# CREATIVE EDUCATION, MUSIC PRACTICES, AND GENDER DIFFERENCES AMONG YOUNG CHINESE STUDENTS

Wai-Chung Ho

Academy of music, Hong Kong Baptist University, Hong Kong, China

***ABSTRACT***

*Over the last two decades, China has placed more emphasis on learning and practice in the process of fostering creativity in school education. Music inflames the mind and is the key to creativity. Music practices have drawn the attention of many scholars fascinated with their creative properties in both musical and non-musical domains. With particular reference to Shijiazhuang (the capital and largest city in northern China's Hebei Province), this study aimed to examine the under-researched connection between gender, education, and creative music practices (broadly described as music as a culture of imagination and real-time practice in the learning of diverse music styles and in the participation of music activities in formal and informal learning contexts) as perceived by young Chinese students. The study employed a self-reported survey questionnaire distributed to a sample of students aged eight to 17 attending Grade 4 through Grade 9 in 10 schools located in the city of Shijiazhuang (N = 2,015) conducted between 2019 and 2020. Generally speaking, girls were more positive regarding the value of creativity in school music education, as well as the music practices of diverse music cultures and music activities. This paper will conclude with a debate on the ways that "gender" is comprehended, carried out, and discerned in response to the students' influential sources and their preferred school subjects in learning creativity, their preferred music styles, and their preferred participation in music activities in both school music lessons and extracurricular activities in learning creativity in the Chinese context.*

***KEYWORDS***

*Gender, creative education, music practice, music education, young Chinese students*

## 1. INTRODUCTION

The most important creativity theorists have marked out creativity as socially constructed, physically incarnated, and dynamic (see Csikszentmihalyi, 1988, 1999; Glăveanu, 2015; Sternberg, 2015). Creativity has been described as the interaction between aptitude, process, and environment through which an individual generates a product that is identified, within a social context, as new and worthwhile (Plucker, 2018). This is also in line with contemporary theories of creativity, which perceive creativity as the interaction of cultural, social, and personal surroundings (see Csikszentmihalyi, 1990; Mellou, 1996). According to Oakley (1972), parents are engaged in gender socialisation, but society holds the largest influence in constructing gender. As children get older, gender behaviour expands beyond the family/parents and includes peers, teachers, the media, and the Internet (see Aubrey & Harrison, 2004; Döring & Maduagwu & Agulanna, 2020; Witt, 2000). Girls' opinions are more inclined "to be shaped by how parents, siblings, peers and teachers manage their mobility, freedom, sexuality and appearance", while at the same time boys' opinions are more powerfully "shaped by how their peers reinforce stereotypically masculine attributes and behaviours" (Nandyose et al., 2018, p. 9). Young people

have also reported that they wanted to change their physical appearance, values, attitudes, and abilities with a view to imitating those of their idols (Boon, 2001; Zsila et al., 2021).

Creativity is often evaluated qualitatively as it happens through social interactions in educational settings where teachers and students work mutually on creative undertakings, such as intra- or extracurricular arts, dance, and STEM classes (Burnard & Younker, 2008; Griffiths & Woolf, 2009). However, evidence on gender differences in creative accomplishments, particularly at the highest level, has suggested that there have been more male geniuses and distinguished males in the sciences, arts, literature, music, and technical development compared with women (Eccles, 1985; Reiss, 1999). Considering these controversies, what can be substantiated is that there is no consensus in the literature about whether or not differences in creativity support one gender or another (Nakano & Wechsler, 2006).

Given the extensive debate identified in the literature on gender differences, creativity, socialisation, and education, the present study aimed, as its primary objective, to identify the trend reported in empirical research in China that has investigated gender differences in creativity, music practices, and school music education. The current study used statistical data from a survey questionnaire to describe and compare the current music experiences of boys and girls in school. This paper will conclude with a discussion of the ways that "gender" is conceived, practiced, and felt (or understood) in the Chinese context of teaching and learning creativity in school music education. First, it is necessary to briefly establish the contexts of gender, creativity, and music education.

## 2. GENDER, CREATIVITY, AND MUSIC EDUCATION

Gender in music education is often comprehended as the search for equality or differences between women and men; indeed, both Reimer (1995) and Woodford (1996–1997) referred to this. For Green (2008), all aspects of the meaning of music are socially constructed, and schools should provide an opportunity for students to become musically socialised through a broader engagement with music. As stated by Green (1994), "We learn our gendered relationships with music, not only from wider historical, political and educational contexts, but also through musical experiences itself" (p. 99). Schools help to reproduce girls' and women's, boys' and men's long-standing historical music practices (Green, 2002).

The gendering of music places constraints on music perception and participation that cause a brutal cycle in music education. Boys' and girls' preferences in music genres and activities are not associated with each other, and a gender gap exists in school music education (Ho, 2003). Christenson and Peterson (1988) pointed out that men and women respond to music in different ways (p. 265). Other researchers have suggested that there are gender differences relative to attitudes towards singing (Barham, 2001; Campbell, 1998; Koza, 1993), listening (Green, 1997; Hanley, 1998), playing musical instruments (Hallam et al., 2020; Sax, 2005), the use of information technology (Armstrong, 2016; Hargreaves, Comber, & Colley, 1997),music preferences (Harrison & O'Neill, 2000; Millar, 2008), peer relationships (Collins, 2009; Green, 1997; O'Neill, 2005), and image and self-perception (Collins, 2009; Green, 1998). The practice of singing is typically coded as feminine and holds a lower status than the masculinised practices of playing an instrument and composing music (Hansen, 2021). With regard to the association between gender, the listener's musical taste, and musical preferences, a number of studies have shown that gender differences in music preferences are based on gender-role socialisation (North, Hargreaves, & O'Neill, 2000). Hargreaves et al. (1995) investigated the music preferences of high school students and noted that boys preferred heavy metal and rock music and girls preferred reggae, chart pop, jazz, and classical and folk music.

