

# Chapter 14

## Do You like Music as the Subject at School? Creativity in Self-regulated Learning and Motivation in Music Education



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### Introduction

Creativity is an emerging area of interest in music education. Half a century ago, Joy Guilford, a leading creativity researcher and psychologist, claimed that “the problems of creativity in the educational setting are endless, and the scope of research in this area is rapidly spreading” (Guilford, 1967, p. 10). Music educators inquired if creativity can be taught (e.g., Running, 2008). Clark (1986), for instance, stated that the product of creativity is inseparable from action of the creative processes.

The study on self-concept in education and in educational evaluation and research has attracted the attention of creativity researchers. In the 1970s, researchers admitted the gaps in self-concept research and the lack of theoretical models and appropriate measurement instruments (Marsh, 1990). Shavelson, Hubner, and Stanton (1976) proposed a multidimensional, hierarchical model of self-concept with uni- and multidimensional perspectives. In their model, at the top of the hierarchy Shavelson et al. (1976) posited a single global component of self-concept. In the second level, the researchers proposed academic (e.g., mathematics, English, and science) and nonaca-

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ademic self-concepts (e.g., social, physical, and emotional). Academic self-concept tends to decline from early to mid-adolescence. The decline of academic self-concept extends to adulthood (Liu & Wang, 2005). Academic self-concept reaches its lowest point in middle adolescence (Marsh, 1989). Middle-school students underperformed elementary school students on achievement, interest in school, and perceived self-competence (Holas & Huston, 2012). Our study reported in this chapter aimed to find out the relationships among academic self-concept, music motivation, and music as the subject from the Japanese students. Our participants of the study were sixth, seventh, eighth, and ninth graders of the elementary and junior high schools in Japan. We focus on the associations among intrinsic motivation in music and self-regulated learning ability in music learning.

A child will choose to put the effort into constructing an original interpretation and creating something new if s/he is motivated to do so (Tang, 2010). Self-perceived competence and affect have their theoretical basis in motivation research (Marsh & Ayotte, 2003). Students are intrinsically motivated in areas that they perceive themselves to be competent (Harter, 1992). Positive feedback on their competence increased intrinsic motivation which is related to individual interest (Harackiewicz & Sansone, 2000).

Intrinsic motivation refers to motivation which originates within an individual: Motivation to do something because it is inherently interesting or enjoyable (Ryan & Deci, 2000, p. 55). Intrinsic motivation has emerged as an important phenomenon in education. Students who study music as a school subject willingly likely demonstrate high levels of intrinsic motivation. They engage in learning and practices and perceive music as a pleasurable subject. According to Amabile's (1983) theory of creativity, intrinsic motivation is conducive to creativity. The emotional state of personal deposition such as "flow" (Csikszentmihalyi, 1990; Csikszentmihalyi & Csikszentmihalyi, 1988) represents the state in which people are engaged with genuine satisfaction and pleasure. "Flow" is associated with high creativity. The source of "flow: can be within intrinsic motivation.

Creativity is represented by novel and flexible ideas as a result of the interaction between the individual and the educational environment. According to Amabile's (1983) theory of creativity, intrinsic motivation plays the important role in individual creativity. Motivational mechanisms link to social context to creativity (Liu, Chen, & Yao, 2011). Our study examined the relationship between creativity and intrinsic motivation that likely strongly related to self-regulated learning in the school context.

Intrinsic motivation is important in facilitating students' creativity in music. Runco (2004) highlighted "actual creative behaviors" including motivation is an important research area. Students' curiosity and interest or motivation are the main sources of creativity (Csikszentmihalyi, 1996). Creativity is likely flourished in the situation which cultivates intrinsic motivation (Amabile, 1996; Collins & Amabile, 1999). Runco (2007) maintained that creative personality is related to intrinsic motivation (Runco, 2007).

Self-regulation "is not a mental ability or an academic performance skill; rather it is the self-directive process by which learners transform their mental abilities into academic skills" (Zimmerman, 2002, p. 64). de Bezenac and Swindells (2009) argued

that “for music learners outside of the Western classical tradition, recordings often constitute a type of aural score, a source from which material may be repeatedly studied and eventually reproduced” (p. 17). It suggests the importance of self-regulated skills to repeat, review and memorize some melodies and phrases for non-Western music learners. Classical music players are “competent at *reading notation*” (p. 17). Such self-regulated learning ability is likely related to creative learning style in both Western and non-Western cultures.

