Changes in Self-Reported Motivation and Attitudes of Secondary Students
Following Music Compositional Activities

中學生在參與音樂創作活動後
動機和態度之改變

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Abstract

Motivation is an important condition in music composition. However, studies on motivation changes towards music composition are rare. This paper reports an investigation on motivation changes of secondary students after they have been guided to compose. A total of 810 students from four secondary schools of Hong Kong responded to a set of pre- and post-activity questionnaire before and after completing a compositional activity. Open-ended questions were used in the post-activity questionnaire to seek students' perception changes. A series of repeated measures ANOVA was used to compare the mean scores before and after the compositional activities in order to measure the different levels of student perception towards music composition. Gender and the identity of instrumentalist were examined whether they were significant factors affecting the motivational changes. Results suggest that these two factors significantly affected the motivational changes. While male students and non-instrumentalists had significantly lower levels of motivation than females and instrumentalists before composing, both groups had increased their motivation significantly after composing. Qualitative data reveal that intrinsic value and attainment value of composing were raised by the composing experience. Based on the findings, this study provides further implications for teaching music compositions in class.

Keywords: composition, creativity, expectancy-value theory, motivation, music education, self-efficacy

摘要

動機是音樂創作的重要條件，但有關音樂創作的動機研究卻頗爲有限。本研究調查香港中學生從事音樂創作後之動機轉變；研究員邀請來自四間中學的 810 位學生回應一份創作前和創作後的問卷調查，並比較他們在創作前後對音樂創作的動機差異；另外，學生性別和修習樂器亦爲此研究的重點。結果顯示，男生和非樂器修習者的音樂創作動機在創作前顯著較女生和樂器修習者爲低；然而當他們完成音樂創作活動後，男生和非樂器修習者的音樂創作動機顯著提升，而女生和樂器修習者則大致維持不變。另外，質化數據顯示，透過實際參與創作，學生對音樂創作活動的內在價值和成就價值得以提升。最後，本文亦提出一些有關音樂創作教學的具體建議。

關鍵詞：自我效能、音樂教育、音樂創作、創造力、期望價值理論、動機

Background

Creativity has been identified as a vital generic skill that every subject should develop in Hong Kong (Curriculum Development Council, 2000). Since 1999, an education reform has been taken place and consequently a new music curriculum guide was issued in 2003 (Curriculum Development Council, 2003). Developing students' musical imagination and creativity is one of the four main targets suggested in the guide.

Research into music creativity and its applications in school music teaching in Hong Kong context has been limited. An unbalanced situation exists in which composing has been ignored by many music teachers, while listening and imparting of music history knowledge have become the major learning content (Ng & Morris, 1998). A study by Leung (2000) indicates that, in average, five percent of the teaching time in junior secondary school general music classes and nine percent of teaching time in senior secondary school classes in devoted to teaching creative music-making activities. Identified by the respondents, one of the factors leading to the situation was the low motivation of students in composing. How to motivate students to compose remains an unanswered question for music teachers.

Research in teaching and learning music composition in the classroom has been extensively growing in the past decades globally. Composing process and creative products are two areas that many researchers are interested. For instance, after reviewing more than 700 children's compositions, Swanwick and Tillman (1986) propose a model of eight developmental stages in composition for children. van Ernst (1993) describes the composition process of a group of secondary students with musical background and proposes a *Possible Model for Student Composition Process*, in which four stages are described, namely, stimulus, sound organization, rehearsal, and product performed. Hogg (1994) proposes 16 teaching strategies on music composition after observing more than 320 music classes in England and Australia. Kennedy (2002) suggests that high school students would stick to a creative process model in which they will start with listening as preparation, thinking, listening again as stimulation and inspiration, developing their musical ideas before finishing off.

Past musical experience is shown to have impact on motivation of composing. In her study Burnard (1995) argues that secondary students tend to employ knowledge from

learning musical instruments in composing. Hence, students with rich musical experience tend to prefer those "prescription tasks" due to their confidence on musical competence and knowledge. In another study Burnard (2000) suggests that, based on their past experience, students perceive composing and improvising in a different way: they tend to use classroom percussion instruments to improvise because limited skills are required. While composing, they tend to compose music for the instruments they learn because they are more confident in and familiar with these instruments.

Motivation in creating music is an area that some researchers have addressed. In his *Model of Creative Thinking in Music*, Webster (2003) states the importance of "product intention" in order to engage in creative thinking process in music and finally receive creative products in terms of composition, improvisation, performance, listening and analysis. Motivation is regarded as one of the "enabling conditions" for creative thinking which acts as a major role in the successfulness of creating music. In an experimental study, Wolfe and Linden (1991) found that highly motivated children performed better in divergent thinking tasks in music than those children exhibiting low levels of motivation.

Motivation has been regarded as a crucial factor affecting the effectiveness of learning and academic achievement. Intrinsic and extrinsic motivations have been identified and discussed in different studies. It has been argued that intrinsic motivation plays a crucial role in the creative process, whilst extrinsic motivation (such as rewards) may be detrimental to creativity (Amabile, 1996; Hennessey & Amabile, 1988). Based on her *Componential Model of Creativity*, Amabile (1996) proposes three components of creativity, namely, task motivation, domain-relevant skills, and domain-relevant process, in which task motivation is regarded as intrinsic and extrinsic motivation while involving in the creative task.