Moreover, gender differences have been found in students' feelings towards, enjoyment of, and beliefs about their creative music practices. Many studies (e.g., see Auh, 1997; Beegle, 2010; Burnard, 2012; Kiehn, 2003) have considered composition and improvisation in classroom settings and have strived to relate creative flair for these activities to particular variables. Green (1997) found an undeviating alliance between gendered information inherent in the composition and the gender of the composer: "music can delineate a notion of femininity or masculinity owing to the gender of the composer" (p. 131). Kiehn (2003) indicated that males' achievements in creative music improvise on were significantly higher compared with females. The study of Mawang, Kigen and Mutweleli (2019) also revealed a significant gender difference in music creativity, with males scoring higher than females. However, Auh's (1997) findings were divergent as they recounted that gender was not a significant factor in creative composition. Similarly, Schmidt (2005) reported a non-significant variation in gender regarding creative performing. The gendered understanding of creativity has only been indicated in the field of popular music production (Wolfe, 2020), as well as the issue of creative practices and historical processes in computer music, electronic music, and sound art in the politics of gender in higher education (Born & Devine, 2016). Considering that music technology is now essential to many music-making practices across all sectors of education, Armstrong (2016) proposed that gender-technology connections had an intense effect on the approaches that adolescents used to compose music and how gendered identities in the technologised music classroom were built (also see Hopkins & Berkers, 2019). Moreover, girls tended to avoid performing with highly technological or electronic instruments, especially those associated with popular music, most notably, drums and electric guitars (Green, 2002).

While gender and music are linked, gender should not be a determining factor in creativity. Parents, music teachers, peers, and mass media may heavily influence a student's choices. Gender differences in creative achievements can be explained by a combination of environmental factors, such as gender differences in accessing schooling and resources, different expectations for and socialisation of boys and girls, as well as males' domination of the standards by which an achievement is judged as creative (Baer, 1999, 2005). The questions raised in this paper will address the influential factors of creativity education, the learning of music genres, and participation in music activities for the cultivation of creativity and will examine what these mean for boys and girls in the Chinese context.

## 3. THE STUDY

This section will explore the background of China's creativity education, the objective, the research questions, and the procedure and instruments of the study in regard to creative music practices and gender differences.

### 3.1. Background of gender education

Though China implemented "Nine-Year Compulsory Education" as the basic school education in 1986, girls do not have the same school opportunities as boys do. Shaped by their mother's traditional, socially accepted discriminatory roles, unfortunately, girls are usually the first to sacrifice their education, either voluntarily or involuntarily, to reduce the family's burden of the cost of education and to help with housework or fieldwork (Liu, 1998). Over the last three decades, rapid economic growth has affected gender inequality as economic changes have affected both the education system and the return to education and the ability of parents to send their children (including their daughters) to school (see Wang & Klugman, 2019). Nonetheless, some studies have shown that there are still significant disparities in access to education between females and males (e.g., see Brussevich, Dabla-Norris, & Li, 2021; Davis et al., 2007; Murphy,

2018). In 1990, 2.48 million children aged seven to 11 were found not attending schools, and 2.14 million (86.4%) of them were girls (Liu & Carpenter, 2005, p. 280). Moreover, gender inequality in China's education varies by region (i.e., rural versus urban) and grade level. Overall, females linger far behind males in the enrolment of science and engineering majors at Chinese universities (Guo et al., 2010). However, some studies have found that gender inequality in Chinese education has improved (see Lee, 2014; Liu, 2004; Zeng et al., 2013).

## 3.2. Background of Creativity Education

Currently, Chinese culture places more emphasis on learning and practice in the process of promoting creativity (Chien, 2010; Huang & Szente, 2014; Kuhn, 2016; Lee & Yuan, 2018; Ministry of Education, 2017, 2022; Mullen, 2017). In addition to cultural and societal backgrounds, both the school environment and the family environment play a decisive role in expanding Chinese children's creativity (Huang & Szente, 2014; also see Liang et al., 2021; Niu & Sternberg, 2003).

Overall, there are clear gender differences in student learning in school (Gong, Ding, & Tsang, 2014; Liu et al., 2021) and in creative potential (Wang & Keane, 2020; Zhang et al., 2018). Ho (2019) maintained that there is possible importance in encouraging creativity, cultural awareness, and music activities in creativity education through school music education. These variations in the associations between creativity and academic achievement, partly, have been demonstrated by the divergent recognition of the gender roles of boys and girls in most male-dominated cultures involving China (Gralewski & Karwowski, 2016; Niu, 2012). Some studies have also attempted to explore the factors that influence the relationship between gender and creativity in school students (e.g., see Liu et al., 2021; Zhang et al., 2018). Mullen (2017) observed "examples of creative work" in Chinese primary schools that "fed stereotypical gender-based images, such as of males (fathers) as powerful and females (mothers) as nurturing" (p. 51).

