

Exploring Musical Creativity in Taiwanese Elementary Textbooks: A Study of Elements and Mediums

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Abstract

This study aims to examine and analyze the musical creativity contents of elementary school "Arts and Humanities" textbooks in Taiwan through document analysis. The research materials are textbooks published by the Kanhsuan Educational Publishing Group and Han Lin Publishing Co., Ltd. for Grade 5 and 6 students. The frequency and percentage of musical creativity contents were recorded, and the corresponding musical elements and mediums were analyzed. The results showed that the musical elements with the highest frequency are expression, rhythm, and melody, while the musical mediums with the highest frequency are notation, body, instrument, and vocal.

Keywords— *Music textbooks; Musical creativity; Elementary education; Music education.*

I. INTRODUCTION

Music education reflects human emotions and reality through teaching, allowing students to feel the fun brought by music and learn the ability to express, appreciate, and musical creativity, thereby promoting the overall development of students' physical and mental health (Bai, 2018). In view of this, past studies have pointed out that musical creativity is one of the ways to cultivate students' creativity (Ozenc-Ira, 2023). Therefore, in music education, the cultivation of creativity is an important teaching goal in the subject of music. Creativity needs to be cultivated from an early age, and in elementary school, students' creativity is on a developmental trend, so when students are engaged in musical creativity, they can promote the development of creativity (Navarro Ramón & Chacón-López, 2021). In addition, a series of cross-sectional studies by Smith and Carlsson (1990) found that creativity in elementary school students dropped to a low point in grades 2 to 3 (ages 7 to 9) and peaked in grades 5 to 6 (ages 10 to 12).

In 2008, the Ministry of Education of Taiwan

promulgated the "Grade 1-9 Curriculum Guidelines," which state that art education should provide students with hands-on participation in exploring the expressive skills of various arts and encourage them to develop artistic creativity inspirations based on their personal experiences and imaginations (Ministry of Education, Taiwan, 2008). Music education is an important part of arts education; it is a basic subject and basic quality education. Compared with other arts courses, students receive the stimulation of music and at the same time can also accompany the music with body rhythms, which can better promote the development of the brain (Lu et al., 2022).

Past research has shown that students' creativity must be materialized through the creation of products (Amabile & Pratt, 2016). Musical creativity is an expression and an ability of creativity. For students, musical creativity is a product of imagination combined with life experience. Although the cultivation of musical creativity is given much attention worldwide, it remains one of the most difficult aspects of teaching and learning (Teng, 2017). Past research has shown

that musical creativity is the most troubling item for teachers in music teaching (Wu, 1993; Chen, 1995; Chu, 2019). The content in textbooks is dominated by listening and singing activities, with a low percentage of activities of musical creativity (Liu, 2020). In actual teaching, music textbooks are still the primary teaching tool, and the musical creativity contents are an important medium for guiding students in musical creativity. Therefore, if the design of the musical creativity contents in the textbooks is not reasonable, the musical creativity will be gradually neglected and more marginalized.

Although the issue of creativity has received much attention, few previous studies have focused on the analysis of musical creativity contents in elementary school textbooks. In view of this, this study analyzes and summarizes the musical creativity contents of elementary school "Arts and Humanities" textbooks in Taiwan, and finally makes recommendations based on the results, hoping to provide music teachers and textbook editors with favorable evidence to improve the teaching content of musical creativity in textbooks and develop students' ability in musical creativity.

1.1 Research Objectives

- (1) To analyze the musical creativity contents in the "Arts and Humanities" textbooks of Taiwan's elementary schools.
- (2) To analyze the musical elements used in the musical creativity contents of "Arts and Humanities" textbooks in Taiwan elementary schools.
- (3) To analyze the musical mediums used in the musical creativity contents of "Arts and Humanities" textbooks in Taiwan elementary schools.

1.2 Research Questions

- (1) How many musical creativity contents are there in Taiwan's elementary school "Arts and Humanities" textbooks?
- (2) What kind of musical elements are used in the musical creativity contents of Taiwan's elementary school "Arts and Humanities" textbooks?
- (3) What kind of musical mediums are used in the musical creativity contents of Taiwan's elementary school "Arts and Humanities" textbooks?