From another perspective, the Expectancy-Value Theory (Eccles, Adler, Futterman, Goff, Kaczala, Meece, & Midgley, 1983; Wigfield & Eccles, 2000) identifies two areas which are believed to contribute to student's motivation: 1) expectancy of task-specific beliefs and ability beliefs, and 2) achievement values of individuals toward specific domains. According to Eccles et al (1983), expectancy is understood as individual's beliefs about how good they will perform on a task in the near future. When individuals possess a higher expectancy on a specific domain, they will tend to achieve a better performance in this
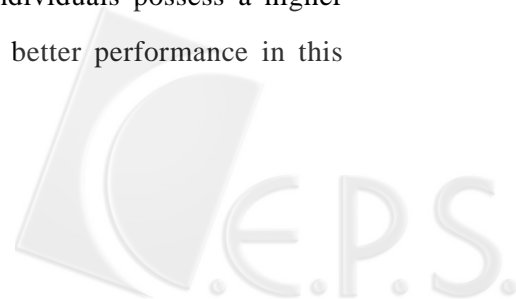
domain. Achievement values refer to four individuals' values in relation to a specific domain: 1) attainment value, 2) intrinsic value, 3) utility value, and 4) cost (Eccles et al, 1983). Attainment value is defined as the importance of doing well in a specific domain by a subjective judgment of an individual. Intrinsic value refers to the enjoyment of doing the specific task. Utility value is regarded as how the individual can benefit from participating and learning the specific domain in his/her future. And cost refers to the perceived loss that the individual will bear, including time and effort spent if s/he is engaged in the domain learning.

Self-efficacy (Bandura 1977, 1995, 1997; Pajares, 1996) is another important theory which is defined as "personal judgments of one's capabilities to organize and execute courses of action to attain designated goals" (cited in Zimmerman, 2000, 83). The personal judgment on the ability in a certain domain is believed to be determinative in achieving outstanding performance in that domain. When individuals believe in their ability, they will work harder, persist longer and possess fewer negative motivational reactions when they encounter difficulties (Bandura, 1997). Individuals who possess higher self-efficacy tend to undertake difficult and challenging tasks more readily (Bandura & Schunk, 1981; Zimmerman, Bandura & Martinez-Pons, 1992). Students who possess higher self-efficacy are evident to be better in monitoring their working time, more persistent and better in solving conceptual problems (Bouffard-Bouchard, Parent, & Larivee, 1991).

Motivation of Hong Kong students in music composition has not been studied. There is a lack of research which investigates how composing experience of students affects their motivation for composing. Based on the motivation theories mentioned, this study therefore aims to fill this gap by investigating secondary students' motivation changes in terms of self-efficacy, expectancy, intrinsic value, attainment value, utility value, and perceived cost after participating in music compositional activities. The research questions of this study are:

1. To what extent does composing experience affect the students' motivation levels towards composing music?

2. To what extent do the gender and instrumental learning affect students' motivation towards composing music?

Method

This study employed a set of pre- and post-activity questionnaire to investigate the motivation changes of students after they were exposed to a composing task in class.

1. Participants

Four secondary schools with a total of 810 secondary students (aged 12-18) and four music teachers were involved in this project. All the four music teachers were female who possessed experience in music teaching ranging from five to twelve years. However, they admitted that they had insufficient experience in teaching music compositions and they would like to learn from this project.

2. Development of questionnaire

A set of pre- and post-activity questionnaire were developed to measure the possible changes in motivation on creative music making after the teaching of the projects. The main aim of the questionnaire was to measure the possible differences between the levels of students' motivation in composing music. Demographic information about students' gender, grade, age, and whether they had received instrumental training was collected. The questionnaire comprised six motivational measures based on the Self-efficacy theory and the Expectancy-value Theory. These measures included: 1) self-efficacy, 2) intrinsic value, 3) attainment value, 4) utility value, 5) perceived cost and 6) expectancy. Different questions were derived to investigate the feedback in each measure. Students were requested to report their level of motivation in a series of seven-point semantic differential scales, except the question on the self-efficacy in which the students were asked to exhibit their confidence in composing in an eleven-point scale. Furthermore, three open-ended questions were used to survey the students' qualitative opinion on their perception towards composing. These questions focused on what the students enjoy and dissatisfied with the composing tasks as well as if the composing tasks had changed their thinking about learning music. The questionnaires were piloted by five students from each school. The researcher revised the wording of the questionnaires based on their feedback.

The wording of the questions was based on the definitions of the motivation theories aforementioned. Self-efficacy refers to the students' personal perception on their

competence in composition; thus they were asked in the questionnaire to state their level of confidence in composing. Expectancy refers to the task-specific beliefs and ability beliefs and thus students were asked to report how good they would expect and how hard they would work in music composition. Intrinsic value refers to students' personal interest in music composition and therefore they were asked to report how much they enjoyed the composition tasks. Attainment value refers to the perception on how important of pursuing the domain and thus students were asked to report how important they thought music composition was. Utility value refers to the perception of usefulness of the domain in lives and thus the students were asked to report how useful they thought about music composition in their lives. Cost refers to the perceived loss to bear to pursue the domain and thus the students were asked to report how difficult and challenge they thought to compose music. The questions are shown in Table 1.

Table 1　Questions Surveying Students' Motivation on Creating Music

Self-Efficacy

1. How confident are you that you can compose an interesting piece of music?

Intrinsic Value

1. To what extent do you think the composing tasks might be interesting?
2. To what extent do you think the composing tasks might be enjoyable?
3. Compared to other musical activities you normally do at school, such as singing and listening, how interesting do you think the chance to compose music will be?
4. Compared to other musical activities you normally do at school, such as singing and listening, how enjoyable do you think the chance to compose music will be?

Attainment Value

1. To what extent do you think the composing tasks might be important?
2. Compared to other musical activities you normally do at school, such as singing and listening, how important do you think the chance to compose music will be?