With particular reference to Shijiazhuang (the capital and largest city in northern China's Hebei Province), this study aimed to examine the under-researched connection between gender, education, and creative music practices (broadly described as music as a culture of imagination and real-time practice in the learning of diverse music styles and in the participation of music activities in formal and informal learning contexts) as perceived by young Chinese students. The study collected statistical data from a survey questionnaire to examine and compare the perceptions of boys and girls attending Grade 4 through Grade 9 in the city of Shijiazhuang. Shijiazhuang is a major industrial city in northern China that is located in the Beijing-Tianjin-Shijiazhuang Hi-Tech Industrial Belt, and it has expanded four potential industries of cultural creativity – artistic creation, tourism, finance, and science and technology services. Schools in Shijiazhuang City pay more attention to motivating school students to learn through fun and to use creativity to make learning fun (Great Wall Net, 2017; Shijiazhuang Education Bureau, 2021).

## 3.3. Objective and Research Questions

This study hypothesised that the gendered distinction of creativity and creativity in music education takes part in students' perceptions of their school learning. The objective of this study attempted to expand on prior research by exploring the perspectives of boys and girls through self-reports of their creative possibilities, sources of creativity education, and learning of creativity in their music practices through school music education. This matter will be further investigated in the research findings and in the discussion section. This work is part of a broader study that focused on three particular research questions:

a. What are the differences between the boys' and girls' self-reported influential factors

and creative preferences for school subjects?

b. To what extent do boys and girls believe that the learning of diverse music styles is an important source of creativity education?
c. Are there any gender differences with regard to stereotypes in the boys' and girls' perceived motivation for creativity education in both classroom music and extracurricular activities?

## 3.4. Procedure and Instruments

The survey questionnaire targeted senior primary and junior secondary school students (i.e., Grade 4 through Grade 9, ages eight to 17). The reason for selecting the target group of students was that these students were proficient in answering the written questionnaires individually. Many secondary schools did not permit their senior grade students to participate in the survey as they had a very tight-fitting timetable to prepare for the National College Entrance Examination (commonly known as the *gaokao*).

With a view to having participants from diverse backgrounds, schools from different districts in Shijiazhuang were invited, by email and by phone, to join in the survey between February and September 2019. A copy of the questionnaire and information sheet was sent to schools for approval. Upon approval granted by the school authorities, the main survey was administered from late 2019 to late 2020. During the COVID-19 pandemic period, schools deviated from their normal teaching practices, and thus it took the study a longer time to complete the data collection.

In line with the institution's recommendations and approval of research ethics, the student participants answering the questionnaire were guaranteed entire anonymity. The students were given about eight to 10 minutes during in-school lessons or class periods to finish the questionnaire as recommended by the instructions given by the school principals and their individual teachers. Guides were given to the schools/teachers to evenly administer the questionnaires to different forms of students within school cohort groups, ranging from Grade 4 to Grade 6, and Grade 7 to Grade 9, respectively. The teachers who distributed the surveys also performed as facilitators in collecting and sending back the questionnaires. All answered questionnaires were returned by the outset of 2021.

The survey questionnaire was self-manged via the instructions, which were straightforward and easily accessible, and in asking for the views of a large sample of student informants in an economical and effective manner (Check & Schutt, 2012). According to the survey requirements, quantitative analysis (e.g., mean, standard deviation, percentage, cross-tabulation description, independent samples t-test) was conducted using the Statistical Package for Social Sciences functions. The questionnaire included closed items with multiple-choice answers and structured ratings using a 5-point Likert scale (from 1 = "highly disagree" to 5 = "highly agree") to allow the students to express degrees of agreement, significance, and rate of occurrences. The survey disregarded missing or invalid responses. In line with the three research questions, the survey questionnaire served the following purposes:

1. To provide students' demographic information and to assess their creative potential in their daily lives;
2. To exhibit their perceived sources that influence their creativity education;
3. To examine the students' attitudes towards the values of creativity in the music subject;
4. To discover their views on the values of creativity education and their interest in learning creativity through the implementation of diverse music cultures; and

5. To assess the importance of creativity for both genders through the students' participation in the music activities of listening, performing, and composing/creating in both formal school music and extracurricular activities.

## 4. MAJOR FINDINGS OF THE STUDY

The data reported in this section was obtained from a sample of 10 co-educational schools, including five government primary schools and five government secondary schools, distributed in the city of Shijiazhuang.

### 4.1. Participants

Data were drawn from 2,015 students attending Grade 4 through Grade 9 in 10 Chinese schools. All 10 schools sampled were co-educational schools distributed in the city of Shijiazhuang. Among the valid responses, 971 (48.21%) were boys, 1,043 (51.76%) were girls, and one was unknown gender (0.05%). Among the valid responses, the distribution of boys and girls was 970 boys (two aged eight or younger; three aged nine; 38 aged 10; 162 aged 11; 266 aged 12; 239 aged 13; 179 aged 14; 74 aged 15; and seven aged 16) and 1,042 girls (one aged eight or younger; four aged nine; 65 aged 10; 166 aged 11; 228 aged 12; 280 aged 13; 218 aged 14; 71 aged 15; six aged 16; and three aged 17). A 5-point scale (from 1 = "very much dislike" to 5 = "very much like") was adopted to analyse the students' evaluations of their liking of music – for the boys the mean score was 3.85 (SD = 1.08) and for the girls it was 3.99 (SD = 0.95). Among the valid responses, 709 boys (35.31%) and 714 girls (35.56%) answered that they were instrumental learners. The respective means for the boys and girls claiming that they liked music (not referring to any particular music type) were 3.82 (SD = 1.07) and 4.02 (SD = 0.93) (from 1 = "very much dislike" to 5 = "very much like"). Among them, the named musical instruments were piano (52 boys and 81 girls), guitar (71 boys and 26 girls), guzheng (a Chinese plucked zither, 11 boys and 42 girls), and erhu (a two-stringed Chinese vertical fiddle, three boys and two girls).

