinking (Olson, 2000).

Although it is a universal term and a major educational goal in academic and education literature (D'Angelo, 1971; Richardson, 1998), "critical thinking" often lacks a clear definition (Petress, 2004). Several authorities have characterized critical thinking as

a process beginning with information comprehension and including reasoning skills and thinking for one's self (Bloom, 1956; Ennis, 1962; Sternberg, 1985). Other experts emphasized self-constructed meaning and discovery as essential qualities of critical thinking (Kim, 1993; Kurfiss, 1988; Meyers, 1986). Consistent with these perspectives, I chose one of the most well known definitions of critical thinking for the purposes of this study: "reasonable reflective thinking that is focused on deciding what to believe or do [with newly acquired information]" (Ennis, 1991, p. 1-2). In musical contexts, the processes of comparing, evaluating, reflecting, judging, and classifying provide evidence of critical thinking (Bundra, 1993; Richardson, 1998) and encompass elements of both generalizable and subject-specific thinking skills (Woodford, 1995).

Activities that promote significant and meaningful music learning should ideally form the basis for general music instruction (Campbell & Scott-Kassner, 2006). Effective music listening pedagogy enhances students' music listening experiences, including feelings and thoughts expressed through the medium of music (Tait & Haack, 1984). In terms of meaningful learning, I chose to employ a constructivist approach emphasizing students' reflective understanding of musical experiences and their need to make meaning of their own musical experiences (Wiggins, 2001). Because constructivism is often an effective pedagogical approach when using higher-order cognitive skills (Sheldon & DeNardo, 2005) and because the primary goal of education is the development of thought processes instead of accumulating information (Whitehead, 1929/1967), I combined these educational approaches when designing a critical thinking treatment to investigate learning in music listening instruction.

Rationale

In the twenty-first century, listeners have unprecedented access to a wealth of music and information via the Internet and other digital media. They are frequently overwhelmed with the sheer quantity of music and information available, often becoming passive consumers (O'Brien, 1987; Sims, 1990). As a result, discriminating listeners need to select from an increasing amount of music and information. Simultaneously, students' abilities to understand and process information have not kept pace with the voluminous resources available to them (Meyers, 1986), demanding a higher quality of thought at the turn of the twenty-first century (Paul, 1993). To reflect technological changes, teachers should impart thinking skills instead of mere information (Knowles, 1980).

In general education, several researchers have reported success in enhancing students' responses through the use of critical thinking instruction. In existing literature on teacher questioning procedures and student achievement, researchers reported that asking questions was the most direct way of encouraging student participation, facilitating learning, and stimulating thinking (Redfield & Rousseau, 1981; Wilen & Clegg, 1986). Similarly, Gall, Ward, Berliner, Cahen, Winne, Elashoff, and Stanton (1978) found that instruction including higher-order cognitive questions based on Bloom's 1956 cognitive taxonomy was more effective with respect to student achievement when compared to instruction without these questions. Given these investigations linking higher-order cognitive skills with student achievement in general education, how might students' music listening skills be affected by similar higher-order cognitive questions in general music instruction?

Several researchers have promoted the value in allowing students to reflect on their own thinking, encouraging them to use such higher-order thinking skills as hypothesizing, comparing, analyzing, evaluating, and creating in various musical settings (Kerchner, 2000). For example, Bamberger (1991) and Upitis (1990, 1992) investigated the use of invented or original notation as a means of displaying students' musical understand and listening skills. Based on the relevance of self-constructed notation and the creativity required to represent music using invented notation, there are inherent educational values in encouraging students to devise their own notational systems (Campbell & Scott-Kassner, 2006). Other researchers have studied music mapping, a technique common to many music series texts (Cassidy, 2001). This technique encourages students to think and rethink their musical perceptions (Blair, 2007), and to make meaning from music listening experiences, as documented through mapping activities (Blair, 2008). Music mapping provides both kinesthetic and visual strategies to include feeling and knowing the musical experiences, furthering students' overall understanding of the music. In addition to mapping, other ways in which children represent music also provide key avenues for teachers to appreciate their cognitive development (Davidson & Scripp, 1988).

