



## Learning rhythmic creations using critical thinking for high and vocational school music teachers

**Diah Latifah**

*Music Education, Music Education Department, Arts and Design Education Faculty, Universitas Pendidikan Indonesia, Bandung, West Java 40154, Indonesia*

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### Abstract

This study sought to examine the critical thinking skills for rhythmic music creation for music teachers at both high and vocational schools through rhythmic music training. A narrative inquiry research method was employed to highlight various procedures that occurred during the workshops. The research data stemmed from the results of observations of the practice of rhythmic music processing practice activities and tests for the creation of rhythmic motive music as well as the results of interviews on the significance of training in critical thinking oriented rhythmic music creation. The research participants were 14 people, 12 music teachers, and 2 trainers who had expertise in music composition and arrangement. The participants were teachers from several areas of West Java, Indonesia. The training was conducted in a senior high school in West Java. The results revealed that critical thinking through training could successfully foster rhythmic music creation.

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### Introduction

Among the pivotal competencies for a teacher is to understand and implement the applicable curriculum content and goals (Hammond, 2006). As leading figures in the world of learning, teachers are required to have the creativity to make students embrace critical thinking competencies. A teacher needs to create an atmosphere to build the student's ability to think critically in music (Topoğlu, 2014). Besides, s/he also needs to implement a music learning process that endeavors to incorporate the process of critical thinking and creative work. This accords with Indonesia's curriculum policy in which

teachers are propelled to “implement a learning process that supports creativity” (Deputy Minister of Education and Culture, 2014).

Among the benefits of critical thinking is that it triggers the ability to analyze and strengthen concentration. Van Roekel (2010, p. 8) argued that learning critical thinking improves pupils' attentiveness, analytical abilities, and cognitive processing. To that end, a proper educational environment is a must for students' critical thinking skills to grow as social and environmental variables impact an individual's critical thinking processes (Topoğlu, 2014, p. 2254). In addition, students must understand a new concept and solve the problems of sound exploration. Based on existing concepts, critical thinking is required to be able to analyze the sound produced (Shaw, 2014).

E-mail address: [diahlatifah@upi.edu](mailto:diahlatifah@upi.edu).

Many music teachers feel that they have instilled critical thinking skills when teaching their students, but their teaching practices vary significantly as there are many interpretations of critical thinking (see Hager & Kaye, 1992; Kokkidou, 2013). Regardless of differing interpretations, the teachers should encourage their students to develop their thinking skills as it will assist them in developing higher-order thinking skills (Shuler, 2011). Preliminary analysis of the music teachers involved in this research indicates that the teachers came up with varying responses in interpreting critical thinking skills. This is what motivated the present research.

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## Literature Review

This section delineates the theoretical framework of critical thinking and the inception of creative ideas in producing rhythmic music.

### *Critical Thinking*

Critical thinking is a result of experience-based learning, especially true for the experience of learning that “embraces the learners’ affective and cognitive domains” (Pogonowski, 1987 as cited in Topoğlu, 2014, p. 2255). The process of thinking is carried out by conceptualizing, applying, analyzing, re-composing, and evaluating information from observation of various types of musical activities. Such critical thinking dimensions correspond to Bloom’s taxonomy.

It is important that critical thinking is carried out in music education curricular activities as critical and creative thinking are both in line with the achievements of the art curriculum. According to Nilson et al. (2013), as critical and creative thinkers, students develop the confidence and tools necessary to comprehend and critique art in the real world.

Critical thinking is one of the cognitive skills needed in music education to enhance students’ skills in problem solving, music listening, their responses to music (Shaw, 2014). In musical contexts, Johnson (2011) affirmed that the processes of comparing, evaluating, reflecting, judging, and classifying provide evidence of critical thinking.

### *Creative Thinking and Music Creativity*

Music education requires the practice of music creativity, especially in arrangements and compositions (see Lindroth, 2012). In this respect, Brophy (2001, p. 34)

asserted that music teachers should own compositions and provide them to their pupils as instructional material.