Utility Value

1. To what extent do you think the composing tasks might be useful?
2. Compared to other musical activities you normally do at school, such as singing and listening, how useful do you think the chance to compose music will be?

Perceived Cost

1. To what extent do you think the composing tasks might be challenging?
2. To what extent do you think the composing tasks might be easy?
3. Compared to other musical activities you normally do at school, such as singing and listening, how challenging do you think the chance to compose music will be?
4. Compared to other musical activities you normally do at school, such as singing and listening, how easy do you think the chance to compose music will be?

Expectancy

1. How good do you think you will be at the creative activities?
2. How hard do you think you will try on the creative activities?

Open-ended Questions

1. What did you enjoy the most about the compositional activities you completed during the past two months?
2. What did you enjoy the least about the compositional activities you completed during the past two months?
3. Have the activities changed the way you think about learning music? If yes, how?

3. Procedures

Since the teachers were not experienced in teaching music composition, they accepted to participate in a series of eight sessions of workshop on method of teaching composition. Each session of workshop lasted two hours. The researcher, who possessed a doctorate in music education, eight years of experience in teaching secondary school music and ten years in music teacher education, acted as the workshop facilitator. In addition, an expert in teaching music with Information and Computer Technology (ICT) was invited to host one of the workshops which focused on creating music with the computer. The content of other workshops included theories of music creativity and its application in the classroom, group composition, composing melodies, sound project, music arrangement, integration of performing, listening and composing activities, creative interpretation through performance, creative listening, and assessing students' compositions.

During and after the workshops they were encouraged to design and implement their own composing tasks for their students. The composing tasks were then taught between February and May, 2004. Before composing, the students were asked to respond to the pre-activity questionnaire; while after composing, they were asked to respond to the post-activity questionnaire.

During the teaching period the researcher paid two visits to observe the teaching process of every teacher. In addition, all teachers provided the researcher with their teaching plans during the observation. The number of lessons employed for the creative tasks varied in different schools, ranging from four to eight lessons of 35 to 40 minutes each. Apart from composing, all music teachers provided relevant musical knowledge and skills through listening and performing activities to nurture students' musical competence in composing.

The teachers expected their students to perform their compositions in class after they had completed the project. In order to complete the task, the students were encouraged to complete the compositions during and after class. The performance of student compositions were recorded either by video or audio recording.

The nature of the composing tasks was diverse. The first teacher invited her students to generate a story at the beginning, and then compose a piece of music to depict the story using percussion, any musical instruments and self-discovered "percussion instruments" such as keys and pencils. The second teacher developed a comprehensive computer system on teaching students to compose melodies using four devices: repeating, imitating, sequences, as well as question and answer. Every student in her class was involved in creating a melody using their own computer to compose the melody. Similarly, the third teacher employed the computer in teaching students to compose. However, she encouraged her students to create any sounds, including noises, into their compositions and to generate their own notation for their work. The final teacher encouraged her students to create a melody for an existing English nursery rhyme as lyrics, in order to generate a song.

The questionnaires were then collected and data were compiled and analysed. The software of SPSS 12.0 was employed to analyse the raw data. Mean scores and their standard deviation were calculated and compared. A series of repeated measures ANOVA were employed to measure the possible differences: 1) between the motivation measures of the groups of males and females, and instrumentalists and non-instrumentalists (between subject effect), and 2) between the motivational measures of the mentioned four groups before and after they had participated in the composing tasks (within subject effect). Furthermore, qualitative data on specific nature of students' motivation were compiled, coded and analysed.

Results

A total of 810 sets of pre- and post-test questionnaires were collected, in which 727 of them were filled with valid and comprehensive quantitative data. Out of the 727 respondents, there were 309 male students (42.50%) and 418 female students (57.50%). Students were classified as "instrumentalists" ($n = 467$, 67.24%) if they reported having studied an instrument, or "non-instrumentalists" ($n = 260$, 35.76%) if they indicated they had not taken

instrumental lessons. The pre-test and post-test data were analyzed by using the SPSS 12.0 software. The reliability of the scales was measured and a Cronbach's alpha of .945 for the pre-test and .929 for the post-test were recorded which implied a high level of reliability.

1. Quantitative analysis

Table 2 shows the mean scores and standard deviation of the four groups in terms of the six motivational measures in the pre- and post-tests. In the descriptive statistics, it is observed that:

1. in general, the differences between pre-test and post-test in all six motivational measures were small;

2. the mean scores of males and non-instrumentalists slightly increased while the mean scores of females and instrumentalists slightly decreased after the composition activity;

3. the males' mean scores of all six motivational measures had increased, after the composing activity, while the girls' means scores had decreased;

4. similarly, the non-instrumentalists' mean scores of all six motivational measures had increased while the instrumentalists mean scores had decreased;

5. the differences between males and females as well as instrumentalists and non-instrumentalists were, in general, larger in the pre-test than the post-test.