II. LITERATURE REVIEW

2.1 The Meaning and Value of Musical Creativity

In today's society, creativity is one of the important

indicators for selecting talents in all walks of life. Creativity in a broad sense refers to a process or product that is novel and useful in a given context (Richardson, 2020). However, creativity is complex, uncertain and changing, but it can be continuously developed through systematic education and long-term training (Ma & Li, 2022). Therefore, the "White Paper on Creativity Education" released by the Ministry Education of Taiwan in 2003 vigorously promotes creativity education (Ministry Education of Taiwan, 2003). Art education is the core curriculum for cultivating students' creativity, and musical creativity is one of the programs in music education.

Musical creativity in a broad sense includes explicit behaviors as well as internal mental activities that are concrete and expressive of the work. (Van der Schyff et al., 2018). The explicit behaviors of musical creativity consist of singing, performing, appreciating, and composing. At the same time, the inner mental activities manifest musical creativity, consisting of observation, attitude, self-efficacy, and other affective expressions (Chu, 2019).

Cultivating students' creativity in music teaching is not only conducive to the development of good learning habits and the construction of comprehensive musical intelligence, but also exercises students' creativity and critical abilities (Kupers & van Dijk, 2020). Musical creativity can be a tool for developing musical cognition for all students because it provides opportunities for self-expression and interpretation of musical ideas (Chu, 2019). Allowing students to do musical creativity expands their development of skills and understanding of music as well as fosters their problem-solving, self-expression, and interest in music learning (Guderian, 2012). This study refers to the past research and defines the scope of musical creativity contents as the content of textbooks that guide students in composing, adapting, improvising, and other related activities (Lin, 2002).

2.2 Musical Elements

Musical elements are the constituent elements of a piece of music. The musical elements can be divided into single-concept musical elements, such as rhythm, dynamics, melody, timbre, harmony, articulation, and texture, and integrated-concept musical elements, such as expression, form, and time and place. All of these elements cannot exist in music alone but must alternate and merge through the principles of unity and change to develop a variety of musical forms (Boardman, 1988; Ji, 2016). The different combinations

of musical elements make up the unique character of each piece of music, allowing one to understand the structure, expression, and even the ethnic group, region, era, and genre (Panda et al., 2023). Teaching students to analyze and summarize musical elements is essential in musical creativity education (Werry, 2020).

2.3 Musical Mediums

Musical mediums are the means of transmitting music. For example, using the throat to sing a song, or using the hands to make a beat, or drawing a score and notes on paper, are all types of musical mediums. The musical mediums are the bridge between the performer and the audience, and it is through the musical mediums that the performer has the opportunity to convey the ideas and feelings of the work to the audience (Zhang, 2017). Effective use of musical mediums such as notation, graphics/tone painting, vocal, body, instrument, and digital creativity can be used to enhance students' musical creativity level and mastery of musical elements (Lee & Robinson, 2018; Sungurtekin, 2021).

III. METHODOLOGY

This study utilized the document analysis method to examine the musical creativity contents in Taiwan's elementary school grades 5-6 "Arts and Humanities" textbooks (two versions, 8 books in total). Document analysis is a systematic procedure for reviewing or evaluating documents (Bowen, 2009).

3.1 Materials

This study focuses on Taiwan's elementary school music textbooks for grades 5 and 6. The textbooks that were analyzed are two versions of "Arts and Humanities" (Books 5A, 5B, 6A, and 6B), published by Kanhsuan Educational Publishing Group (KEP) and Han Lin Publishing Co., Ltd. (HLP) in 2022. Both versions are based on the "Grade 1-9 Curriculum Guidelines" promulgated by the Ministry of Education of Taiwan in 2008. In addition, Taiwan's "Arts and Humanities" textbooks contain three types of learning content: visual arts, music, and performing arts, and this study analyzes only the music learning content.

3.2 Instruments

This study referred to the analytical tables of musical elements and musical mediums in the past research (Ji, 2016) and invited five experts in music education to revise the analytical tables and then categorized the musical creativity contents intercepted from textbooks into ten different music elements and

six music mediums. The ten musical elements are rhythm, dynamics, melody, timbre, harmony, articulation, texture, expression, form, and time and place, while the six musical mediums are notation, graphics/tone painting, vocal, body, instrument, and digital creativity. After that, one of the textbooks was randomly selected for researcher reliability investigation, and its reliability was ≈ 0.83 .

