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The efficacy of a music education programme focused on creative thinking*

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Abstract

In this research, the aim is to designate the effect of a music education programme focused on creative thinking on 3rd grade students' creative thinking in music. 46 students were selected randomly, including 23 students in both experimental and control groups. Webster's Measure of Creative Thinking in Music (MCTM) was used to examine students' ability of creative thinking in music before and after the educational programme. The results revealed that the experimental group has improved significantly in three dimensions of MCTM (Musical Flexibility, Musical Originality and Musical Syntax), while the control group stayed in the the same level of the MCTM. Considering the results of the study, it is suggested that creative thinking approach can be used as a means for developing an alternative music education programme to improve students' creative thinking in music.

Keywords: Creative thinking in music, musical creativity, creativity in music.

1. Introduction

There is not a common definition for the term "creativity" due to the diversity of researchers' study areas and perspectives. Torrance (1968, p.10) defines creativity as 'a process whereby one becomes aware of problems, difficulties, gaps in information, missing elements, and disharmonies for which he has no learned solution; searches for clues in the situation and in existing knowledge; formulates hypotheses or possible alternative solutions; tests these hypotheses, modifies and retests them; and communicate the results'. Researching on the individuals who change our culture in several aspects, Csikszentmihalyi (1996, p.28) describes creativity as 'any act, idea, or product that changes an existing domain, or that transforms an existing domain into a new one'. Emphasizing the result of the creative process, Amabile et. al. (1996, p.35) state that 'a product or response will be judged as creative to the extent that (a) it is both a novel and appropriate, useful, correct or valuable response to the tasks at hand, and (b) the task is heuristic rather than algorithmic'. According to the synthesized definition generated by Plucker, Beghetto and Dow (2004, p.90), creativity is 'the interaction among *aptitude, process, and environment* by which an individual or group produces a *perceptible product* that is both *novel and useful* as defined within a *social context*'.

The researchers studying on creativity in music has also made efforts to describe musical creativity. Whether musical creativity is considered to be an achievement, a search or an engagement of mind, it is commonly

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emphasized that a creative result should be "novel". Elliott (1995, p.219) states that 'the words *creative* and *creating* apply to the achievements of musical composing, improvising, and arranging that are original and significant within the context of a particular musical practice, including instances of musicing that depart in highly original and important ways from existing traditions'. Reimer (2003, p.111-118) emphasizes that musical creating involves roles which include creativity in *composing, performance, improvising and listening*, and defines musical creating as 'a search for musical meaning, carried out distinctively in each musical role' (p.103). According to Webster (2002, p.11), creativity in music is 'the engagement of the mind in the active, structured process of thinking in sound for the purpose of producing some product that is new for the creator'.

Creativity and creative thinking are concepts which complement each other in various ways. Vaughan and Myers (1971, p.337) note that 'in the wider context of the cultivation of human potential, creativity is considered to as much a mode of thought as the product to it'. According to Aslan (2006, p.285), *creativity* symbolizes the existence and permanence of minkind in the universe and this existence is exhibited at its most original form as mental and psychological well-being and productivity with the help of *creative thinking*. Davis (1981, p.99) states that 'personal *creative thinking strategies* include unique strategies and processes which each *creative* person uses to achieve his or her creative insights and perceptions'. Webster (2002, p.11) argues that, in the field of music, it is more appropriate to use the term *creative thinking* because creativity in music is 'the engagement of the mind in the active, structured process of thinking in sound for the purpose of producing some product that is new for the creator'. Hence, it is a thought process and can be defined and identified in all individuals at various levels. On the basis of these explanations, it can be concluded that, *creative thinking* symbolizes the supporting methods or processes to access *creativity* and this term is particularly preferred to be used by researchers who plan on to focus on the development or process of creativity.

Musical creativity is thought to be a concept which has positive effects on the individual and society. It is also believed that creativity in music can be taught and enhanced. Balkin (1990, p.32) states that a creative perspective in music education will help students to improve such attributes as 'overcoming the fear of making mistakes, the desirability of individual expression; and the de-emphasis of right and wrong responses'. With a similar point of view, Barnes (2001, p.98) stresses some qualities including 'co-operation, self-confidence, flexibility, risk-taking and, communication', which can be developed with the support of teaching for creativity in music. Elliott (1995, p.227) emphasizes that creative results are achieved by learners who are 'regularly required to strive for creative results in the normal course of their musical learning'. According to Burnard (2000, 9.243), the aim of music educators is to give a central role to creativity in music-making and then need to provide varied oppurtunities in the process of music education which should be little less focused on the acquiring of adult constructions of knowledge. Many other music researchers and educators also defend the importance of developing creativity in music education (e.g. Kratus, 1989; Webster, 1990; Moore, 1990; Fung, 1997; Graham, 1998; Hickey and Webster, 2001; Strand and Newberry, 2001; Priest, 2002; Lehmann, Sloboda and Woody, 2007; Running, 2008; Koutsoupidou and Hargreaves, 2009; Robinson, Bell and Pogonowsky, 2011).