Table 2   Mean Scores and Standard Deviation of the Six Motivation Measures in the Pre- and Post-tests

Motivational Measures	Male (*n* = 309)	Female (*n* = 418)	Instrumentalists (*n* = 467)	Non-Instrumentalists (*n* = 260)	Total (*N* = 727)
			Mean (SD)		
Self-Efficacy					
Pre-test	3.97 (1.34)	4.50 (1.15)	4.52 (1.22)	3.84 (1.21)	4.28 (1.26)
Post-test	4.20 (1.24)	4.31 (1.17)	4.25 (1.21)	4.34 (1.13)	4.28 (1.18)
Intrinsic Value					
Pre-test	4.40 (1.36)	4.84 (1.26)	4.76 (1.30)	4.46 (1.34)	4.65 (1.32)
Post-test	4.68 (1.29)	4.78 (1.30)	4.65 (1.35)	4.89 (1.18)	4.74 (1.29)
Attainment Value					
Pre-test	4.08 (1.23)	4.61 (1.19)	4.48 (1.21)	4.22 (1.26)	4.39 (1.23)
Post-test	4.39 (1.21)	4.48 (1.23)	4.39 (1.26)	4.54 (1.42)	4.44 (1.22)

Utility Value					
Pre-test	4.21 (1.28)	4.72 (1.17)	4.61 (1.19)	4.32 (1.30)	4.51 (1.24)
Post-test	4.44 (1.22)	4.50 (1.22)	4.40 (1.27)	4.61 (1.10)	4.47 (1.22)
Cost					
Pre-test	4.28 (1.09)	4.63 (.88)	4.60 (.91)	4.27 (1.09)	4.48 (.99)
Post-test	4.46 (.86)	4.63 (1.01)	4.51 (1.01)	4.63 (.88)	4.55 (.96)
Expectancy					
Pre-test	4.25 (1.25)	4.76 (1.07)	4.68 (1.15)	4.31 (1.24)	4.55 (1.19)
Post-test	4.41 (1.11)	4.62 (1.24)	4.53 (1.22)	4.59 (1.15)	4.55 (1.19)
Total					
Pre-test	4.20 (1.12)	4.68 (1.05)	4.61 (1.17)	4.24 (1.21)	
Post-test	4.43 (1.08)	4.55 (1.20)	4.46 (1.23)	4.60 (1.35)	

To observe the changes between the groups in the pre- and post-tests clearly, the mean scores shown in Table 2 is reflected in Figures 1 to 6.

Self-efficacy As shown in Figure 1, males and non-instrumentalists possessed lower self-efficacy than females and instrumentalists respectively before the compositional activities. However, after completing the composing task, males and instrumentalists had increased their self-efficacy while females and instrumentalists had slightly decreased.
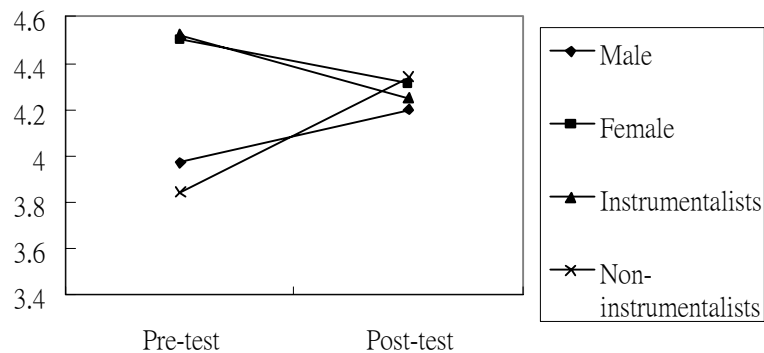

Figure 1   Mean Scores on Self-Efficacy

Intrinsic Value. As shown in Figure 2, males and non-instrumentalists reported a rather low intrinsic value towards music composition while females and instrumentalists had a relatively high intrinsic value. After the composing activity the former two groups had increased dramatically while the latter two groups had slightly decreased.
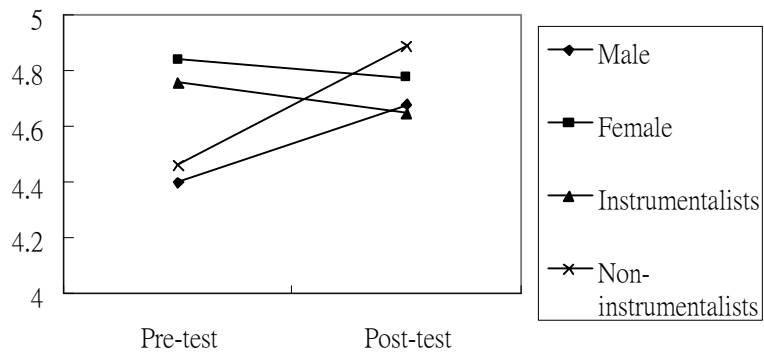
Figure 2　Mean Scores on Intrinsic Value

Attainment Value. Males and non-instrumentalists displayed an increase in attainment value, while females and the instrumentalists displayed a decrease in this aspect after the compositional activities (see Figure 3).
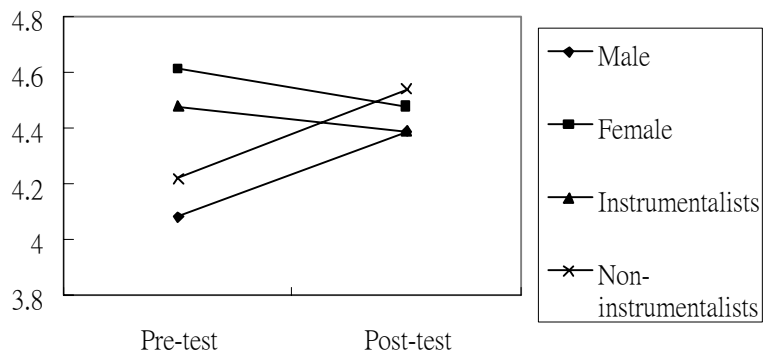