3.3 Procedures

The musical creativity contents from each textbook were first identified and then classified according to the ten different musical elements and six musical mediums. The frequency of the musical elements and musical mediums used in musical creativity contents appears to be counted by repetition, and an activity may contain more than one musical element and medium. For instance, the activity to "design a few Tibetan dance moves and sing and dance along with the music" was considered musical creativity content since it requires students to use their imagination to design dance moves according to music style. Due to its unique ethnic character and the need for students to express themselves, the musical elements identified for this activity are time and place and expression, and the musical mediums used are body and vocal. In addition, there are musical creativity contents that cannot be clearly defined in terms of musical elements and mediums; for instance, the activity to "design music questions or games related to the content of this semester." This activity has no fixed form and requires students to use their divergent thinking to create it; therefore, it is categorized as other elements and mediums.

The percentage of pages in which the musical creativity content appears in the textbooks, the frequency and percentage of musical elements, and the frequency and percentage of the musical mediums used in the musical creativity content were integrated using Excel 2021 software. Tables and graphs were utilized for analysis and comparison.

IV. FINDINGS

4.1 Han Lin Publishing Co., Ltd. (HLP)

The total number of pages in the HLP Book 5A is 49, including seven pages of musical creativity contents, accounting for a total of 14.29%. The specific musical creativity contents are analyzed as follows:

Table 1 Musical Creativity Contents of HLP Grade 5 Book A

Page number	Musical creativity content	Musical elements	Musical mediums
76	Create rhythms and tap them with your hands, feet, shoulders or other parts of your body.	Rhythm, Expression	Notation, Body
76	Create own gong and drum sutra and perform it.	Rhythm, Expression, Time and place	Notation, Instrument
92	Change the rhythm and pitch and record it on the staff.	Rhythm, Melody	Notation
99	Create lyrics.	Expression	Others
102	Create rhythms.	Rhythm	Notation
103	Change the lyrics of the triplet rhythm to the name of a classmate or idol to sing.	Rhythm, Expression	Vocal
107	Change the rhythm and pitch to create melody, and play it on a recorder.	Rhythm, Melody, Expression	Notation, Instrument
107	Collaborate with classmates to create harmonious and fun new melodies and play them on the recorder.	Rhythm, Melody, Expression	Notation, Instrument
119	Design music questions or games related to this semester.	Others	Others
There are 49 pages in total, of which 7 pages of creative content appear, accounting for a total of 14.29%.			

The musical elements used in the musical creativity contents are rhythm, melody, expression, and time and place, of which rhythm (7 times, 39%) and expressions (6 times, 33%) are the most featured, as shown in Figure 1.

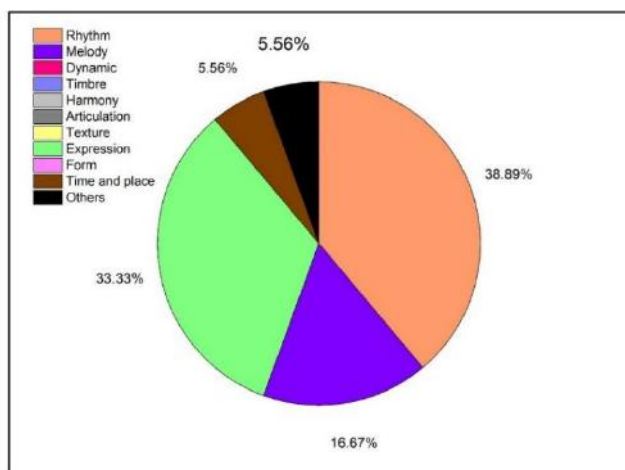


Fig.1: Musical Elements of HLP Book 5A

The musical mediums used are notation, vocal, body, and instrument, of which notation (6 times, 46%) is the most featured, as shown in Figure 2.

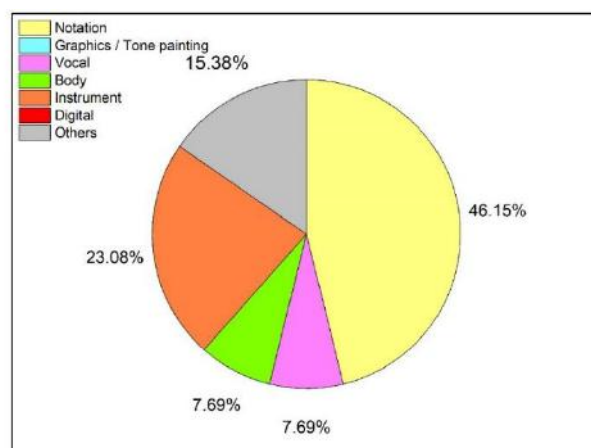


Fig.2: Musical Mediums of HLP Book 5A

HLP Book 5A includes a traditional folk song popular in the 1960s called "Temple Fair" (Figure 3), whose lyrics show the architectural features of Taiwan's temples, the people's prayers for well-being, and their reverence for the gods. The gong and drum sutra used in the song is a percussion notation method commonly used in traditional Chinese instruments and operas, using the sound of Chinese characters to simulate the sound of percussion and to record the different ways of playing percussion. In the teaching, the teacher can play the temple block, lead the students to learn the gong and drum sutra of the tanggu drum,

cymbal, and gong, and then let the students create their own gong and drum sutra and perform them. In this way, students not only appreciate the architectural

features of the temple but also get to know these traditional percussion instruments and are able to use them to create gong and drum sutras.