Music creativity is the ability to apply ideas or imagine sound language into the form or structure of new music. Leen et al. (2014, p. 4) defined being ‘creative’ as “a critical component (e.g., having or showing imagination and artistic or intellectual inventiveness).” The development of musical creativity requires a creative thinking process which constitutes the cognitive aspect of creativity (Puccio & Murdock, 2001). In addition, creative activities in the form of musical arrangement and composition are convergent and divergent ways of thinking and this is especially true of music production (Lindroth, 2012).

### *Rhythmic Music*

Rhythm is the basic element in music creation. In fact, it is construed as the core of collective music creation (Ilari, 2015). Rhythm moves our body according to its sensitivity to the rhythm. Rhythmic music flow is detected by our auditory senses. Likewise, Zentner and Eerola (2010) claimed that the production of a rhythmic music sound could cause an unconscious and involuntary effect on a listener’s body.

From this concept, it can be stated that the sensitivity of rhythmic music is one of the most natural and fundamental musical sensitivities for people and that the combination of critical and creative thinking will lead to music creativity.

### *High and Vocational School Music Teachers*

The utmost importance of having good musical skills for music teachers is unquestionable as the teachers need to pass on relevant musical knowledge and help students develop their vocal and instrumental skills (Kokotsaki, 2010). In the vocational education context, as Virkkula (2020) pointed out, the development of cooperation between work life and educational units in “learning at work” has received some attention. In the field of music, learning at work refers to the student’s action in preparing the pieces of music for performances, practicing music individually, doing ensemble work, arranging and implementing performances.

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## Methodology

A narrative inquiry was employed, as it has been a topic of recent interest in music teaching and learning

(McCarthy, 2007). In this context, Craig (2011) affirmed that teacher education is strongly linked to their life and narrative research. Following Connelly and Clandinin (1990), the research was in the form of music training, whose primary objective was to demonstrate how to introduce a critical thinking process in creative music classes in high schools.

### *Participants*

The trainers participating in this research were two faculty members specializing in music arrangement and composition. Meanwhile, the trainees were:

1. four vocational high school music teachers with Western music education backgrounds;
2. four high school music teachers with a background in Western music;
3. three high school music teachers with a Sundanese traditional music background; and,
4. One high school music teacher with a fine arts education background but no formal music education background.

These teachers were recruited through the music teacher working groups of senior high and vocational schools. They were also professionally certified civil servant teachers.

### *Research Instrument*

The research instruments were observation sheets and interviews. They were established based on the critical thinking indicators to unveil the participants' responses, progress, and even challenges during the training.

### *Data Collection*

Research data were collected by direct observation and interview during the workshops of rhythmic music training held in a Bandung high school. Prior to the start of the training course, preliminary interviews were conducted by the instructors with the course trainees to discover the differences in their comprehension of critical thinking. After the third training season, an additional set of interviews was carried out to review how the trainees saw the role of critical thinking in teaching music.

Indicators of improved critical thinking skills are analysis, evaluation, and judgment in creating musical motives. The techniques of developing musical motives comprise: (1) repetition; (2) deletion; (3) augmentation; (4) diminution; and (5) embellishment.

### *Data Validation*

Triangulation was carried out by investigating the suitability between narrative data from observations and data from interviews, after which these data were deliberated against the theoretical studies about the role of critical thinking in the creativity of rhythmic music creation.

### *Data Analysis*

To determine the improvement of the critical thinking skills, music analysis ability, rhythmic music creativity, and teaching ability of the trainees, observation analysis was performed during and at the end of the training course. The participants' improved skills were ascertained by comparing their abilities before receiving the training with that after the training in developing motives on rhythmic melodies. The success of the training was seen in the way the participants were able to apply the critical thinking process in cultivating new rhythmic patterns.