Figure 3　Mean Scores on Attainment Value

Utility Value. As shown in Figure 4, males and non-instrumentalists had another increase in utility value, whilst females and instrumentalists had decreased their utility value.
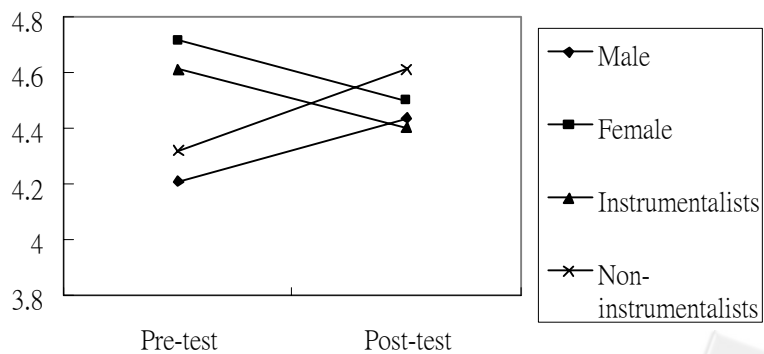

Figure 4　Mean Scores on Utility Value

Perceived Cost. Figure 5 shows the student's perceptions on the perceived cost towards composing. Non-instrumentalists and males had a rather low level but increased dramatically after the composing experience, which meant that they changed to believe more that composing was not that challenging and difficult as they thought before the creative task. However, the instrumentalists had decreased their levels of perceived cost, which means they thought that composition could be more difficult than they thought. In addition, females had almost no changes on that aspect.
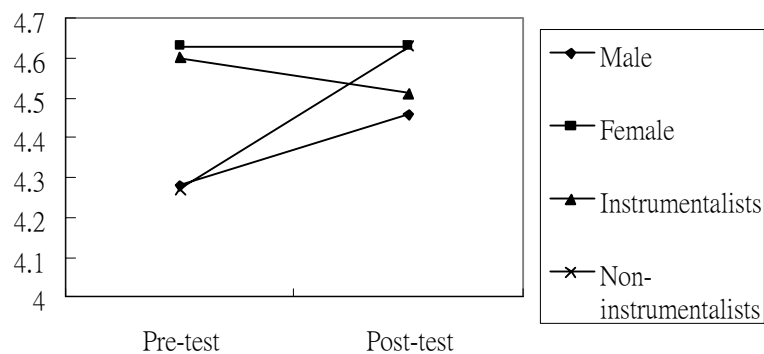

Figure 5   Mean Scores on Perceived Cost

Expectancy. Figure 6 shows the perception changes of expectancy. Similarly, males and non-instrumentalists had increased their expectancy towards composing, while the response of females and instrumentalists had decreased.
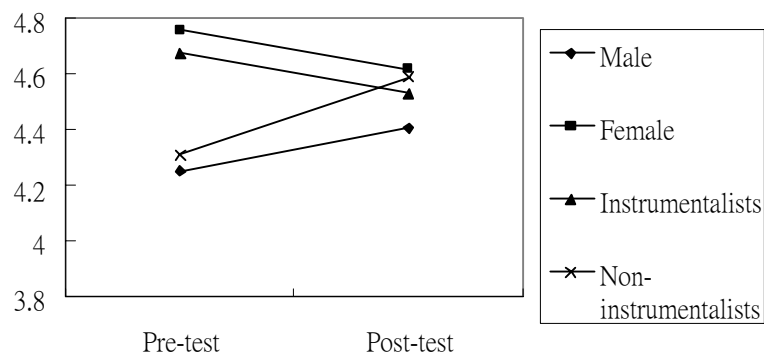

Figure 6   Mean Scores on Expectancy

2. Further statistical analysis

The next part of the analyses applied a design of repeated measures ANOVA to test: 1) if the composing experience was a significant factor affecting the motivation levels of the

students (i.e., within subject effect), and 2) if there were any differences of motivation levels between males and females as well as instrumentalists and non-instrumentalists (i.e., between subject effect). Results of within subject effects for the six motivation measures are shown in Table 3.

Table 3   Summary of Within Subject Effects for the Six Motivation Measures

Motivation Measure	Within Subject Effect (Pre-Post)	
	F	*p*
Self-Efficacy	35.561**	.000
Self-Efficacy x Gender	3.615	.058
Self-Efficacy x Learning Instrument	8.338**	.004
Self-Efficacy x Gender x Learning Instrument	2.309	.129
Intrinsic Value	4.638*	.032
Intrinsic Value x Gender	6.150*	.013
Intrinsic Value x Learning Inst.	14.403**	.000
Intrinsic Value x Gender x Learning Inst.	6.777**	.009
Attainment Value	2.488	.115
Attainment Value x Gender	12.170**	.001
Attainment Value x Instrumentalist	6.758**	.010
Attainment Value x Gender x Instrumentalist	6.082*	.014
Utility Value	.285	.594
Utility Value x Gender	10.851**	.001
Utility Value x Instrumentalist	11.130**	.001
Utility Value x Gender x Instrumentalist	2.874	.090
Cost	5.798*	.016
Cost x Gender	2.052	.152
Cost x Instrumentalist	18.577**	.000
Cost x Gender x Instrumentalist	3.048	.081
Expectancy	1.181	.278
Expectancy x Gender	6.153**	.013
Expectancy x Instrumentalist	9.220**	.002
Expectancy x Gender x Instrumentalist	1.345	.247

*$p < .05$. ** $p < .01$

3. Within subject effect

As shown in the table, there were significant differences on some of the motivation measures after the students have completed the compositional activities. Students' self-efficacy ($F(1, 657) = 35.561$, $p = .000$), intrinsic value ($F(1, 723) = 4.638$, $p = .032$), and perceived cost ($F(1, 723) = 5.798$, $p = .016$) increased significantly, which meant all the students tended to be more confident in composing music, more interested in composing, and to feel less difficult in composing after completing the composing tasks.

