Abstract

For decades critical thinking was seen as a skill that had to be developed in every educational context. Therefore, developing this ability became a principal issue for many educators and researchers. A great deal of research was carried out to reveal what fosters this ability and how it is fostered. Besides, the increasing interest in critical thinking popularized the question of how critical thinking could be adapted to other disciplines. In this study, the relationship between critical thinking and music education will be investigated. Hence the purpose of this study is to review the effects of music education on the students' critical thinking abilities in the light of literature. In addition, the teachers' role of guiding students to achieve critical thinking will be discussed. Finally, how to foster the critical thinking abilities of music students in the context of music education will be questioned and some suggestions will be made about the development of music students' critical thinking skills.

1. Introduction

Nowadays rapid improvements in technology, politics, sociology, economics, science and in a number of other fields cause big changes on human life. Humans need to learn faster, think multidimensional and be creative to settle for the new consequences in their lives. These require individuals to have many diverse qualifications (Güven & Kürüm, 2006). From this point of view, education has become more important than ever before. However, adapting to new consequences for individuals in a changing world requires new concepts in education. Thus, educating individuals as self-learners, creative problem solvers, critical thinkers, has become one of the most important goals in education in this era.

In that vein, educators stress the importance of individuals assuming personal responsibility and control for their own acquisition of knowledge and skill (Zimmerman, 1990). Erdoğan (2006) states the need for educated individuals who can self-perpetuate and be creative to engage in new circumstances. It is the responsibility of educational leaders and educators to develop a climate that encourages creativity as well as discover the self (Maloney, 1992). Halpern (1999) states that changes in technology and the workplace have made the ability to think critically more important than ever before. Instruction designed to help college students think critically focuses on skills that are widely applicable across domains of knowledge and the disposition to use these skills.
There are several qualities, knowledge and skills individuals must have in education, business and everyday life. One of these qualities and skills is definitely critical thinking. The process of creating a common definition for critical thinking derived from broad educational research literature is challenging (Garret, 2009: 8).

2. Defining critical thinking

The term critical thinking, often used in conjunction with problem solving, high-order thinking skills, reasoning, is defined as a skill in some approaches. However, some suggest that individuals must have critical disposition at first in order to have critical thinking skills while some see it as a mental process. According to Yıldırım and Şensoy (2011) individuals, who can think critically in their life, are individuals who have critical thinking skills and critical thinking disposition. However, in order first to understand what critical thinking is, a brief definition must be made. There are a number of similar definitions about critical thinking that have minor differences in literature of education. That’s because, various definitions of critical thinking are a result of how broadly or narrowly the construction of critical thinking is viewed (Field, 1997: 18). Some of the definitions made in literature are mentioned below.

According to Mertes (1991) critical thinking is a conscious and deliberate process used to interpret or evaluate information and experiences with a set of reflective attitudes and abilities that guide thoughtful beliefs and actions. Critical thinking refers to the use of cognitive skills or strategies that increase the probability of a desirable outcome. Critical thinking is purposeful, reasoned, and goal-directed. It is the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions (Halpern, 1999). McPeck (as cited Garret, 2009: 8) defined critical thinking as the propensity and skill to engage in an activity with reflective skepticism. According to Chance (as cited in Huitt, 1998) critical thinking is the ability to analyze facts, generate and organize ideas, defend opinions, make comparisons, draw inferences, evaluate arguments and solve problems. Robert J. Sternberg (as cited in Pogonowski, 1987) stated that, critical thinking comprises the mental processes, strategies, and representations people use to solve problems, make decisions, and learn new concepts. Although these definitions are close to one another, a great number of other definitions made are seen when literature is investigated.

In fact, classifying learning objectives and systematizing learning in a hierarchical way in education, is not a new issue. Concepts and language for critical thinking were established in Bloom's taxonomy compiled in 1956 (Powers, 2011). When designing and examining learning strategies to promote critical thinking, educators often use Bloom’s Taxonomy as a framework for instruction and assessment (Field, 1997). Bloom’s Taxonomy is a multi-tiered model of classifying thinking according to six levels of complexity. The lowest three levels are: knowledge, comprehension and application while the highest are: analysis, synthesis and evaluation. The taxonomy is hierarchical; in that each level is subsumed by the higher levels (Forehand, 2005). Despite the cognitive skills used by critical thinkers, they involve some of the skills that take place in Bloom’s Taxonomy, some skills in critical thinking differ from the skills in Taxonomy. As to the cognitive skills what the experts include as being at the very core of critical thinking: interpretation, analysis, evaluation, inference, explanation, and self regulation (Facione, 2011). As seen, the higher levels of thinking skills mentioned in Bloom’s Taxonomy comply with cognitive skills in critical thinking. However some researchers are skeptical of equating Bloom’s Taxonomy to critical thinking. Instead equating the Taxonomy with micro level skills which may be used in critical thinking but which do not represent critical thinking (Field, 1997). As Paul (1985) stated the authors of the Taxonomy organized cognitive processes into one-way hierarchy, leading readers to conclude that knowledge is always a simpler behavior than comprehension, comprehension is a simpler behavior than application, application is a simpler behavior than analysis, analysis is a simpler behavior than synthesis and so forth for the synthesis and evaluation. This view is misleading at least one significant sense; the achieving of any knowledge always presupposes at least minimal comprehension, application and evaluation. In that vein Bloom implies that they intended the taxonomy as a method of classifying educational objectives, educational experiences, learning processes and evaluation questions and problems. He continues that they did not intend to provide a constraint on educational philosophy, teaching methods or curriculum development (Paul, 1985).