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## **Results**

The results of the research are presented in detail in a narrative manner to obtain clarity from the process and results of the research. What follows describes how critical thinking skills operated for each trainee as they engaged in the training. The rhythmic music training was held over five meetings with two different instructors. The following are detailed results.

### *Observation Report about the Implementation of Critical Thinking in Rhythmic Music Learning*

In the first meeting, the participants analyzed music rhythmic from the question that they asked. The training commenced with sound exploration produced by parts of the body and was done at first by exploring the sounds in the palm. After the sound exploration, the trainees were asked to analyze music motives from the exercises they had just completed.

In the second meeting, the participants performed an evaluation. They first explored sounds from the environment and composed music with the smallest structures, i.e., a motif. They had to evaluate the sounds and make a decision on what kind of sounds they would use to create the motives.

In the third meeting, the participants analyzed, evaluated, and then decided what kind of music rhythmic

technique developments they would deploy, which cover repetition, deletion, augmentation, diminution, and embellishment.

The next meeting was structured around the implementation of the development of motives into melodies in rhythm patterns. In this section, the participants analyzed what kind of techniques they would utilize to create music rhythmic. In this case, they had the liberty to develop motives into a rhythmic musical composition.

The test results were composed of rhythmic patterns showing:

1. The teachers with the traditional music backgrounds determined the rhythm patterns that come from their musical cultural background, evaluated which patterns to be arranged into musical motives, and then identified music development techniques they would employ to create musical compositions. After analyzing the type of sound to be used, some vocational school teachers decided to use the objects around the classroom environment that were easy to find, such as the sound of feet rubbing the floor, clapping hands, and patting the table.

2. The vocational teachers first analyzed and classified the kinds of sounds they would produce. Then, they analyzed the motive development technique. Finally, they evaluated the development of rhythm patterns to compose a new one.

3. The high school teachers with Western music backgrounds classified and chose the melodic patterns and decided to develop the motives to compose melodic patterns and put them in choral arrangements.

4. The trainee, who came from a fine art education background, developed a rhythm pattern based on the training. This participant made the rhythmic development according to the examples gained from the results of his prior workshops. In this section, the trainee interpreted the new sound based on the learning process and

developed new rhythm patterns to create a rhythmic composition.

One of the works was created together at the end of the training. The trainees completed a piece of 3 grooves in the form of three-line rhythmic melodies. The motives development in this rhythmic music ensemble comprised repetition, embellishment, and deletion. During this process, they collaborated and communicated with each other to exchange ideas about their work. They classified the sounds which they used and decided to use the sounds from the surrounding environment and finally composed rhythmic music together.

An example of the emergence of creativity and critical thinking in the creation of rhythmic music can be seen from following piece as shown in [Table 1](#).

The work above is a piece created jointly by all the trainees. In the first line, the first motive is carried out on bars 1 and 2, which is then developed repeatedly in bars 3 and 4 (as auditive products).

In the second line, the trainees created developments, where the 2nd bar is an extension of the deletion of the first bar, and the 3rd bar is the development of the motive embellishment of the first bar, while the last bar, which is the end of the second row, is the repetition of the first bar in row 3 of the first bar. Like in the second line, the trainees made developments in the third line in which bar 2 is an embellishment of bar 1, while bar 4 is the repetition of bar 3 and the first bar on row 3.

The third line seems to have a treble nuanced sound flow or becomes bass in work, and line 1 is melody 1, expected to appear as the main melody. Meanwhile, line 2 is melody 2, which seems slightly below the volume of line 2. All this demonstrates that the trainees were able to exploit their creative and critical thinking skills, by analyzing and classifying the sounds they used, and then deciding the kind of motive development in manufacturing their creations.

**Table 1** Musical piece produced by the trainees

Sounds of a bottle struck by a chopstick	
clapping	
Sounds of a table hit by a fist	

### *Interview Report of Critical Thinking for Music Learning*

During the last day, two meetings were held to allow the trainees to air their views about the critical thinking process in music learning to obtain their thoughts about its meaningfulness. The following answers emerged.