### 4.2. Self-Assessment of Creative Potential

The student participants were asked whether they had the potential to be creative and to espouse creativity to make their life more appealing. Of the valid responses, 200 (20.90%) boys and 173 (18.08%) girls opted for "highly agree" and 18 (1.88%) boys and 12 (1.25%) girls chose "highly disagree" for having creative potential to make their life more exciting. The respective overall means of the boys and girls attending senior primary grades were 3.97 (SD = 1.09) and 3.92 (SD = 1.03), and for the junior secondary students the respective overall means of the boys and girls were 3.57 (SD = 1.16) and 3.64 (SD = 1.05) (from 1 = "highly disagree" to 5 = "highly agree"). The independent samples t-test showed that there was a significant difference between the scores of the boys (M = 3.78, SD = 1.30) and those of the girls (M = 3.80, SD = 1.23), [$t(2011) = -0.250$, $p = 0.010$] across the six grades.

### 4.3. Important Sources of Creativity Education

Students could choose more than one response to questions concerning their creativity education and influences. Among the 1,963 valid responses, the top three responses of students' most significant sources of creativity education were "school music teachers" (317 boys and 369 girls), "parents" (169 boys and 154 girls), and "the Internet" for the boys (105) and "popular music idols" for the girls (132) (see Table 1).

Table 1. Top ten significant sources of creativity education for the boys and girls

| Sources | Gender | Number of Valid Responses | Rank |
|---|---|---|---|
| School music teachers | Boys | 317 | 1 |
| | Girls | 369 | 1 |
| Parents | Boys | 169 | 2 |
| | Girls | 154 | 2 |
| The Internet | Boys | 105 | 3 |
| | Girls | 97 | 5 |
| Popular music idols | Boys | 84 | 5 |
| | Girls | 132 | 3 |
| Private instrumental tutors | Boys | 90 | 4 |
| | Girls | 101 | 4 |
| Friends | Boys | 39 | 6 |
| | Girls | 52 | 6 |
| Mass media (e.g., radio and/or television) | | | |
| | Boys | 32 | 7 |
| | Girls | 27 | 8 |
| Classmates | Boys | 30 | 8 |
| | Girls | 29 | 7 |
| Siblings | Boys | 28 | 9 |
| | Girls | 25 | 10 |
| Musicians of classical music | Boys | 12 | 10 |
| | Girls | 29 | 9 |

Cross-tabulation analysis discovered that more primary school students of both genders maintained higher responses for “school music teachers”, “parents”, “private instrumental tutors”, and “friends”, while the junior secondary school students of both genders had higher responses for “classmates”.

When the students were asked about the support and encouragement given by their school music teachers, they generally maintained that it was important, with the respective responding means of 3.92 (SD = 1.15) for the boys and 4.04 (SD = 1.15) for the girls (from 1 = “strongly disagree” to 5 = “strongly agree”). Regarding the t-test results for their perspectives on the importance of school music teachers in learning creativity, it was indicated that there was a significant difference between the boys and girls [$t(1931) = -5.121$, $p = 0.000$].

## 4.4. Perceptions of the Introduction of Creativity into School Subjects and the Values of Creativity Education in School Music Education

In this age of innovation, creative thinking and creative skills are considered essential educational competencies for all students, and they play a vital role in designing classroom settings as well as effective instruction to promote student’s creativity. In this study, the students were asked to indicate their level of agreement that creativity should be introduced in school subjects in school learning (from 1 = “strongly disagree to 5 = “strongly agree”). The assessed subjects included music education; arts education; Chinese language education; English language education; mathematics education; personal, social, and humanities education; physical education; science education; and technology education. Among the valid responses, the most popular preferred school subject among the boys was science education (M = 4.25, SD = 1.10), while for the girls it was arts education (M = 4.23, SD = 1.05) (see Table 2).