There also has been an interest among researchers in verbal data when studying music listening skills, as well as the expectation that verbal responses to music are valuable resources for future research (Haack, 1992). As Haack observed, "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" (p. 462). In such studies, researchers

analyzed verbal data and found that teachers could aid students' perceptive listening skills through instruction (Flowers, 1984, 1990, 2000; Hedden, 1981, 1990; Herberger, 1983). More specifically, Flowers found that listeners most often used images, analogies, or descriptors that were not inherently musical to describe music (i.e. emotional, temporal, and metaphorical terms). She therefore suggested that such descriptors were effective ways of focusing students' attention during music listening.

With a focus on critical thinking skills, Smialek and Boburka (2006) investigated the development of critical music listening skills. They found that cooperative listening exercises had a significant and positive effect on students' listening skills and abilities to identify musical texture, genre, and musical style. Based in critical thinking and problem solving (Norris, 2004), these cooperative listening exercises had a more active and engaging effect when compared to traditional lectures and occasional group work. 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, 1993). Even though listeners understandably know more than they can articulate (Reese, 1980), words are "the best mirror of the mind," (Pogrow, cited in Willis, 1992, p. 5), represent a process of discovery, and provide a measurable product of listeners' experiences. As the essence of discourse, they are also the most prevalent form of communication about the arts and are central to describing music (Flowers, 2002). In response to specific experiences, participants' word usage demonstrated cognitive focus, thinking styles, and attributed meanings (Tausczik & Pennebaker, 2010). Verbal descriptors also have predictive value when students used them to reflect on learning

experiences (Abe, 2009) and are valid measures of emotional expression (Kahn, Tobin, Massey, & Anderson, 2007). Furthermore, Kerchner (2000) found that "verbal responses provided the foundation for all children's visual and kinesthetic responses" (p. 32). Therefore, I sought to determine the effect of critical thinking instruction on music listening skills of fifth-grade students as measured by written responses. I posed the following research questions: would critical thinking and/or activity based instruction be associated with differences between pretest and posttest scores on a listening test assessing the use of musical terms, affective responses, and associative responses, and if so, would there be significant differences in any of these categories of responses attributable to the method of instruction?

Methodology

The current study used a quasi-experimental, randomized pretest-posttest, repeated measure design. This design limited the critical thinking instruction, in the form of open-ended, higher-order cognitive questions and improvisation exercises, to one treatment group, while the other treatment group received parallel instruction without the critical thinking components. The researcher structured these parallel treatments, Critical Thinking Instruction (CTI) and Activity-Based Instruction (ABI), in a series of sixteen lessons, presented concurrently by the teacher in four daily, 45-minute lessons per week for four weeks. Because most of both CTI and ABI lessons did not last the entire class period, the teacher proceeded with other activities from the general music curriculum, e.g. note reading and recorder playing. The participants' regular music instructor was the

teacher for both treatments. She was a well-qualified music educator with eleven years of teaching experience and a master's degree in music education.

Participants

Participants chosen for this study were 81 fifth-grade students attending a public elementary school in the southwestern United States. I chose this school as the instructional site based on the teacher's qualifications as well as the students' availability. Free and reduced lunch data indicated that this school served students with mid to upper socio-economic status. Two intact classes were randomly assigned to form each instructional group; the CTI and ABI groups were nearly equivalent in size (n = 41 and 40, respectively). I chose fifth-grade students as participants because they were more likely to engage in speculative and imaginative processes than younger students (Swanwick & Tillman, 1986).

Using sixteen written lesson plans, designed in consultation with published experts in music education, I standardized both CTI and ABI instructional treatments. To control for threats to validity, nineteen CTI and ABI classes were randomly videotaped throughout the course of the study. Three independent judges reviewed a stratified random sample of those lessons presented in a random order to determine if all aspects of the lessons were presented adequately. The judges reported viewing on average 93% and 100% of the observable objectives contained in the written CTI and ABI lesson plans, respectively. A Pearson's Product-Moment correlation coefficient and Fisher Z transformation was calculated to determine the judges' interscore reliability (r = 0.97).

Any bias the teacher may have had regarding the two instructional treatments was not apparent.