Concerning the factor of gender, four motivation measures were recorded to be statistically significant. As shown, males have increased significantly their intrinsic value ($F(1, 723) = 6.150$, $p = .013$), attainment value ($F(1, 717) = 12.170$, $p = .001$), utility value ($F(1, 723) = 10.851$, $p = .001$), and expectancy ($F(1, 710) = 6.153$, $p = .013$). This implies that males were more interested in composing, were more confident, felt that composing music was important in their future lives, and possessed higher expectancy in composing after completing their composing tasks.

Concerning the factor of the identity of being instrumentalists or not, all six motivation measures were recorded to be statistically significant. As shown, non-instrumentalists significantly increased their self-efficacy ($F(1, 657) = 8.338$, $p = .004$), intrinsic value ($F(1, 723) = 14.403$, $p = .000$), attainment value ($F(1, 717) = 6.758$, $p = .010$), utility value ($F(1, 723) = 11.130$, $p = .001$), perceived cost ($F(1, 723) = 18.577$, $p = .000$), and expectancy ($F(1, 710) = 9.220$, $p = .002$). These results imply that students who had not learnt to play an instrument tended to be more motivated in composing in terms of all the six measures after they had experienced in the composing tasks.

When interacting the three factors (i.e., the individual motivation measures, the gender and learning instrument), only the measure of intrinsic motivation is shown to be statistically significant. As shown in Figure 2, there is a real increase of all the non-instrumentalists and a real decrease of all the instrumentalists.

4. Between subject effect

Table 4 summarizes the results of between subject effects for the motivation measures. This aspect focuses on the significant differences between the genders, instrumentalists and non-instrumentalists, as well as interaction of these two factors.

Table 4　Summary of Between Subject Effects for the Six Motivation Measures

Motivational Measures	Between Subject Effect (Gender)		Between Subject Effect (Learning Instrument)		Interaction (Gender x Learning Instrument)	
	F	*p*	*F*	*p*	*F*	*p*
Self-Efficacy	3.436	.064	11.103**	.001	.349	.555
Intrinsic Value	15.106**	.000	.094	.760	1.395	.238
Attainment Value	23.453**	.000	.001	.972	1.919	.166
Utility Value	19.796**	.000	11.130**	.001	2.874	.090
Cost	23.539**	.000	1.119	.290	1.651	.199
Expectancy	24.017**	.000	1.803	.180	1.306	.253

** p < .001

As shown in the table, it is clear that the gender was a significant factor in the between subject effects. Statistical significant differences were found between males and females on five out of six motivational measures. As shown in Table 4, females had higher intrinsic values ($F(1, 723) = 15.106$, $p = .000$), attainment value ($F(1, 717) = 23.453$, $p = .000$), utility value ($F(1, 717) = 19.796$, $p = .000$), more positive perceived cost ($F(1, 723)$, $p = .000$), and expectancy ($F(1, 710) = 24.017$, $p = .000$) towards composing music than males. These results imply that females were more interested in composing, found composing music important and useful in their future, found composing music easy, and possessed higher expectancy than males, no matter if they had gone through the compositional activities.

On the other hand, statistical significant differences were found between instrumentalists and non-instrumentalists on only two out of the six motivational measures. It is shown that instrumentalists possess higher self-efficacy ($F(1, 657) = 11.103$, $p = .001$) and higher utility value ($F(1, 723) = 11.130$, $p = .001$) towards composing music than non-instrumentalists.

5. Analysis of Open-Ended Questions

Three open-ended questions were included in the post-activity questionnaire to collect data on students' perception towards composing activities. Qualitative data were encoded, analysed and categorised. The first question asked the respondents to identify perceived aspects of enjoyment during composing. Results show that more than 30% of the students

enjoyed the compositional activities because they could work and share music with their classmates, while a quarter of the respondents enjoyed the creative tasks and the creative process. More than 20% of the students enjoyed the creative tasks because they could perform their compositions, while about 12% of them felt a sense of satisfaction on the composing process. Other minority suggestions included the use of computer, flexibility of lessons, and "everything" of the creative tasks. Table 5 summarizes the categories of perceived aspects of enjoyment on composing music.

Table 5 Perceived Aspects of Enjoyment on Composing

Item	Frequency ($N = 810$)	%
Working and sharing with classmates	255	31.48
Creating music and its process (intrinsic value)	210	25.93
Performing student compositions (intrinsic value)	172	21.23
Sense of satisfaction (attainment value)	103	12.72
Use of the computer	19	2.35
Flexibility of lessons	6	0.74
Everything	4	0.49
Nil return	41	5.06

Perceived aspects of dissatisfaction during composing of the students seem to be more diverse than enjoyment. Approximately 20% of the students dissatisfied with the dispute among classmates and teachers during composing, while 15% of them didn't enjoy the creative process. There was another 10% of the students didn't enjoy performing their own compositions, while about 8% of them complained for the increased workload. Other minority suggestions included the use of computer, problems of facilities, lack of ideas, "everything", the teaching method of their teachers, lack of teacher support, insufficient time, and assessment. Table 6 summarises the perceived aspects of dissatisfaction on composing.

Table 6   Perceived Aspects of Dissatisfaction on Composing

Item	Frequency (*N* = 810)	%
Dispute between classmates and the teacher	157	19.38
Process of creating music	120	14.81
Playing instruments and singing during rehearsing and performing the pieces	85	10.49
Increased workload	61	7.53
Use of the computer & other technology	35	4.32
Problems of facilities	22	2.72
Lack of ideas	10	1.23
Everything	5	0.62
Teaching method and lack of support from teacher	5	0.62
Insufficient time	4	0.49
Assessment	3	0.37
Meaning unclear / Irrelevant	78	9.63
Nil return	225	27.78

When asking respondents if the creative activities had changed their mind on creating music, both positive and negative suggestions were received. However, positive comments were much more than negative (see Table 7).