Table 2. The boys' and girls' ratings for the introduction of creativity into school subjects

| School Subjects | Gender | Mean* | Standard Deviation | Rank | N |
|---|---|---|---|---|---|
| Science education | Boys | 4.25 | 1.10 | 1 | 956 |
| | Girls | 4.06 | 1.13 | 3 | 1,030 |
| Arts education | Boys | 4.22 | 1.08 | 2 | 1,083 |
| | Girls | 4.23 | 1.05 | 1 | 1,050 |
| Music education | Boys | 4.12 | 1.03 | 3 | 1,108 |
| | Girls | 4.20 | 1.10 | 2 | 1.062 |
| Technology education | Boys | 4.15 | 1.12 | 4 | 933 |
| | Girls | 4.05 | 1.07 | 4 | 1,008 |
| Mathematics education | Boys | 4.11 | 1.15 | 5 | 950 |
| | Girls | 3.90 | 1.07 | 7 | 1,030 |
| Chinese language education | | | | | |
| | Boys | 4.02 | 1.15 | 6 | 950 |
| | Girls | 3.97 | 1.10 | 6 | 1,030 |
| English language education | | | | | |
| | Boys | 3.91 | 1.25 | 7 | 952 |
| | Girls | 4.01 | 1.12 | 5 | 1.028 |
| Personal, social, and humanities education | | | | | |
| | Boys | 3.85 | 1.15 | 8 | 752 |
| | Girls | 3.90 | 0.97 | 7 | 809 |
| Physical education | Boy | 3.85 | 1.34 | 8 | 747 |
| | Girls | 3.82 | 1.28 | 8 | 788 |

**Note:** *From 1 = "highly disagree" to 5 = "highly agree".

When asked about their perceptions of the values of school music education, the five most popular significant components among the boys and girls were "to increase my musical knowledge" (522 [46.26%] boys and 604 [53.64%] girls), "to understand diverse cultures" (522 [48.07%] boys and 564 [51.93%] girls), "to cultivate my interest in music" (436 [47.19%] boys and 488 [52.81%] girls), "to learn how to appreciate music" (442 [48.25%] boys and 472 [51.64%] girls), and "to cultivate my musical imagination" (414 [47.42%] boys and 459 [52.58%] girls).

## 4.5. Students' Perceptions of Music Genres for Creativity Education

The students were asked whether they considered that their creativity could be developed if they understood more about diverse music genres. Broadly, the girls' responses (M = 3.96, SD = 1.17) equated to a slightly higher mean value compared with that of the boys' responses (M = 3.83, SD = 1.17) (from 1 = "highly disagree" to 5 = "highly agree") for experiencing creativity through culturally diverse music. Among the overall responses, contemporary Chinese classical music (defined as modern Chinese music composed for Chinese musical instruments and/or Western musical instruments as an extension of traditional Chinese music) was the most welcomed music genre in the learning of creativity, while blues and jazz music were the least welcomed (see Table 3). Comparatively, the girls maintained slightly higher responding means than the boys for all the chosen genres in this study (see Table 3).

Table 3. The boys' and girls' ratings of various music genres for the integration of creativity in classroom music lessons

| Music Genres | Gender | Mean* and Standard Deviation | Rank |
|---|---|---|---|
| Contemporary Chinese classical music | Boys | 3.86 (SD = 1.27) | 1 |
| | Girls | 3.95 (SD = 1.14) | 1 |
| Chinese popular songs | Boys | 3.79 (SD = 1.39) | 2 |
| | Girls | 3.90 (SD = 1.28) | 2 |
| English popular songs from the United States and the United Kingdom | | | |
| | Boys | 3.71 (SD = 1.39) | 3 |
| | Girls | 3.79 (SD = 1.28) | 3 |
| Traditional Chinese music | Boys | 3.41 (SD = 1.35) | 5 |
| | Girls | 3.63 (SD = 1.22) | 4 |
| Chinese folk songs | Boys | 3.49 (SD = 1.38) | 4 |
| | Girls | 3.52 (SD = 1.30) | 5 |
| Western classical music | Boys | 3.18 (SD = 1.43) | 6 |
| | Girls | 3.27 (SD = 1.34) | 6 |
| Rap or hip-hop | Boys | 3.11 (SD = 1.53) | 7 |
| | Girls | 3.21 SD = 1.42) | 7 |
| English folk songs from the United States and Europe | | | |
| | Boys | 3.06 (SD = 1.45) | 8 |
| | Girls | 3.20 (SD = 1.36) | 8 |
| Other world music such as African and Indian music | | | |
| | Boys | 2.97 (SD = 1.53) | 9 |
| | Girls | 3.07 (SD = 1.41) | 10 |
| Western musicals | Boys | 2.94 (SD = 1.48) | 10 |
| | Girls | 3.19 (SD = 1.42) | 9 |
| Japanese popular songs | Boys | 2.92 (SD = 1.54) | 11 |
| | Girls | 3.03 (SD = 1.54) | 13 |
| Blues and jazz music | Boys | 2.83 (SD = 1.51) | 12 |
| | Girls | 3.07 (SD = 1.42) | 10 |
| Korean popular songs | Boys | 2.80 (SD = 1.52) | 13 |
| | Girls | 3.05 (SD = 1.51) | 12 |

**Note:** * From 1 = "highly disagree" to 5 = "highly agree".

The independent samples t-test showed that there was a significant difference in the scores of students' perceptions of learning diverse music genres in creativity education between the boys and the girls regarding traditional Chinese music [$t(1947) = -1.847$, $p = 0.000$], Korean popular music [$t(1925) = -3.850$, $p = 0.006$], and rap or hip-hop [$t(1923) = -0.217$, $p = 0.002$]. Cross-tabulation analysis discovered that more secondary school students of both genders maintained higher responses for the increase of creativity in learning diverse music genres, with the average means of 3.82 (SD = 1.12) and 3.98 (SD = 1.04) for the respective junior secondary school boys and girls, while the corresponding means for the respective senior primary school boys and girls were 3.40 (SD = 1.47) and 3.43 (SD = 1.39).