Variables

Independent variables were the two instructional treatments (CTI and ABI), and the testing situations (pretest and posttest). Dependent variables were participants' written response scores on the researcher-designed measure, "Listening and Thinking." Students' written word usage provided an indication of their cognitive focus and reflection on learning experiences (Abe, 2009; Tausczik & Pennebaker, 2010) as well as their emotional states (Kahn, Tobin, Massey, & Anderson, 2007). Therefore, I instructed three independent judges to score participant responses using a word-count methodology. Consistent with categories emergent in similar students' descriptions of music (Johnson, 2003b), the judges used three separate categories of responses: musical term, affective, associative. Musical term responses pertained to the elements of music, "fast, slow, loud, beat, high, low, instruments…" (p. 93), while affective responses revealed the listener's emotional response, "happy, scary, eerie, good, peaceful, fun…" (p. 93), and associative responses demonstrated how the listener connected the music to some extra-musical theme, "war, movies, Indians, ballroom, Africa, party…" (p. 93). I analyzed these three component scores as well as the total response score. Participants' pretest and posttest responses were ordered randomly before they were provided to the judges. A Pearson's Product-Moment correlation coefficient and Fisher Z transformation were calculated to determine the judges' interscore reliability ($r = 0.92$) among pretest and posttest scores.

Instructional Treatments

Because critical thinking is a learned skill, based on higher-order cognitive processes (Petress, 2004; Ten Dam & Monique, 2004), I developed the CTI treatment to include open-ended, higher-order cognitive questions and improvisation exercises to use corresponding processes such as analysis, synthesis, and evaluation (Anderson & Krathwohl, 2001; Bloom, 1956; Halpern, 1998). I developed the parallel ABI treatment that did not contain opportunities for critical thinking and to serve as a comparison treatment. Both CTI and ABI treatments contained three components: instruction in musical terms and concepts, repeated listening to musical examples, and response activities to music listening. Only the CTI treatment contained a fourth component designed to facilitate participants' critical thinking: the open-ended, higher-order cognitive questions and improvisation exercises.

The CTI treatment encouraged students to consider alternate solutions to the teacher's questions, to reflect on listening experiences, and to improvise instrumentally and kinesthetically in response to music listening examples. This component served to enhance critical thinking by having the participants observe, imitate, improvise, and reflect on their own learning (Ten Dam & Monique, 2004). This component also was consistent with other higher-order cognitive processes including: analyzing, synthesizing, comparing and contrasting, developing criteria for judgment, sequencing, making connections, recognizing patterns, and evaluating musical information (Brophy, 2000).

Because aural understanding results from thinking, not merely imitation (Hagan, 1971), the focus of CTI lessons was on doing musical activities as well as on thinking

about the music. The critical thinking instruction was delivered using higher-order cognitive questions, one of the most effective teaching tools (Taba, 1966), and improvisation exercises for classroom participation. The CTI treatment capitalized on the finding that, "children have the capacity to be active participants during the music listening experience and are assisted in developing that capacity when provided with tangible means of expressing their perceptions and responses" (Kerchner, 2000, p. 48).

To clarify the difference in instructional treatments, a sample lesson on melodic motion is displayed in Figure 1 (additional lessons may be found in Johnson, 2003a). The ABI lesson objectives are to have the students listen to the recording, and to mirror the teacher's demonstrated movements that outline conjunct and disjunct melodic contour while using a flag. In contrast, the CTI lesson objectives encompass the ABI objectives but also include recognizing and describing melodic shapes and contours in the recorded music, improvising movement to show melodic contours, evaluating their own improvised motions, comparing their own motions with motions improvised by other students, and responding to the teacher's questions. As shown in Figure 1, the CTI lesson includes steps 2a and 5a that involve higher-order cognitive questions, which are absent from the ABI lesson. The CTI lesson also includes more involved procedures for some steps. For example, ABI step five directs the teacher to "Play the recording again, use the other hand to show the melodic contour, and have the students mirror your movements," while CTI step 5 substitutes mirroring with improvisation, "Play the recording again, have the students improvise their own motions using a flag to show the melodic contour."