Fig.3: Musical Creativity Content in HLP Grade 5 Book A

The total number of pages in the HLP Book 5B is 39, including seven pages of musical creativity contents, accounting for a total of 17.95%. The specific musical creativity contents are analyzed as follows:

Table 2 Musical Creativity Contents of HLP Grade 5 Book B

Page number	Musical creativity content	Musical elements	Musical mediums
89	Design the rhythmic speech of the sounds of animals or running water in the lyrics.	Rhythm, Timbre, Expression	Vocal
89	Do three-beat body movements with the song, such as hand clapping, foot tapping, finger snapping?	Rhythm, Expression	Body
96	Use the sounds you hear every day to create different rhythms.	Rhythm, Timbre	Notation, Vocal
97	Create melodies with the recorder.	Rhythm, Melody, Expression	Notation, Instrument
97	Each group of students creates two bars of melodies on the recorder and takes over to form a piece.	Rhythm, Melody, Expression	Notation, Instrument
98	Listen to the music and explore the movements, expressions and sounds of the animals in the piece.	Timbre, Expression	Vocal, Body
100	Play the role of the animals in the music and use physical expression.	Expression	Body
101	Choose one or several pieces of music to combine the animal's movements with the music.	Expression	Body
105	Design music questions or games related to this semester.	Others	Others

There are 39 pages in total, of which 7 pages of creative content appear, accounting for a total of 17.95%.

The musical elements used in the musical creativity contents are rhythm, melody, expression, and time and place, of which expression (7 times, 39%) and rhythms (5 times, 28%) are the most featured, as shown in Figure 4.

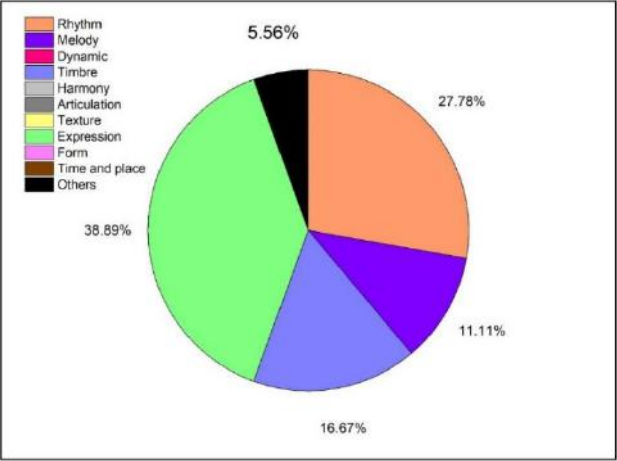


Fig.4: Musical Elements of HLP Book 5B

The musical mediums used are notation, vocal,

Table 3 Musical Creativity Contents of HLP Grade 6 Book A

Page number	Musical creativity content	Musical elements	Musical mediums
89	Design graphics to represent the elements in the music.	Others	Graphics/ Tone painting
90	Listen to music and create musical lines.	Others	Graphics/ Tone painting
91	Design different graphics according to the music.	Others	Graphics/ Tone painting
93	Create ostinato with hand bell or tambourine.	Rhythm, Expression	Instrument
98	Play along with the music on a pitch less percussion instrument or a homemade eco-friendly instrument.	Rhythm, Expression	Instrument
113	Play the roles in the story in groups.	Expression	Others
113	Create lyrics.	Expression	Others

There are 35 pages in total, of which 6 pages of creative content appear, accounting for a total of 17.14%.

The musical elements used in the musical creativity contents are rhythm, and expression, of which expression (4 times, 45%) is the most featured, as shown in Figure 6.

body, and instrument, of which body (4 times, 31%) is the most featured, as shown in Figure 5.