## 4.6. Students' Perceptions of Music Activities in Creativity Education

This study attempted to explore the students' preferred activities conducted in music lessons. When asked to consider music activities associated with creativity that should be taught in school music lessons, the three most preferred music activities among all the students were "singing", "music appreciation", and "improvisation" (see Table 4). Overall, compared with the girls, the boys maintained higher percentages for the activities of "music composition with technology" and "music composition without technology" (see Table 4).

Table 4. Preferred music activities associated with creativity taught in school music lessons

| Activities | Gender | Number of Valid Reponses | Rank |
|---|---|---|---|
| Singing | Boys | 526 | 1 |
| | Girls | 616 | 1 |
| Music appreciation | Boys | 469 | 2 |
| | Girls | 500 | 2 |
| Improvisation | Boys | 393 | 3 |
| | Girls | 473 | 3 |
| Music composition without technology | Boys | 334 | 4 |
| | Girls | 294 | 8 |
| Music composition with technology | Boys | 334 | 4 |
| | Girls | 293 | 9 |
| Music and movement | Boys | 294 | 6 |
| | Girls | 352 | 4 |
| Instrument playing | Boys | 292 | 7 |
| | Girls | 352 | 4 |
| Music theory | Boys | 276 | 8 |
| | Girls | 267 | 10 |
| Music and storytelling | Boys | 276 | 8 |
| | Girls | 329 | 6 |
| Music and art | Boys | 221 | 10 |
| | Girls | 302 | 7 |

In particular, the students were asked their agreement with the integration of creativity in three areas: (1) music performing; (2) composing/creating music; and (3) the use of modern technology in composing/creating music. The boys' and girls' means for these respective three activities were 3.20 (SD = 1.33) and 3.26 (SD = 1.25); 3.22 (SD = 1.34) and 3.23 (SD = 1.23); and 3.18 (SD = 1.34) and 3.22 (SD = 1.22) (from 1 = "highly disagree" to 5 = "highly agree"). The independent samples t-test showed that there was a significant difference in the scores for the students' perceptions of the incorporation of creativity in music performing [$t(1985) = -3.627$, $p = 0.000$] and composing/creating music [$t(1993) = -3.462$, $p = 0.001$] across all grades, correspondingly.

The most popular extracurricular music activities through which the boys and girls wanted to learn creativity was "popular music class" and "music appreciation", correspondingly (see Table 5).

Table 5. The boys' and girls' preferred extracurricular music activities in creativity education

| **Activities** | **Gender** | **Number Valid Responses** | **Rank** |
|---|---|---|---|
| Popular music class | Boys | 292 | 1 |
| | Girls | 298 | 2 |
| Music appreciation | Boys | 284 | 2 |
| | Girls | 375 | 1 |
| School choir | Boys | 213 | 3 |
| | Girls | 296 | 3 |
| School orchestra | Boys | 186 | 4 |
| | Girls | 192 | 7 |
| Music and art | Boys | 184 | 5 |
| | Girls | 279 | 4 |
| Learning composing | Boys | 184 | 6 |
| | Girls | 242 | 5 |
| Electronic music class | Boys | 173 | 7 |
| | Girls | 131 | 13 |
| Musicals | Boys | 155 | 8 |
| | Girls | 231 | 6 |
| Jazz singing | Boys | 148 | 9 |

| | | | |
|---|---|---|---|
| | Girls | 176 | 9 |
| Jazz | Boys | 137 | 10 |
| | Girls | 165 | 10 |
| String and wind ensemble | Boys | 123 | 12 |
| | Girls | 136 | 11 |
| Music and movement | Boys | 131 | 11 |
| | Girls | 190 | 8 |
| Peking Opera | Boys | 119 | 13 |
| | Girls | 132 | 12 |
| Chinese orchestra music | Boys | 112 | 14 |
| | Girls | 97 | 15 |
| Folk singing class | Boys | 101 | 15 |
| | Girls | 104 | 14 |

## 5. DISCUSSION

Overall, for the majority of boys and girls in this sample there were significant gender-based differences in their self-reported creative potentials, perceived important sources of learning creativity, perceptions of motivation for creativity in the music subject, attitudes towards the learning of music genres, and participation in classroom and extracurricular music activities in school. From the results of this study, the boys and girls differed from one another in a wide variety of ways, providing further support for the argument that boys and girls, to some extent, exhibit different attitudes towards creative potentials and creativity in music education. A generalisation of the data collected for this study will be the basis for the following discussion and will concern three major areas: (1) gender differences in perceiving influential factors in creative learning and the learning of creativity in the music subject; (2) gender perceptions of perceiving the values of diverse music cultures in school music; and (3) the provision of creativity in both formal and extracurricular music activities.

First, the boys' and girls' self-assessment of their creativity presumed that such potential supported the development of their creativity, and that both school music teachers and parents played an important role in enhancing their creativity. To a larger extent, the students in this study maintained that school music teachers and the role of creativity were important in school music education. As mentioned earlier, 686 respondents (317 [16.15%] boys and 369 [18.80%] girls) asserted that school music teachers influenced their creativity, 323 (169 [8.61%] boys and 154 [7.85%] girls) answered parental influence, and 216 (84 [4.28%] boys and 132 [6.72%] girls) reported that popular musical idols influenced their creativity. Though school music teachers were a very important source of creativity, the distinctive source of the students' creativity education was also shared by parents, popular music idols, the Internet, private instrumental tutors, and friends (see Table 1). It is therefore suggested that schools, parents, the Internet, and

other sources should encourage students whenever they are engaged in creative activities in school and at home and help them to develop their creative potentials (see Aubrey & Harrison, 2004; Witt, 2000). At the heart of these ideas is creativity education as focused simply on the subconscious of teachers (Burnard & Younker, 2008; Griffiths & Woolf, 2009).