Insert Figure 1 about here

Because fifth-grade students have demonstrated a strong preference to express their music listening experiences using visual responses (Kerchner, 2005), both instructional treatments employed a multi-sensory approach including numerous activities in visual and kinesthetic modes. Both treatments also included manipulatives to encourage kinesthetic movement (Weikart, 1982) and music mapping, to foster students' thinking and re-thinking of their own musical perceptions (Blair, 2007). Similar lessons found in *Music in Childhood* (Campbell & Scott-Kassner, 2006), and the fifth grade editions of *Silver Burdett Music* (Crook, Reimer, & Walker, 1981) and *World of Music* (Beethoven, Davidson, & Nadon-Gabrion, 1988) provided content validity and served as the basis for CTI and ABI lesson content. In addition, the response activities were common to established music education pedagogies such as the Dalcroze, Kodály, and Orff approaches, as well as with Comprehensive Musicianship (Choksy, Abramson, Gillespie, Woods, & York, 2001). I chose instrumental music examples for all the listening experiences based on their diversity, potential appeal to fifth-grade students, and inherent musical qualities (Finnas, 1989; Frith, 2007; Haack, 1980, 1992; Hedden, 1981, 1990; Levinowitz, 1989). They were: "Prelude" from *Carmen* (G. Bizet), "Arkansas Traveler/Sailor's Hornpipe/Turkey in the Straw" (traditional); "Pavane" (L. Story); and "Back to the Shalla-Bal" (J. Satriani).

"Listening and Thinking" Measure

The researcher-designed instrument, "Listening and Thinking," consisted of four musical examples and twelve questions, and used a format based on the "Music Responding Block" of the *1997 NAEP Arts Report Card* (Persky, Sandene, & Askew, 1998). The

purpose was to permit scoring of open-ended responses as evidence of critical thinking related to music listening examples (Brophy, 2000). Participants listened to a total of four one-minute music excerpts, presented as two pairs. They answered one closed-ended (multiple choice) and one open-ended (written response) question about each excerpt's possible purpose and instrumentation (i.e., Purpose questions: Where might you hear this music? a) at a funeral, b) for a lullaby, c) at a parade, d) at a dance; What did you hear in the music that helped you make your choice? Instrumentation questions: How many instruments do you hear in this music? a) only one, b) two, c) three, d) more than three. How would you describe the instruments you hear in this music?). After responding to each member of a pair of excerpts, the participants compared the pair in terms of their musical differences and similarities by answering one closed and one open-ended question (Differences questions: What is different about these two pieces of music? a) the speed of the music, b) the style of the music, c) the instruments used to make the music, d) all of the above. What did you hear in the music that helped you make your choice? Similarities questions: How do these two pieces of music compare? a) They are almost the same, b) They are a little the same, c) They are a little different, d) They are very different. What did you hear in the music that helped you make your choice? This task constituted what Bailin (1998) termed a "critical challenge" (p. 153) to encourage thinking and using resources of relevant knowledge, concepts, and experiences.

I chose to parallel the word count methodology used by the *1997 NAEP Arts Report Card* in the dependent measure. Three independent judges scored each

participant's open-ended response. The closed-ended multiple-choice questions served as a prompt to facilitate writing the open-ended response, and these were not scored by the judges.

I based critical thinking questions used in "Listening and Thinking" as well as in the CTI treatment on the premise that "simply asking children *what* and *how* they think about music reveals strategies for musical understanding and valuing" [italics in original] (Rodriguez & Webster, 1997, p. 9). Instead of testing simple recall of facts or comprehension of information, I designed the "Listening and Thinking" measure to elicit evidence of higher order thinking skills (Anderson & Krathwohl, 2001; Bloom, 1956), and validated it in consultation with published experts in music education. Additionally, I conducted a pilot study using this measure and found that neither the musical example, the order of examples, nor the form of data (written or spoken) made a significant difference in the participants' responses (Johnson, 2006).

Data Analysis

A two-way multivariate analysis of variance (MANOVA) with repeated measures was used to compare Listening and Thinking mean pretest and posttest scores by treatment. Means and standard deviations are presented in Table 1. Significant main effects found for treatment and for pretest/possttest were subsumed by the significant treatment by test interactions for each component of the Listening and Thinking measure: Musical Term, $F\,(1, 158) = 9.18, p = .003$; Affective, $F\,(1, 158) = 7.52, p = .007$; Associative, $F\,(1, 158) = 4.33, p = .039$; Total, $F\,(1, 158) = 10.84, p = .001$. While both treatment groups began with nearly equivalent pretest scores on all three components of

the dependent measure, posttest scores differed significantly. In post hoc analyses, the CTI group demonstrated significant gains on each of the three components of the posttest, but the ABI group demonstrated no significant increases in response scores from pretest to posttest. In fact, Total response scores for the ABI group declined slightly, as did scores for the Musical Term and Associative components.