### ***School Transition, Development, and Gender***

During school transition from elementary to junior high school, the relationship between intrinsic motivation and self-regulated learning likely change. Eccles and her colleagues conducted a longitudinal study on school transition of 1500 Michigan students from elementary school in sixth grade to junior high school in seventh grade as a series of their research. During the school transition, students’ achievement, engagement, and perceived school-competence declined (Eccles, Wigfield, Harold, & Blumenfeld, 1993). Students’ perceived competence and value could be distinguished but more correlated with age when they grew up. Eccles et al. (1993) provided further support for the multidimensionality of self-concept for young children. She found that children in Grades 1, 2, and 4 showed differentiated music self-concepts. Wigfield and Guthrie (1997) reported that correlations between competence and interest increased during early childhood, from Grades 1 to 6. Wigfield and Eccles (2002) attributed this to changes in school environments that increasingly made evaluation and competition more salient as students grew older. Declining self-perceived competence reflected an optimistic bias for very young children and increased accuracy in responses, as they grow older. Likewise, Harter (1992) proposed that students feel intrinsically oriented in areas that they perceive themselves to be competent. A shift in psychological development during the middle and late adolescence through early adulthood means that there is a tendency for individuals to question externally imposed regulations, expectations, and values, while they engage in experimenting with different situations. Creech found in her study that involved parents of violinists that even the committed parents may begin to feel “less efficacious” as their child matures “past the age of 11” (Hallam, 2006, p. 110). Adolescents who are after aged 11 seems to seek new identities by turning away from music that associated with choices of parents and educational institutions. They likely turn toward what they enjoy as original and creative. Our research aims to inquire into such phenomenon among sixth graders in elementary schools and seventh, eighth, and ninth graders in junior high schools.

Gender differences in self-concept development are well documented. Girls have a lower self-concept than boys (Young & Mroczek, 2003), but the gender difference may vary across different subjects. Gender-stereotypic differences exist from young in both academic self-concept and music motivation, with girls reporting lower scores than boys for mathematics and sports but higher levels for reading and instrumental

music (Eccles et al., 1993; Wigfield & Eccles, 2002). Gender differences in arts favor girls.

## The Present Study

Our study formulated three hypotheses (H).

Academic self-concept tends to decline from early to mid-adolescence and reaches its lowest point in middle adolescence (Liu & Wang, 2005; Marsh, 1989). Boys and girls possess different beliefs about their academic competencies (Wigfield & Eccles, 2002; Marsh, 1989). Boys indicated higher academic self-concept than girls. Accordingly, we formulated the first hypothesis (H1): Students' academic self-concept declines in the transition from elementary to junior high school, and there is a gender difference in academic self-concept.

Research found gender differences in music classrooms. Girls reported higher academic self-perceptions in nonscience courses (Marsh, 1989). Especially in music at school, girls showed higher levels for reading and instrumental music (Eccles et al., 1993; Wigfield & Eccles, 2002). Accordingly, we formulated the second hypothesis (H2): There is a gender difference in students' music motivation.

In Japan, boys showed higher scores than girls regardless of grade levels during the transition from elementary to junior high school (Oie, Fujie, Okugawa, Kakihana, Iitaka & Uebuchi, 2013). During school transition, students experience different emotions related to failure, shame in grades, detentions, and honor roles in schools, which may undermine their intrinsic motivation (Ryan & Deci, 2000). The low intrinsic motivation in the school transition likely affect their self-regulated learning strategies and skills (Oie et al., 2013). Accordingly, we formulated (H3): There are grade and gender differences in self-regulated learning abilities, academic self-concept and music motivation.

## Method

### *Participants*

A total of 1392 pupils in eight elementary schools and students in six junior high schools in Tokyo participated in the study. They were sixth graders ( $n=414$ ; male  $n=208$  and female  $n=206$ ) in elementary schools and seventh graders ( $n=252$ ; male  $n=108$  and female  $n=144$ ), eighth graders ( $n=397$ ; male  $n=183$  and female  $n=214$ ) and ninth graders ( $n=329$ ; male  $n=189$  and female  $n=140$ ) in junior high school in Japan. They filled out a survey questionnaire in 2006.

## *Survey Administration*

The teachers in the schools assisted in distributing the survey to the participants of the study in the class. They briefed the participants of the study the aim of the study. They presented sample items and how to use numeric scales to respond to items on the survey and encouraged the participants to ask questions about items if any. The teachers informed the participants of the study that the information they provided would be kept in confidential. The pupils and students were told to take time completing the survey and if they had any questions to ask the experimenter. During the briefing, the teachers informed the students of their rights to withdraw anytime from the study without consequences. The completed surveys were handed to the researchers. The participants filled out the survey in approximately 30–45 min.