Overall, the boys and girls viewed art, music, science, and technology as creative in this study (see Table 2). Creativity is of paramount importance in arts education, science, and technology. If the interactions between teachers and students were studied more closely, they may reveal what types of interactions fostered creativity in school music education for both genders (North, Hargreaves, & O'Neill, 2000). In response to the boys' and girls' preferences for school music teachers, it may be that music teachers and music teaching combines creative practices and technical information/technical skills with opportunities for students to experiment with their music practices in classroom music activities. Teachers' approaches for encouraging their students' creativity (with no gender issues) have been recapped under the term "teaching for creativity" (Sternberg, 2015). It is time for teachers to anticipate why they retain music in schools, what it is that they instruct, and how they can translate or renew the prospect of music teaching and learning to a more contemporary location to provide both genders a space in which to celebrate their creative potentials and the creative musical worlds that they live in the 2020s. In recent decades, STEM (science, technology, engineering, and mathematics)/STEAM (science, technology, engineering, arts, and mathematics) pedagogy has resulted in an educational drive that has questioned the artificial detachment of subjects that schools traditionally teach. As STEAM has become an educational trend in the digital era, the development of in-service and pre-service music teachers' knowledge and skills would better prepare both genders and promote equality to inspire and motivate creativity. More significantly, both genders have not only strengthened their learning within the disciplines but also between disciplines through the opportunity to explore and make correspondences between art, music, science, technology, and more in creativity education (see Burnard & Younker, 2008; Griffiths & Woolf, 2009; Reiss, 1999). However, the quantitative differences in this study between the primary and secondary school students towards their perspectives on the values of creativity in school music education ($M = 2.42$, $SD = 2.918$ for senior primary school students and $M = 3.84$, $SD = 1.12$ for junior secondary school students) (from 1 = "highly disagree" to 5 = "highly agree"), and the boys' and girls' perspectives on their level of liking music [$t(2010) = -4.472$, $p = 0.000$] imply that we must be careful when using the same identification procedures to identify creative potentials between boys and girls across grades.

Second, the Chinese students had a stake in music preferences for contemporary Chinese music, Chinese popular songs, English popular songs, traditional Chinese music, and rap, while blues and jazz, Japanese popular songs, Western musicals, Korean popular songs, and other world music were not their greatest interest in creativity education (see Table 3). The finding that girls were more liable than boys to engage in classical and popular music (see Table 3) is consistent with Ho's (2003) study. The data exhibited that the girls had a relatively positive attitude towards their music preferences. Both genders in this study, however, maintained that music was a means to human culture, and they should learn about diverse music cultures ($M = 3.57$, $SD = 1.42$ for the boys and $M = 3.60$, $SD = 1.40$ for the girls) (from 1 = "highly disagree" to 5 = "highly agree"). The students' liking of Chinese popular music from China was mainly shaped by their peers, the Internet, and mass media, and their preferences for contemporary Chinese classical music, traditional Chinese music, and Chinese folk songs were largely cast by education from music teachers, parents, popular music idols, and mass media, and even the promotion of the Chinese Government, which corresponded with the values within particular sociocultural contexts.

As also demonstrated by Shijiazhuang's sample, the application of learning contemporary Chinese music and Chinese popular music and/or diverse music styles can enhance and enrich students' creativity. The findings revealed that the acculturation of negative attitudes towards folk music, blues, jazz, and other world music might be one reason for their minimal preferences because most of the students considered those music styles old-fashioned and outside their daily contact. Drawing on what Burnard (2012) referred to as the "living meanings of musical culture" (p. 11) and the focus of "unlocking diverse modes of creativity: intercultural, empathic, communal, and collaborative" (p. 12) offers unique grounds for rethinking creativity itself in music education. This raises the question of what roles music teachers play in promoting diverse music cultures in creativity education that connects the in-school and out-of-school environments of both genders, though there was no evidence qualitatively of any major interaction between the variables of music genres and gender in the data from the chosen capacity. The music classroom should be a place for exploring and experimenting with music ideas through enjoyable creative activities, and the use of diverse music genres as a teaching method should be encouraged for both genders. Teachers should welcome cultural and social means in adopting a more integrative framework for creativity education, with the introduction of music not limited to contemporary Chinese and popular music but also other music types as their classroom activities evolve (Ministry of Education, 2017, 2022). As discussed by Burnard (2012), diverse modes of creativity include "intercultural, empathic, communal and collaborative" forms of diverse creativities (p. 332). In this discussion, the result of the struggles over the importance of teaching popular, classical, contemporary, and folk music remains to be seen in China's music education and will certainly count on the judgement of schools and music teachers in the development of creativity education (see Ho, 2021). More listening to and more understanding of diverse music styles may lead both genders to exhibit a greater preference for classical, popular, and folk music genres (see Christenson & Peterson, 1988; North, Hargreaves, & O'Neill, 2000). Promoting other world music may be seen as a struggle as well as a possibility in challenging the hegemony of classical and popular canons in both Western and Chinese traditions in Mainland China.