Insert Table 1 about here

Discussion

To answer my research questions, I considered the significant differences between the two treatment groups on the Listening and Thinking measure, which indicated that there were differences attributable to critical thinking instruction as compared with activity based instruction. The CTI treatment was more effective in terms of participants' gains from pretest to posttest on all three test components. Because all participants received the same instruction with respect to music terms and concepts, response activities, and repeated listening, it appears that the critical thinking questions and improvisation, limited to the CTI treatment, resulted in these enhanced participant responses. Therefore, I concluded that the critical thinking instruction had a significant and positive effect on participants' music listening responses.

The ABI treatment may not have been a model of effective music listening instruction. It also is possible, however, that measuring written responses disadvantaged ABI participants, who might have demonstrated significant gains using other outcome

measures. Future research is needed to explore the apparent lack of effect the ABI treatment had on participants' written response scores.

As well as being significantly longer, CTI participants' listening test responses demonstrated enhanced depth and greater detail. Excerpts from actual responses provided by participants illustrate this growth in musical understanding. For example, to describe the lullaby "Golden Slumbers," an ABI participant wrote it was "annoying" on the pretest and "soft" on the posttest indicating a change in classification but no change in written response score. When describing the same piece of music, a CTI participant wrote, "Calmness, pictures of stars, twinklers, flute" on the pretest and, on the posttest wrote:

> I would picture a funeral with the music being played because the person was sweet and soft like the melody. I also pictured a commercial of baby, a mother kissing him and singing a sweet soft quiet peaceful song like the melody. Also at a school dance when the queen is taking her dance. She might be pretty, like the queen, like the melody.

In describing the Sousa march "King Cotton," one ABI participant wrote, "Most of the instruments were very loud and are usually played for big audiences," on the pretest and, "They are loud for most of the song," on the posttest, indicating a decrease in the number of musical term and associative references after ABI instruction. In contrast, a CTI participant describing the same march on the pretest wrote, "It sounds like it at Old Tucson at the parades," and on the posttest wrote, "The music has cheerful instruments.

The rhythm is interesting, the melody is fun and enthusiastic. It made me think and picture a marching band. I also pictured a carousel," indicating an increase in musical term, affective, and associative descriptors. Finally when comparing "Golden Slumbers" and, "American Wake/The Nova Scotia Set," on the pretest an ABI participant reported, "Speed and style" were different and on the posttest wrote, "One was fast, one was slower," demonstrating a similar level of comparison both before and after instruction. Making the same comparison, on the pretest a CTI participant wrote, "Everything in the music [was different]," and on the posttest wrote, "The first piece was slow and the melody was soft and had more soft wind instruments. The second piece was fast, the melody had more string [instruments]," indicating the increased level of comparison and attention to detail in both the musical examples and verbal descriptions.

The results favoring CTI participants are consistent with previous studies documenting the positive influence of higher-order cognitive questions on student achievement (Gall, Ward, Berliner, Cahen, Winne, Elashoff, & Stanton, 1978; Redfield & Rousseau, 1981; Wilen & Clegg, 1986). These findings also agree with previous researchers (Haack, 1969; Herberger, 1983; Smialek & Boburka, 2006) who reported significantly improved student achievement related to music listening instruction based on conceptual development and listening skills. The observed significant increases in written descriptors as a result of CTI instruction are generally consistent with Flowers's research (1984, 2000). In her 1984 study, however, she noted that increased references to some musical elements were accompanied by decreased references to other musical elements. This finding is inconsistent with significant increases in musical term,

affective, and associative responses demonstrated by CTI participants from pretest to posttest. Differences in learning goals, length of instruction and developmental level of the participants may explain this inconsistency with Flowers's findings.

For every response category, the standard deviations of both CTI and ABI participants increased from pretest to posttest, indicating greater individual differences in responses. The effect of both ABI and CTI lessons may have been in part dependent on individual participants' attitudes and effort. The increase in standard deviations, however, was larger among CTI participants, suggesting that the effect of the CTI treatment was more pronounced and less predictable than the effect of the ABI treatment. Increased standard deviations in CTI posttest scores also indicated that the CTI treatment did not benefit all participants in this group equally. Therefore, future researcher might address the characteristics of students for whom this type of instruction is most effective.

For both musical term and total response scores, both minimum and maximum CTI scores increased as a result of instruction, indicating that participants at both ends of the scoring spectrum demonstrated improved responses. The minimum scores demonstrated by ABI participants, however, decreased for every response type from the pretest to posttest, while the maximum scores increased, suggesting that the ABI treatment did not sufficiently engage those participants. In contrast, the CTI treatment seems to have engaged more students and been generally more effective.