Researchers' increasing concern for musical creativity during the second half of the 20th century concluded with many changes in the national music programmes of various western countries (The National Association for Music Education, 1994; The National Curriculum of England–Key Stages 1-2; Sharp & Le Métais, 2000). In parallel with these movements, *musical creativity* was placed on the basis of the Primary Music Curriculum of Turkey with three other fundamental concepts which include listening-singing-playing, musical perception and knowledge, and musical culture (Turkish Primary School Music Curriculum, 2006).

In order to enrich the content of the music curriculum in Turkey, alternative educational programmes are needed to be tested. In the light of this idea, it is aimed to examine the effect of the educational programme focused on 'creative thinking in music' on 3rd grade students' creative thinking in music. Parallel to this aim, research questions of the present study are:

1. Are there any differences between the MCTM scores of children who took musical training focused on creative thinking and those who didn't?

2. If the result is positive, in what sub dimensions (musical extensiveness, musical flexibility, musical originality and musical syntax) did the differences occur?

2. Method

Pretest-posttest designs are primarily used for the purpose of comparing groups and/or measuring change resulting from experimental methods in behavioral research (Dimitrov and Rumrill Jr, 2003). Therefore, pretest-posttest experimental method was used in order to examine the effect of the educational programme focused on 'creative thinking in music' on 3rd grade students' creative thinking in music.

2.1. Participants

46 students were selected randomly, including 23 students in the control group and 23 students in the experimental group. The groups were statistically equal in some characteristics, such as the number of students in the classes, percentage of boys and girls, socio-economic factors and MCTM scores of the students.

2.2. Instrument

Webster's Measure of Creative Thinking in Music (MCTM) was used to assess students' creative thinking in music. MCTM includes a series of 10 tasks, each vido taped while the child is giving his/her responses. MCTM uses three sets of instruments: (1) a round "sponge" ball of about 4" in diameter, (2) a microphone and (3) a set of five, wooden resonator blocks (temple blocks). The scoring of the video tapes involves both objective and subjective techniques. Four factors used for scoring are Musical Extensiveness (ME), Musical Flexibility (MF), Musical Originality (MO) and Musical Syntax (MS). The factors of Musical Extensiveness (ME) and Musical Flexibility (MF) are measured objectively by either counting the actual seconds of time a child is involved in a task (ME) or by observing the manipulation of musical parameters (MF). The factors of Musical Originality (MO) and Musical Syntax (MS) are measured by the extent to which the response is unusual or unique in musical terms and in the manner of performance (MO) or by the extent to which the response is inherently logical and makes "musical sense" (MS). Validity and reliability studies of the MCTM were completed in a number of studies from 1983 to 1990 by Webster and other researchers (Webster, 1994). Turkish version of the measure was adapted as part of the doctoral thesis of Çoraklı (2011).

2.3. Educational Programme

The educational programme was developed on the basis of the goals in the Turkish Primary School Music Curriculum, however creative thinking approach was used to organize objects and activities. The objects and activities were generated by the researcher with the support of the structures of Webster's creative thinking model (2002) and Kratus's list of goals and objectives (1990).

According to Webster (1990, p.28), creative thinking is 'a dinamic mental process that alternates between divergent (imaginative) and covergent (factual) thinking, moving in stages over time'. In his model of creative thinking in music; performances of precomposed music, improvisation, careful listening and analysis are all considered as elements of the creative thinking process. This approach, when adapted to music education, emphasizes the importance of *music listening* and *analyzing* in musical learning environment as well as *composing* and *improvising*. Therefore; the educational programme, tested in the study, consisted of several music listening and analyzing activities accompanied by the activities of composing and improvising.

As part of the creative thinking approach, the acquisiton of *the awareness of sounds* was also purposed in order to make the experimental group understand and internalize the music they listen, perform and create. For this purpose, training and analyzing of sound changes and opportunity to discover sounds by using instruments in the music class was provided for the students during the education.

The researcher administrated the experimental group's lessons for 4 weeks; including 2 lessons in each week. The control group continued their education with their class teacher. While almost all of the activities of the groups during the lessons were different, the goals shared the same statements.

3. Results

The mean scores of the pretests of both groups demonstrated normal distribution in universal parameter. Based on this result, parametric statistical methods were used to compare the mean scores of the experimental and control groups.

Table 1. Dependent Group "t" Test Results of Experimental Group's Scores for Subdimensions of MCTM in Pretest and Posttest

MCTM	n	Mean	Std. Deviation	Std. Error	r	t	df	P
ME Pretest Total	23	436,61	192,91	40,225	,670***	-2,599	22	,016*
ME Posttest Total	23	544,39	267,10	55,696				
MF Pretest Total	23	32,09	6,578	1,372	,404	-7,655	22	,000***
MF Posttest Total	23	43,56	6,59	1,374				
MO Pretest Total	23	5,00	3,384	,706	,515*	-3,818	22	,001***
MO Posttest Total	23	7,73	3,59	,749				
MS Pretest Total	23	4,13	2,70	,563	,438*	-4,460	22	,000***
MS Posttest Total	23	6,65	2,38	,497				

*p<,05 **p<,01 ***p<,001

Experimental group's total scores for each dimension of MCTM were analyzed with dependent group "t" test. Results revealed significant differences for the experimental group's MCTM scores in all of the dimensions including Musical Extensiveness (p<,05), Musical Flexibility, Musical Originality and Musical Syntax (p<,001). In other words, the education focused on creative thinking in music had significantly positive effects on children's MCTM scores.