1. A high school music teacher with a traditional music background said that critical thinking is important in music learning as some of the problems associated with students studying music today were identified during the process.

2. A vocational music teacher with a Western music background thought that critical thinking is essential in achieving positive student learning outcomes and boosting critical thinking that will stimulate the initiation of new ideas.

3. A high school music teacher with a fine art education background believed that critical thinking is a necessity to uncover new students' ideas in creative work, such as analyzing and creating rhythmic music creations as obtained during the workshop.

In general, the results of the interviews revealed that the training was pivotal because by analyzing, determining, and creating rhythmic music individually or together in a music ensemble, the trainees could practically carry out the task of teaching music according to the guidelines of the applicable curriculum in Indonesia.

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## **Discussion and Conclusion**

### *Discussion*

After experiencing rhythmic music training, the trainees applied a critical thinking process to analyze and create new forms and expressions of music based on their music training experience. This agrees with Kokkidou's (2013, p. 5) statement that critical thinking skills are closely linked to creativity and a willingness to try new things, which are important parts of all artistic processes.

The trainees' problems, when faced with difficulties during the training process, were solved by interacting with the instructors and other trainees. The process of creativity was intertwined as a form of musical dialogue between the trainees. Shuler (2011, p. 12) believed that music students gain 21st-century communication skills when they learn to interpret music, create music, and respond to other musicians' ideas.

In this evidence of narrative study, the trainees' musical creations are based on the activity of analyzing, classifying sounds, and developing musical motives,

making decisions on how to structure rhythmic music based on motif development techniques. The critical thinking skills of the trainees were triggered by analyzing, synthesizing, and evaluating rhythmic motives to be communicated as a group and assembled into a work of rhythmic music. The critical thinking skills of the trainees were also apparent when analyzing and organizing the motives of rhythmic music into a piece of music. This is in line with Facione's (2011) stance that critical thinking constitutes analyzing, organizing oneself, making inferences, and evaluating. The participants' critical thinking skills were also seen when they made a decision (judgment) to compose a piece of rhythmic music in groups based on the interpretation of the rhythmic music (see Topoğlu, 2014).

In the context of rhythmic music creativity, the creation of music is a comprehensive combination of a musical sensitivity that intuitively belonged to the trainees and is a critical problem-solving process. Critical and creative thinking can be fostered simultaneously in music creation (Kokkidou, 2013).

Critical thinking in training rhythmic music has succeeded in stimulating creative capacity and developing music creativity. Scott (2015, p. 7) affirmed, "To this end, there is a need for meaningful learning experiences that tap into and expand learners' creativity, not extinguish it." Moreover, critical thinking has the advantage of generating new ideas and creating rhythm patterns as innovations that are stages of thinking (Piiro, 2011).

The success indicators of critical thinking skills of the music teachers, i.e. analyzing, evaluating, and judging in creating rhythmic motives into a musical piece can be sufficiently unveiled through the narrative inquiry (Craig, 2011, p. 26). In the final analysis, this research has shown that the critical thinking process encourages creativity in developing music creativity.

### *Conclusion*

After undergoing the rhythmic music creation training, using critical thinking, the trainees exhibited an understanding of processing rhythmic music through critical thinking. Critical thinking skills were evidenced through the trainees' analyzing and selecting the sounds to be used as materials for music creation, selecting and evaluating the flow of motive development, and finally determining the form of rhythmic music composition from the process of developing the rhythmic music motive they created. In addition, the interview results demonstrated that the training was also deemed helpful and meaningful for the trainees, especially in enabling

them to improve their teaching competencies under the latest national curriculum framework. In addition, the critical thinking-oriented training process has succeeded in allowing teachers from varying educational backgrounds to be competent in creating rhythmic music. Implicationally, this form of training may equip music teachers with additional meaningful skills, namely collaborating and communicating—21st-century skills—especially when they create ensemble works together.

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### Conflict of Interest

The author declares that there is no conflict of interest.

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