## *Measures*

*Music motivation.* The participants were requested to answer a question on motivation: ‘How do you like the following subjects? Please choose the indicator that corresponded to your answer, 1 = “I don’t like Music as a school subject at all” to 4 = “I like Music as a school subject very much”’.

*Self-regulated learning.* Self-Regulated Learning Scale (Oie et al., 2013) comprised 28 items which measured the extent to which a child anticipated that he or she could master the skills taught in lessons and review the work at home in autonomy. This scale consists of six subscales, ‘preparation and review of lessons’ (six items: e.g., ‘When I go back to my house, I study until I am certain that I understand what I have learned at school.’), ‘ability to tie what learners study at school to their daily life’ (six items: e.g., ‘I think that what I study at school is useful in solving difficult, everyday problems.’), ‘ability to look over with materials’ (four items: e.g., ‘I look over what I don’t understand with dictionaries and illustrated reference books.’), ‘ability to study in autonomy’ (five items: e.g., ‘I prepare what teachers taught me to take not to forget them at home.’), ‘note-taking ability’ (three items: e.g. ‘In class, I take notes along my own rules, such as marking important issues in red so that I can see them easily.’), and ‘process orientation’ (four items: e.g. ‘I usually care more for answers than for how I arrive at them.’). The participants of the study rated the items using a four-point rating scale, with indicators 1 = ‘not at all true of me’ to 4 = ‘very true of me’. Each subscales’ points were calculated as averages of the sum of each item, respectively.

*Academic self-concept.* The Academic Self-Description Questionnaire (ASDQ, Marsh, 1990) is multidimensional. Our study used only six items from ASDQ-1 to suit the Japanese educational environment. Instead of the original ASDQ-1’s eight-point response scale (1 = definitely false to 8 = definitely true), we adopted a four-point response scale (1 = definitely false to 4 = definitely true). A higher score of the items means a more favorable response. The adopted five items for our study were: “Do

you like school?,” “How good do you get marks at school?,” “Compared to others my age I’m good at learning something new in school subjects.,” “How easy are work in lessons for you?,” “How well do you think you can answer teachers’ questions in lessons?”

Grade level and gender were included as variables. Grade level was coded as 6(sixth), 7(seventh), 8(eighth), and 9(ninth). Gender was coded as 1 (male) or 2 (female). The IBM SPSS Statistics version 25 was used for the analysis.

## Results

Means and standard deviations of music motivation, self-regulated learning, and academic self-concept in the four grade levels and the two genders are computed and presented in Table 14.1. The researchers also conducted a  $4 \times 2$  MANOVA (music motivation, self-regulated learning and academic self-concept by grade and gender). The Box’s  $M$  test for homogeneity of dispersion matrices was conducted as a preliminary analysis of the data for robustness. With the significant result at Box’s  $M = 508.04$  ( $F = 1.97, p < 0.001$ , robustness was guaranteed. With reference to Tabachnick and Fidell (2012) the Pillai’s trace criterion was referred. All the multivariate  $F$  values reported are based on Pillai’s trace. Differences among groups were assessed by applying a  $4 \times 2$  (grade level  $\times$  gender) multivariate analysis of variance (MANOVA) with the six subscales of SRL ability scored as dependent variables. On the basis of Pillai’s trace and after analyzing the multivariate effect, univariate tests were performed. As Huberty and Morris (1989) noted, a MANOVA followed by univariate analyses of variance keeps the experiment-wise on-or rate at the lowest level.

Results of the MANOVA showed statistically significant differences on several dependent measures between the two genders (Hotelling’s  $T^2 = 0.24, F(8, 1227) = 36.91, p < 0.001$ ) as well as among the different grade levels (Wilks’s  $\Lambda = 0.77, F(24, 3559) = 14.02, p < 0.001$ ). Furthermore, a significant interaction effect was observed between different grade levels and both genders (Wilks’s  $\Lambda = 0.96, F(24, 3559) = 2.46, p < 0.001$ ).