To prevent the confusion and to distinguish critical thinking from other concepts in educational psychology, the skills which underlie critical thinking must be indicated in order to clarify critical thinking. Almost everyone who
has worked in the critical thinking tradition has produced a list of thinking skills which they see as basic to critical thinking. For example, Edward Glaser (as cited in Fisher, 2001: 7) listed the abilities:

(a) to recognize problems, (b) to find workable means for meeting those problems, (c) to gather and marshal pertinent information, (d) to recognize unstated assumptions and values, (e) to comprehend and use language with accuracy, clarity and discrimination, (f) to interpret data, (g) to appraise evidence and evaluate statements, (h) to recognize the existence of logical relationships between propositions, (i) to draw warranted conclusions and generalizations, (j) to put to test the generalizations and conclusions at which one arrives, (k) to reconstruct one’s patterns of beliefs on the basis of wider experience; and (l) to render accurate judgments about specific things and qualities in everyday life.

Halpern (1997) stated that when we think critically, we are evaluating the outcomes of our thought processes. The evolution of this human thinking process has come to be known as cognitive process instruction, and the goal is to understand how knowledge, cognitive processes and mechanisms can improve how people think. It is one of the most important issues for instructors and researchers that what enhances critical thinking and how this skill can be developed. And another essential point is how critical thinking can be forced in everyday life and in education environment.

3. Critical thinking and music

There are two aspects about critical thinking. Some researchers claim that critical thinking can be generalized and some researchers suggest that critical thinking is domain-specific. For instance, Dewey (as cited in Johnson, 2003: 59) purposed a model of reflective thinking that represents the basis of generalized thinking skills. Instead of critical thinking, Dewey used the term reflective thinking and described it as active, considered and careful thinking. Reflective thinking liberated thinkers from their natural thoughtless impulses and circumstances; he viewed the unreflective state as unnatural in that people had an inherent sense of curiosity and tendency for order in the world. From this point of view, critical thinking can be seen as the individuals’ thinking characteristic that enables him/her to approach all the issues, regardless of domain, in the same way that s/he experienced.

Music education includes music listening, music making and cognitions about music that refer to harmony, tonality, musical forms and structures. For some educators, music education can be used not only for developing music skills, but also for developing individuals’ social skills, problem-solving skills, cognitive skills, critical thinking dispositions and skills and academic achievement. Bamberger (as cited in Johnson, 2003: 16) suggested that understanding music and learning music are both acts of problem-solving through listening. There are a number of studies that done by researchers to emphasize this relationship. One of them is the scientific study done by Zellner, (2011) which purposed to explore the relation between instrumental music education in 8 and 11 Grades and critical thinking as assessed by the Pennsylvania System of School Assessment. Experiment and control groups were generated as instrument students and non-instrument students. The results indicated that the instrumental music sample consistently outscored the non-instrumental music sample when compared to the reading and mathematics skills of the samples.

Fiske (as cited in Wallner, 2007: 1) contends, music education is a means of self expression that allows students to connect with themselves and others, transform the environment of learning through arts integration products, provide learning opportunities for the adults in the lives of students, provide new challenges for students already considered successful, and connect learning experiences to the world of real work. Most importantly, educators maintain that music education can reach a number of students out of reach and in ways that students are not otherwise being reached. In other words, music education can be used as an instrument to establish mutual social competencies for students. According to Priest, (1997: 49) an individual’s critical thinking processes are influenced by social and environmental factors. Due to the students’ social interactions by music education, there will be an appropriate environment to foster the student’s critical thinking dispositions.