Table 7   Changed Perception towards Music Learning

Item	Frequency (*N* = 810)	%
Positive		
Betterment of attitude towards music and composing	204	25.19
Learning music is interesting	128	15.80
Music learning can be diverse	29	3.58
Getting more musical knowledge	17	2.10
Negative		
Composing is boring and difficult	29	3.58
Meaning unclear / Irrelevant	20	2.47
Nil return	383	47.28

Results show that a quarter of the respondents reflected different kinds of changes on their attitude towards music and composing. The following are quotations from the

questionnaires which reflect a certain level of changes in students' perception and attitudes towards music composition:

- I realized that I can compose music.

- (When composing), communication is necessary between classmates.

- The original music is better.

- Music is more than just singing and watching videos, we can gain more knowledge through creating music.

- Creating music is not that hard.

- Not only people who can play instruments can create music.

- Music is really easy.

- Creating music does not need music background, but ideas.

- I am more confident in music.

- Music learning allows us to know each other more, gives us chance to work together, enhance our imagination and increase our interest in music.

Apart from these, more than 15% of the respondents agreed that learning music is interesting after they had experienced compositional activities in class, while about 3% of them found that learning music could be a diversified experience with different kinds of active participation including composing, listening and performing. About 2% of them enjoyed learning more musical knowledge through composing. Merely 3.5% of the respondents felt that composing is a boring and difficult activity.

Discussion

This study investigates the motivation changes of secondary students after they have experienced in music composition activities. In general, the students report mostly positive but some negative perception changes towards music composition. Male students possess lower levels of intrinsic value, attainment value, utility value, cost, and expectancy towards creating music than female students, while instrumentalists possess higher levels of self-efficacy and utility value than non-instrumentalists. After experiencing the composing tasks, however, male students have significantly increased their intrinsic value, attainment value, utility value and expectancy, while the non-instrumentalists have significantly increased their self-efficacy, intrinsic value, attainment value, utility value, cost, and

expectancy towards music composition.

1. Students' perceptions and perceptive changes towards music composition

Based on the findings from the open-ended questions, it is shown that more than 90% of the respondents reported different aspects of perceived enjoyment of composing, including the process of creating music, performing compositions by students themselves, and sense of satisfaction. These are related to intrinsic value and attainment value of students towards composing. Nevertheless, a majority of the respondents (more than 30%) points out that the opportunities for students to work and share music with others were an attribute to the enjoyment of music composition. This is a new attribute under the extrinsic motivation category that few researchers have investigated. Students reported that one aspect of the compositional activities they enjoyed was the opportunity it provided for them to be actively engaged with their peers in music class rather than listening to the teacher and responding independently. The active participation of musical experience collectively might be regarded as the core of this attribute.

Students reported four major dissatisfactions with the compositional activities:

1. Disputes that arose among peers and with the teacher;

2. The expectation for creating new music;

3. The expectation of performing the student composition; and

4. Increased workload.

These may be regarded as the perceived cost which discourages composing. These costs must be considered in relationship to several factors. First, compositional activities are not typically part of school music curriculum in Hong Kong. Such departures from tradition may be difficult for students to initially accept. The relatively short duration of the "treatment" in this study may not have afforded sufficient time for students to accept composition as a viable way to study music. Second, teaching context in Hong Kong including the organization of music classes with more than 30 students in a class and the classroom designed for large group activities does not accommodate small group work on compositional projects easily. A different teaching and learning environment may be needed for successful learning through music composition. Third, adolescents have a strong need for peer acceptance and avoid any actions that might be viewed by peers is revealing

incompetence. Self-consciousness with having to both perform musical and a personally created composition may have prevented students in this study from fully accepting the appropriateness of the compositional exercises. They may have been unwilling to take the risk of such personal exposure.

Hence, some of the students reflected that they were concerned about the increased workload when involving in composing. Traditionally music teaching and learning in Hong Kong secondary schools tend to rely on listening activities and singing; students are required to pay attention to teachers' explanation on musical knowledge and theories (Ng & Morris, 1998). However, when composing is introduced to the music class, student might find it stressful when they are required to actively participate in music making rather than passive listening. This is the perceived cost of composing – extra time and effort are needed in order to achieve well in composing music.

2. Impact of instrumental learning experience on composition motivation

Instrumental learning is regarded as another crucial factor predicting the motivation changes. As shown in this study, there is a general tendency that non-instrumentalists are motivated to compose after they have completed their creative tasks. They tend to become more confident in composing, and they appear to be more interested. Apart from that, they express a strong feeling that composing music is a kind of achievement that they should pursue. They find composing useful in their future lives but not too difficult; and they expect that they can compose well in the future. All these reflect that, before the composing activity, those non-instrumentalists may possess an illusion about music composition. They regard music composition is a kind of activity that only those "musicians" can do while other "ordinary people" cannot achieve.

Traditionally, the public has established its general perception that learning music means to learn to play an instrument by reading traditional notation. However, the compositional activities reported in this study may defy this assumption that they allowed students to compose music without learning to read the traditional notation and instrumental playing. The identity as "non-musicians" may have hindered many students to compose music. Importantly, this study reveals that non-musicians can also compose and they have increased their motivation and self-efficacy.