### *Grade-Level Differences*

Univariate results showed significant differences among the four grade levels on the dependent variables: the six SRL variables and academic self-concept. However, no significant differences on music motivation. Concerning SRL, all the six subscales revealed significant differences among four graders. Post hoc comparisons using Bonferroni correction suggest that ninth graders demonstrated lower “preparation and review of lessons,” “ability to tie what students study at school to daily life,” and “ability to study in autonomy” than sixth, seventh, and eighth graders in the SRL

**Table 14.1** Means and standard deviations of the dependent variables in four grade levels and gender

Variables	6th		7th		8th		9th		
	Male	Female	Male	Female	Male	Female	Male	Female	
Music motivation	Means	3.02	3.48	2.96	3.46	2.93	3.47	2.84	3.56
	SD	0.07	0.07	0.09	0.08	0.07	0.06	0.07	0.08
SRL									
Preparation and review of lessons	Means	2.06	2.27	2.21	2.29	2.01	2.27	1.95	1.80
	SD	0.05	0.05	0.07	0.06	0.06	0.05	0.06	0.06
Ability to tie what students study at school to daily life	Means	3.02	3.02	2.95	2.92	2.80	2.81	2.68	2.65
	SD	0.05	0.05	0.06	0.06	0.05	0.04	0.05	0.06
To look over with materials	Means	2.98	3.05	2.83	2.98	2.85	3.17	2.78	2.85
	SD	0.06	0.06	0.08	0.07	0.06	0.06	0.06	0.07
Ability to study in autonomy	Means	2.85	3.03	2.63	2.88	2.78	3.01	2.63	2.57
	SD	0.05	0.05	0.06	0.05	0.05	0.04	0.05	0.05
Note-taking ability	Means	3.01	3.34	2.73	3.46	3.30	3.72	3.34	3.65
	SD	0.05	0.05	0.06	0.05	0.05	0.04	0.05	0.05
Process orientation	Means	2.96	3.03	2.86	2.95	2.91	3.00	2.87	2.82
	SD	0.04	0.04	0.05	0.04	0.04	0.03	0.04	0.04
Academic self-concept	Means	15.62	15.26	14.77	14.48	14.00	14.29	14.02	13.72
	SD	0.20	0.19	0.27	0.23	0.21	0.19	0.20	0.23

strategies. Six graders showed most of the SRL higher than ninth graders except “note-taking ability” significantly. Means and standard deviations are reported in Table 14.2. The univariate tests showed that the multivariate main effects of the factor “grade” were obtained for “preparation and review of lessons,”  $F(3, 1234) = 13.94, p < 0.001$ , “ability to tie what students study at school to daily life,”  $F(3, 1234) = 19.78, p < 0.001$ , and for “ability to study in autonomy,”  $F(3, 1234) = 19.82, p < 0.001$ . Ninth graders had lower scores than sixth, seventh, eighth graders. No significant differences were found between 6th and seventh grade students. In addition, a significant main effect of grade was revealed for “to look over with materials,”  $F(3, 1234) = 4.65, p < 0.001$ , and “process orientation,”  $F(3, 1234) = 5.93, p < 0.001$ . For each factor, ninth graders showed lower scores than sixth and eighth graders. There were no significant differences among sixth, seventh, and eighth graders. Only “note-taking ability” was reported as increasing in score as grade went up: it had a significant main effect,  $F(3, 1234) = 37.14, p < 0.001$ , with eighth and ninth graders scoring higher than sixth and seventh graders. There were no significant differences between fifth and sixth graders and between seventh and eighth graders.

In terms of academic self-concept, a significant main effect,  $F(3, 1234) = 23.13, p < 0.001$ , with six graders scoring higher than seventh, eighth, and ninth graders. Also, seventh graders showed higher score than ninth graders.

## ***Gender Differences***

Gender as a factor of the multivariate test showed a significant result. Possible gender-related differences in music motivation, the six SRL variables, academic self-concept, and academic self-concept were tested by univariate analyses. The results of this analysis are presented in Table 14.3. Gender-related differences were found in music motivation,  $F(1, 1234) = 113.09, p < 0.001$ . Female students demonstrated higher scores than males.

Four subscales of the SRL except “ability to tie what students study at school to daily life” and “process orientation” revealed significant differences among two genders. The univariate tests showed that multivariate main effects of the factor “gender” were obtained for “preparation and review of lessons,”  $F(1, 1234) = 5.92, p < 0.05$ ; “ability to review materials,”  $F(1, 1234) = 11.13, p < 0.001$ ; “ability to study autonomously,”  $F(1, 1234) = 17.84, p < 0.001$ ; and “note-taking ability,”  $F(1, 1234) = 162.23, p < 0.001$ . Female students demonstrated higher scores than males. No significant differences between two genders for their responses on academic self-concept.

In sum, our findings supported H1 partially. Students’ academic self-concept declined during the school transition from elementary to junior high school, but there was no gender difference in academic self-concept. Our findings supported H2 fully. There was a gender difference in students’ music motivation. Female students rated higher scores in music motivation than males. Findings supported H3 partially. There were grade and gender differences in several self-regulated learning abilities.