Table 2. Dependent Group "t" Test Results of Control Group's Scores for Subdimensions of MCTM in Pretest and Posttest

MCTM	n	Mean	Std. Deviation	Std. Error	r	t	df	P
ME Pretest Total	23	491,48	283,973	59,212	,708***	,810	22	,427
ME Posttest Total	23	456,391	256,098	53,400				
MF Pretest Total	23	34,83	10,044	2,094	,945***	-1,141	22	,266
MF Posttest Total	23	35,608	9,801	2,043				
MO Pretest Total	23	5,17	4,997	1,042	,974***	-,926	22	,365
MO Posttest Total	23	5,391	4,868	1,015				
MS Pretest Total	23	4,00	3,317	,692	,970***	-,768	22	,451
MS Posttest Total	23	4,130	3,375	,703				

*p<,05 **p<,01 ***p<,001

Control group's total scores for each dimension of MCTM were analyzed with dependent group "t" test. Results didn't reveal any differences for any dimensions of MCTM. In other words, there was not a significant change in the MCTM scores of students the students who didn't participate in the music education programme focused on creative thinking.

Table 3. Independent Group "t" Test Results of Experimental and Control Groups' Scores for Subdimensions of MCTM in Posttest

MCTM	Group	n	Mean	Std. Deviation	Std. Error	t	df	P
ME Posttest Total	Experimental Group	23	544,3913	267,10923	55,69612	1,140	44	,260
	Control Group	23	456,3913	256,09848	53,40022			
MF Posttest Total	Experimental Group	23	43,5652	6,59081	1,37428	3,231	44	,002**
	Control Group	23	35,6087	9,80139	2,04373			
MO Posttest Total	Experimental Group	23	7,7391	3,59567	,74975	1,960	44	,050*
	Control Group	23	5,3913	4,86863	1,01518			
MS Potsttest Total	Experimental Group	23	6,6522	2,38573	,49746	2,926	44	,005**
	Control Group	23	4,1304	3,37510	,70376			

*p<,05 **p<,01 ***p<,001

Experimental and control groups' total scores after the experiment for each dimension of MCTM were analyzed with independent group "t" test. Results revealed that the experimental group has improved significantly in three dimensions of MCTM including Musical Flexibility (p<,01), Musical Originality (p<,05) and Musical Syntax (p<,01), while the control group stayed in the the same level of the MCTM. In both groups, there was not a significant difference in Musical Extensiveness.

3. Conclusion

Creativity has been considered as a prevalent academic subject in several fields, including music. The comprehensive studies on musical creativity has stimulated some changes in music education curriculums of many countries. In the light of these developments, Turkish Primary School Music Curriculum has also been modified and musical creativity has been placed as an important part of the cirruculum.

The aim of the study was to develop and test an alternative music programme focused on creative thinking. It was also thought that the results would support the enrichment of the concept of the Primary School Music Curriculum in Turkey and inspire other researchers to develop novel music programmes to nurture students' musical creativity.

The results of the study revealed that the music education programme which was developed by the help of creative thinking approach, has made significantly positive effects on experimental group's responses to the Measure of Creative Thinking in Music (MCTM), while the control group didn't demonstrate any changes in their responses. In other words, the children, who participated in the experimental music programme focused on creative thinking, scored significantly higher in three dimensions of MCTM, including musical flexibility, musical originality and musical syntax than the students who received classical music education. The results of the studies of Fung (1997) and Koutsoupidou and Hargreaves (2009) also revealed that music teaching programmes based on improvisation and sound exploration have achieved to improve the ability of childrens' creative thinking in music. Parallel with the current study's results, in both studies, experimental groups have improved in the same dimensions (musical flexibility, musical originality and musical syntax). Based on the results of the current study and the studies stated above; it can generally be concluded that alternative music programmes based on rich activities to develop musical creativity has achieved their goals.

Considering the results of the current study, it is suggested that "creative thinking" is a convenient approach to be applied in music classes to enhance students' creative thinking in music. Although musical creativity takes part in

the Primary School Music Curriculum of Turkey, the experimenting of the new approaches are needed to enrich the concept of the curriculum. Therefore, it is also suggested that, more researches are needed to test different programmes aiming at to increase the level of creativity in children's musical products, in order to improve the quality of teaching creativity in music. In addition, the relationships between creative thinking in music and some variables, such as academic achievement, intelligence or general music talent, can be investigated in the future to reach a better understanding of musical creativity.

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