Music lessons involve long periods of focused attention, daily practice, reading musical notation, memorization of musical passages, learning about the structure of music such as intervals, scales, chords and chord progressions, developing fine motor skills and expressing emotion in performance (Neil-Palmer, 2009: 28). In addition, listening to music, which is inevitable in all music lessons, may involve thinking about musical style, patterns and meaning. Listening involves thinking about music in active, cognitive processes, in which listeners develop their own understanding of music. According to Zellner (2011: 32) the integral nature of arts allows the performer to become an active problem solver and, therefore, provides a direct impact upon the overall outcome. Music instruction becomes but one facet in this process of instruction, but because of its didactic nature, it allows for the cognitive
responses to flow through a multisensory experience, evoking both educational and aesthetic experiences (Zellner, 2011: 38). Pogonowski (1987) suggested that in musical contexts, critical thinking makes use of cognitive as well as affective thought processes. She adopted the perspective that "critical thinking is the result of experiential learning that embraces the learners’ affective and cognitive domains". While music instruction includes executive and reading skills, Pogonowski advocated the inclusion of experiences in music expression and making meaning through music.

But, do all the music lessons force the students’ problem solving skills, creativity, critical thinking skills or dispositions? To reveal how music allows developing cognitive skills and behaviors as well as problem-solving skills, music lessons must be investigated. How the music is thought in music lessons varies from country to country, from curriculum to curriculum and from school to school. In that case, do all the music lessons foster critical thinking regardless of how the lesson was taught?

As mentioned above, there are two aspects of critical thinking and the other aspect is that critical thinking is domain specific. Critical thinking has unique ways for all different domains that they do not interact with each other. According to McPeck (as cited in Green, 2005: 7) critical thinking itself is contextual and cannot be generalized.

Critical thinking enables individuals to engage more fully in the words as lifelong learners, independently and collectively. According to Priest, (1997: 50) thinking critically in music is essentially different from thinking critically in other domains in that it addresses music and music related problems. Therefore, music educators, in their attempt to teach critical thinking, must deal with the issues of defining the concept, determining the importance of the context and evaluating student’s critical thinking in and about music (Field, 1997: 19).

Students who are taught in a traditional, purely theoretical approach to musical problem solving miss out on opportunities to develop critical thinking skills (Pogonowski, 1987). Thereby, all the music lessons may not develop critical thinking skills of students. For this reason, some precise steps must be taken in order to create an appropriate environment for learning. There are several techniques music teachers can use to help students develop thinking skills. Small (1987) has identified aspects of critical thinking that can be applied to the classroom. These include: a) defining the musical problem, refers what do we want to know? b) identifying the “point”, refers gathering knowledge for necessary decision making, c) recognizing underlying assumptions, refers identifying the points that are taken granted, d) detecting inconsistencies, refers recognizing inconsistencies in assumptions.

Teacher has a vital role in the classroom by creating the appropriate atmosphere for students to think critically. Pogonowski (1989) emphasized the role of teacher as calling him/her as a catalyst that provides the motivation for learning. Setting the stage for cognitive challenge in the classroom environment is important, and structuring an event to cause intellectual unrest puts the students on course toward higher level thinking. A well developed repertoire of questions to activate the reasoning process can help students reach satisfying conclusions and feel good about significantly using their minds whenever they participate in music (Small, 1987). It is the teachers’ responsibility to plan a music lesson that allows students to use their knowledge on different subjects to create new statements by the help of well designed questions. According to Pogonowski (1989), assisting students in their development of critical thinking skills will help them listen, study a piece of music, and discover meaning beyond that which is elucidated by others. These skills will help students integrate musical understandings and will provide them with the potential for becoming comprehensive musicians and critical thinkers.

4. Conclusions

As a result, one of the most important goals in educational contexts is raising individuals that have critical thinking skills and who can use those skills in everyday life. Education researchers suggest various ways to develop individuals’ critical thinking skills. Music education is one of the ways suggested by researchers. Contrary to this, some researchers claim that critical thinking skills are domain-specific. From this point of view, music education cannot help individuals transfer critical thinking skills to other domains. But research (Woodford, 1996) suggests that in order for this transfer to take place successfully, teachers must encourage students to apply critical thinking skills across a range of disciplines using examples and counterexamples of increasing complexity and subtlety. Music teachers, therefore, will need to work with teachers from other subject areas to ensure that students are afforded the opportunity to practice by applying critical thinking skills to different contexts.
Like many other domains, music is not one-dimensional. It entails perceptual skills (e.g., apprehending structural information as well as social information), cognitive skills (e.g., memory, decision making, pattern recognition) as well as motor skills. These skills function, interact, and evolve in such complex ways that we are slowly starting to understand (Lehmann, Davidson, 2006: 225). Since musical skills have sophisticated multiple effects on individuals, music can play an important role in their intelligence and thinking abilities. However, the vital issue in this point is how music lessons are taught. A poorly designed music lesson cannot force critical thinking. For developing the individuals’ critical thinking skills in music lessons, music lesson itself must be planned to force the individual to think critically and music teachers must guide and let the students give a range of examples from various contexts. In respect to this, teachers must design music lessons in accordance with this purpose. In this way, individuals’ critical thinking skills may be developed by music education and this education helps raising better performers, music educators and composers who can think critically.

References