**Table 14.2** Means and standard deviations of the dependent variables in four grade levels

Variables	6th		7th		8th		9th		F(3, 1234)
	Means	SD	Means	SD	Means	SD	Means	SD	
Music motivation	3.25	0.05	3.21	0.06	3.20	0.05	3.20	0.05	0.25**
SRL									
Preparation and review of lessons	2.16	0.04	2.25	0.05	2.14	0.04	1.87	0.04	13.94**
Ability to tie what students study at school to daily life	3.02	0.03	2.93	0.04	2.81	0.03	2.66	0.04	19.78**
To look over with materials	3.01	0.04	2.91	0.05	3.01	0.04	2.81	0.05	4.65**
Ability to study in autonomy	2.94	0.03	2.76	0.04	2.89	0.03	2.60	0.04	19.82**
Note-taking ability	3.17	0.03	3.10	0.04	3.51	0.03	3.50	0.04	37.14**
Process orientation	3.00	0.02	2.90	0.03	2.96	0.02	2.85	0.03	5.92**
Academic self-concept	15.44	0.14	14.62	0.18	14.14	0.14	13.87	0.15	23.13**

\*\* $p < 0.001$

**Table 14.3** Means and standard deviations of the dependent variables in two genders

Variables	Male		Female		<i>F</i> (1, 1234)
	Means	SD	Means	SD	
Music motivation	3.25	0.05	3.21	0.06	113.09**
SRL					
Preparation and review of lessons	2.16	0.04	2.25	0.05	5.92*
Ability to tie what students study at school to daily life	3.02	0.03	2.93	0.04	0.11
To look over with materials	3.01	0.04	2.91	0.05	11.13**
Ability to study in autonomy	2.94	0.03	2.76	0.04	17.84**
Note-taking ability	3.17	0.03	3.10	0.04	162.23**
Process orientation	3.00	0.02	2.90	0.03	3.22
Academic self-concept	15.44	0.14	14.62	0.18	1.15

\*\* $p < 0.001$ , \* $p < 0.05$

There were only grade differences in academic self-concept and gender differences in music motivation.

## Discussion

The present study explored the relationship among intrinsic motivation in music as the school subject, self-regulated learning ability, and academic self-concept. The first and second hypotheses were formulated to test if there were grade level and gender differences in music motivation and academic self-concept. Our research indicated that there were no significant differences between the four grade levels in music motivation and between two genders in academic self-concept. The findings for academic self-concept showed that sixth graders of our study scored significantly higher than seventh, eighth, and ninth graders. Our findings supported Eccles and her colleagues' results that during the school transition, perceived school-competence generally declined (Eccles, Wigfield, Harold, & Blumenfeld, 1993). Wigfield and

Eccles (2002) suggested the changes in school environments from elementary school to junior high school in Japan could be the reason.

Significant gender differences were found in music motivation where girls scored significantly higher than boys. Our findings supported those of the previous researches that girls demonstrated higher levels in instrumental music (Eccles et al., 1993; Wigfield & Eccles, 2002). Our findings on academic self-concept were different from those reported by Marsh (e.g. 1989). In his studies, girls scored lower in self-concepts than boys did. We did not find any significant gender difference in academic self-concept.

With reference to our third hypothesis (H3), there are grade and gender differences in self-regulated learning abilities, academic self-concept and music motivation, our findings showed that there was a difference in academic self-concept and self-regulated learning between highly motivated students and lower motivated students in music as the school subject. Students whose academic competence was high would be motivated in music as the school subject. Their motivation was higher than motivation of students who were not confident in their academic learning.

In sum, our research findings lend support to create a nurturing collaborative environment for creativity in music. In a society with its interdependent culture teaching in music education in Japan tends to appreciate collaboration and group performance inside and across lessons and groups. Schools also emphasize learning to play instruments, composing creative and novel music pieces, and introducing original music. Elementary and junior high school students in Japan are sometimes enthusiastic when they are involved in organizing music cultural festivals such as chorus competition, ceremonies, and extracurricular activities. We are able to observe scenes when students are united in autonomous groups and motivated to succeed in music festivals harmoniously. This can be a way of maintaining music motivation in school transition from elementary to junior high school. Further research may like to find out the relationship between autonomy support and creativity in music education. Future research may also like to find out how teaching autonomy can contribute to children's creativity as well as how harmonious teaching method can enhance creativity in music education and mediate the relationship among academic self-concept, music motivation, and self-regulated learning. We hope our research has deepened our theoretical and practical understanding of creativity in music education in Japan and has encouraged future creative research in music education.

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