On the contrary, instrumentalists tend not to welcome compositional activities as non-instrumentalists do. After composing, they tend to slightly lower their intrinsic motivation, sense of attainment, sense of usefulness of composing, and to perceive composing as a high cost activity, as well as that they have lowered their expectancy in composing, which predicts that they tend not to compose in the near future.

One of the attributes leading to such a result might be related to the nature of the composing tasks. As observed in the class teaching, the composing tasks tended to address the needs of those students who possessed very limited musical experience and competence. For instance, one of the four projects employed the concept of "sound projects" (see Paynter & Aston, 1970; Paynter, 1992) which were designed for students to compose a piece without using traditional notation. This might impact on generating a perception of the instrumentalists that they were composing a piece of "unreal" music that didn't require any musical knowledge and skills. Meanwhile, since students didn't need to learn too much about music theory and knowledge for composing the sound projects, those non-instrumentalists might therefore develop their confidence in composing which leads to the uplifting of motivation scores.

3. Gender issue

Gender is shown to be one of the two significant factors affecting the motivation of secondary students in composing music. According to the literature, female students tend to be more motivated and successful in pursuing music. For example, in their experimental study, Wilson and Wales (1995) found that girls produced more mature compositions in terms of melody and rhythm than did the boys. Miyamoto and Lind (1997) found that females are more intrinsically motivated than males when making decision in enrolment of music classes. Phillips (1995) suggests that it is more difficult to recruit and retain male students into vocal music programmes. Sloboda (1988) argues that it is common to see better performances of females than males in music developmental research.

There seems to be an existing belief that males are "less musical". Thus it is not surprising in this study to find that male students expressed generally lower levels of motivation in music composition than females. However, a significant increase in motivation has been recorded after they have completed the task. It is thus suggested that males can be motivated in music composition if effective strategies are employed and

interesting compositional projects with appropriate level of challenge are offered. On the contrary, female students were more motivated than males before involvement in composing, and slightly decreased in their motivation levels as a result of their involvement. It is typical that girls are more successful in general music class activities of singing and listening. The requirement of active participation in composition may lead to unfamiliarity and uncertainty which bring them out of their comfort zone. Music teachers should therefore focus on how to maintain girls' motivation in composition. How to break the perception of "great composers are men" is another issue for music teachers.

Implications for teaching

Based on the findings from this study, a number of implications for teaching music composition in class can be proposed. Since the levels of self-efficacy of students with different background in instrumental learning are distinguished, when designing composing tasks, music teachers should consider addressing the different musical competences and experience of students. For instance, different tasks or levels of requirement for different identities and competence of students might be a solution to maintain high motivation for both groups of instrumentalists and non-instrumentalists. Instrumentalists might be good leaders in group composition in which they could facilitate the process.

The composing task should more or less require students to apply what they have learnt in music. The completion of a piece of "real music" which includes melody, harmony, instrumentation, dynamics, and phrasing is a normal goal of music teachers when designing the creative task. Composing modern music, or "sound projects", can be introduced only when students have developed a solid foundation on historical, social and cultural perspectives in the traditional music genres. An appropriate level of competence requirement of the creative task is necessary (Elliott, 1995). Music teachers are necessary to understand their students' musical competence before they are involved in designing creative tasks.

During the implementation of the creative task, a two-way communication between the students and the teacher is important (Leung, 2004). After assigning and explaining the creative task to students, the teacher might negotiate with the students on how the task should and could be done. Students' sense of ownership towards the creative task, which can

be achieved through the negotiation process, is a crucial factor affecting their involvement and their motivation for achievement.

It is common to see students who hesitate to perform their own compositions; teachers should therefore be sensitive enough to detect the students' anxiety and try to help with different devices such as performing the pieces by the instrumentalists of the class or by the computer. Teacher might expect but should not insist that the students would perform their own work (Hogg, 1994). In addition, music teachers might consider allowing more class time for students' composition rather than requiring them to complete their composition as homework. As some of the students regarded the composition as extra workload, assigning composition as homework may overload students. Furthermore, music teachers cannot facilitate students in their composing process if it is assigned as homework. Music classes should be activity-based with different kinds of musical experience. Motivated students would spend their free time on composing even if the teacher does not require them to do so.

Since some of the students tend to increase their motivation in composing after they are exposed to compositional activities, music teachers should therefore incorporate creative music-making activities to their largest extent in their teaching so that students' motivation on composing could be elevated. If students have no experience in composing, they would regard composing as something that is to be done by those "great musicians" and geniuses. As evident in this study, all students, especially who had no formal training in instrumental playing had increased their confidence towards composing. This is an important indicator suggesting that the composing activity itself may be the most effective element to motivate students to compose music.

Concerning the gender issue, it is necessary for music teachers and other stakeholders to abandon the belief that male students are less competent or motivated to pursue musical achievements. Since it is common to find both genders in the same classroom, music teachers have to face the fact that boys and girls are learning together in all aspects. Regarding the female as a stronger gender in music might bring unnecessary difficulties for males to pursue music which may be detrimental to their motivation.

In conclusion, this study provides evidence that composing experience may affect the motivation of students in composing. The gender and the previous instrumental learning experience may affect the motivation levels and their perception changes after experiencing

compositional activities. While females have been regarded as a group who are more capable and interested in music, males may increase their motivation in composing music if they are involved in such kinds of activities with appropriate guidance. Instrumentalists are proved to be more motivated to compose. However, non-instrumentalists may be motivated to a large extent to compose if they are involved in compositional activities. These imply that appropriate guidance may affect the teaching and learning effectiveness of music composition. The music teachers should consider all these factors affecting students' motivation during designing and implementation of compositional projects.

Acknowledgement

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