Third, gender is prominent in the way that it is correlated with participation in music activities. This study attempted to investigate music instruction using related creative activities in the development of music-making in the curriculum. Singing and music appreciation, as reflected in this study (see Table 4), were found to be significant to many Chinese students, and their overall mean of liking music was 3.93 (SD = 1.01) (for the boys M= 3.82, SD = 1.07 and for the girls M = 4.02, SD 0.93) (from 1 = "highly disagree" to 5 = "highly agree"). As part of the Chinese school system, extracurricular music activities have been implemented in a school curriculum that calls for quality education and increased creativity to reform educational practices and ideology inside and outside classrooms in recent education reforms (Ministry of Education, 2022; Woronov, 2008). This study demonstrated that the students generally preferred to learn creativity through popular music classes, composing, and school choir through extracurricular activities (see Table 5). Moreover, in this study, computer music and music technology did not excite the boys much. The mean scores of the boys and girls for adopting technology to compose music to learn creativity in school music lessons were 3.18 (SD = 1.34) and 3.22 (SD = 1.22), respectively. There was no evidence that a technology gender gap in learning creativity and gender bias existed. However, the ratios of the boys' and girls' preferences for the use of technology in composing music was 334:295 for classroom music (see Table 4), and the respective ratio for the boys and girls was 173:131 for cultivating their creativity education through electronic music class as an extracurricular activity (see Table 5). This responding rate may also imply that girls had equal access to, and confidence in, new information technologies (particularly in composing music) in school music education.

With an understanding of the significance of music teachers related to creativity development in school students, questions are also being raised on how we can equip full opportunities for

students undertaking music activities both inside and outside the school environment. Along with many other factors, such as the expansion of popular culture and the popular music industry, the popularity of the Internet and the rapid development of popular culture fandom have given rise to a growing body of fan communities among young people in Chinese cities. This study, according to the students' responses, also gave thought to what kinds of creative activities or elements motivated teachers to adopt music technology and its application in students' music listening, composition, and other related activities as a more comprehensive set of music activities. Considering this, the cultivation of creativity with technology has the capability to offer and to motivate students' unique opportunities to practice music activities in classroom music lessons, as well as in extracurricular activities, for both genders (see Armstrong, 2016; Green, 2002; Hopkins & Berkers, 2019). Though singing, music appreciation, and popular music class were found to be the most welcomed classroom activities as well as extracurricular activities, students may not highly appreciate composing and creative music-making. Music teachers may see the outcomes of this survey on student-preferred music activities as catering to most students in music learning; on the other hand, they may also see resolutions to the issue/problem that unpopular activities certainly limit students' music learning to certain degrees among boys and girls.

# 6. CONCLUSION

## 6.1. Summary

The findings of this study on both genders have provided some important insights for future research. School music teachers and parents were the most important sources of creativity education among both genders. However, the girls had higher responding rates to music styles and music activities that were taught in school. Further research should be carried out to investigate the differences in the relationships of student-teacher and other factors, creativity potentials, creativity education, music preferences, and music practices.

## 6.2. Implications

The implications of this study should be discussed on at least three levels. At the first level, the major focus should be on the provision of equal access and opportunities for boys and girls for all types of music styles and music activities, with their influential sources of learning creativity both within and outside the school environment. Further research on gender associations and preferences for learning creativity is suggested, including (1) an estimation of the degree of gender associations directly in relation to influential sources and preferred school subjects; (2) consideration of both genders and preferred music genres; and (3) consideration of both genders and preferred music activities. It is more challenging for music teachers to select music materials and activities carefully that are based on their choices and a wide range of criteria that mandates looking beyond whether the music is appealing, their musical and educational settings, and the provision of materials and resources available in both formal and informal music education. Finally, gender differences in music practices have implications which go beyond the education system and must be set against a background of changing cultural expectations and musical behaviour of boys and girls, the provision of music resources and materials, changes in the organisation of the music curriculum and teaching styles, etc.

## 6.3. Problems, Limitations, and Recommendations

The most difficult part of this study, which took about two years to administrate, was the search for schools and students to sample in the city of Shijiazhuang during the COVID-19 pandemic. It

also took a long time to win the approval and consent of the school authorities. The researcher and assistant researcher continued to send invitation letters and managed to collect sufficient possible participants between late 2019 and mid-2020. This study only problematized the common practice found in questionnaire-based research, ending with the statistical identification of gender differences in music practices without exploring factors or sources influencing those differences. Besides peer influences on students' musical learning, other factors contributing to stereotypical gender differences in influential sources, music preferences, and music activities should be explored in further qualitative and quantitative studies. The findings from the survey in the current study also suggest the promotion of a broader perspective in research on how to transform pupils' preferences at all ages and gender-stereotyped music preferences and activities. This study recommends that exposure to music teachers, instrumental teachers, and parents are essential to encouraging females to pursue their interest in music and creative music-making, as well as to participate in performing and composing/improvising activities within and beyond the school environment. For this reason, ongoing research on creativity, music learning, and gender is essential as it contributes to the body of knowledge and practices used to design evidence-based music activities for creativity and the promotion of gender equality in the development of school music education.

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