Implications of the current study for teachers are to include open-ended questions and improvisation along with vocabulary and response activities when designing music listening instruction. By augmenting students' awareness of music as a thoughtful

experience, music educators can engage students more effectively, encourage them to think more imaginatively, and inspire them to be more musically independent (Webster & Richardson, 1993).

These findings were limited to participants' written responses. In future research, investigators could incorporate additional measures of musical understanding such as non-verbal responses. Because visual and kinesthetic responses to music listening examples were found to elicit more varied information than did either type of response alone (Kerchner, 2000), future researchers may combine different modes of responses to ascertain listeners' understanding of musical examples. Perhaps other factors beyond the limitations of the current study such as the effects of gender, grade point average, socio-economic status, ethnicity, and prior musical experience may have influenced the statistical outcomes. Replication studies are necessary to explore the effects of these and other possible factors.

Of all the arts, music is often taught the least creatively (Fowler, 1996). Music educators are challenged to present student-centered music listening activities that are engaging, informative, and enjoyable (Kerchner, 2009). Because children provide thoughtful answers only when questions are well constructed, "it seems imperative that teachers develop their interviewing and questioning skills" (Kerchner, 2000, p. 48). By teaching music more thoughtfully, educators can engage students in music listening experiences resulting in enhanced participation, involvement, and imagination. Therefore, critical thinking instruction in music listening is a promising avenue for promoting thoughtful music curricula and developing students' musical independence. As Wegner

(1989) advocated, teachers should engage students by using inventive and meaningful instruction. Through discussion, action, and reflection, critical thinking instruction provides such meaningful connections in music listening for general music students.

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Figure 1. Sample Lesson Plan on Melodic Motion.

Step	Activity-Based Instruction (ABI)	Critical Thinking Instruction (CTI)
1	**Play** the recording and tell students to listen for the direction of the melody.	**Play** the recording and tell students to listen for the direction of the melody.
1a		**Ask** the students: How would you describe the melody? How would you show it?
2	**Tell** the students that this music has a melody that sometimes goes up, sometimes goes down, and sometimes repeats the same	**Tell** the students that this music has a melody that sometimes goes up, sometimes goes down, and sometimes repeats the same
3	**Demonstrate** the shape of the melody by moving a flag.	**Demonstrate** the shape of the melody by moving a flag.
4	**Distribute** a flag to each student, **play** the recording again, and have the students mirror your movements.	**Distribute** a flag to each student, **play** the recording again, and have the students mirror your movements.
5	**Play** the recording again, use the other hand to show the melodic contour, and have the students mirror your movements.	**Play** the recording again, have the students improvise their own motions using a flag to show the melodic contour.
5a		**Ask** the students: How well did your motions show the melody? How did your motions compare with motions other students improvised? How might you change your motions? Why?
6	**Tell** students that melodies have lines and shapes that either go up or "ascend," go down or "descend," or repeat the same pitch. Explain that melodies sometimes move by step to notes close by, sometimes move by leap to notes further away, and sometimes repeat the same notes.	**Tell** students that melodies have lines and shapes that either go up or "ascend," go down or "descend," or repeat the same pitch. Explain that melodies sometimes move by step to notes close by, sometimes move by leap to notes further away, and sometimes repeat the same notes.
7	**Play** the recording again and have the students mirror your motions as you show how the melody moves up and down, and by leap or step using a flag.	**Play** the recording again and have the students show how the melody moves up and down, and by leap or step with their flag. Pause the recording, invite students to take turns leading the class, and resume the recording.

Table 1

Means and Standard Deviations for the Listening and Thinking Measure by Treatment by Test

TREATMENT	Pretest		Posttest		Change from
Component	*M*	*SD*	*M*	*SD*	Pretest to Posttest
CTI					
Musical Term	16.63	7.08	26.45	12.71	+9.82
Affective	2.62	2.69	4.57	4.94	+1.95
Associative	3.75	2.47	6.72	6.43	+2.97
Total	23.00	9.17	37.74	21.23	+14.74
ABI					
Musical Term	16.03	5.96	14.34	6.49	-1.69
Affective	1.73	1.70	2.60	2.83	+0.87
Associative	2.78	1.92	2.26	2.18	-0.52
Total	20.54	7.38	19.20	8.73	-1.34