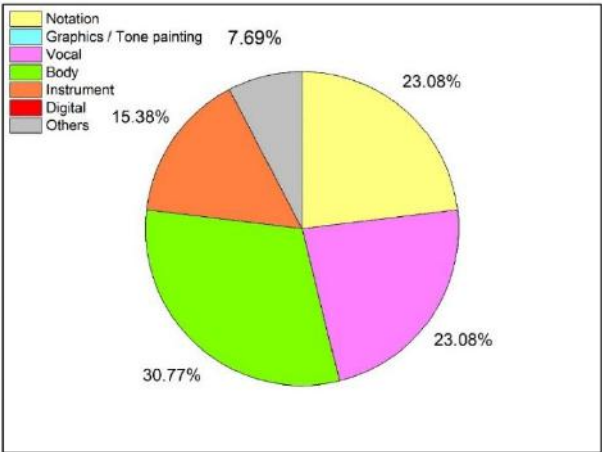


Fig.5: Musical Mediums of HLP Book 5B

The total number of pages in HLP Book 6A is 35, including six pages of musical creativity contents, accounting for a total of 17.14%. The specific musical creativity contents are analyzed as follows:

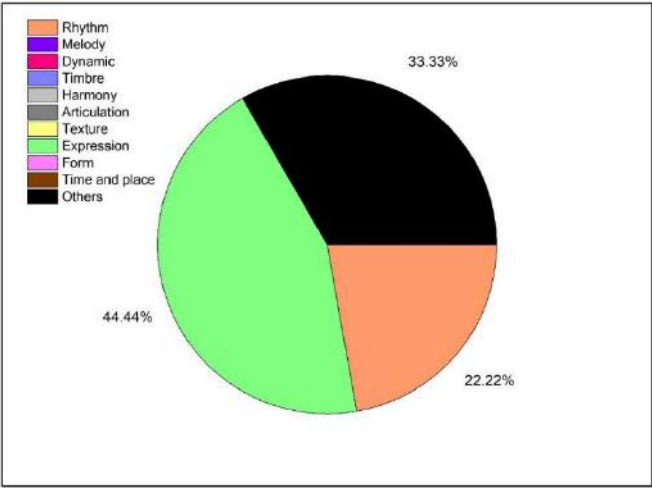


Fig.6: Musical Elements of HLP Book 6A

The musical mediums used are graphics/tone painting, and instrument, of which graphics/tone painting (3 times, 43%) is the most featured, as shown in Figure 7.

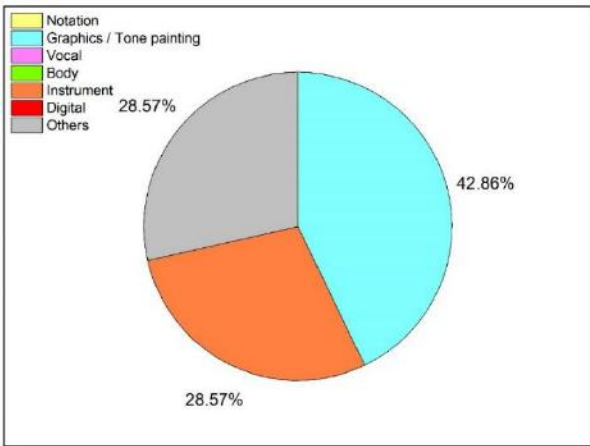


Fig.7: Musical Mediums of HLP Book 6A

The total number of pages in HLP Book 6B is 41, including eight pages of musical creativity contents, accounting for a total of 19.51%. The specific musical creativity contents are analyzed as follows:

Table 4 Musical Creativity Contents of HLP Grade 6 Book B

Page number	Musical creativity content	Musical elements	Musical mediums
102	Imagine the girl and the boy dancing and with the music showing the body.	Expression	Body
114	Add beatboxing to the song.	Rhythm, Timbre, Expression	Vocal
118	On paper, draw lines or graphics according to the feeling of the music progress.	Others	Graphics/ Tone painting
118	Choose a dance song and try to choreograph it.	Expression	Body
120	Draw different graphics for each theme of the variation.	Expression	Graphics/ Tone painting
122	Change the pitch according to the cued rhythm to create a new melody.	Rhythm, Melody	Notation
127	Mark staccato and slur for etudes.	Articulation	Notation
134	Create lyrics.	Expression	Others
134	The whole class worked together to create a graduation song.	Others	Notation
134	Students who can play musical instruments accompany the graduation song.	Rhythm, Melody, Expression	Instrument
135	Record graduation creative works.	Others	Digital

There are 41 pages in total, of which 8 pages of creative content appear, accounting for a total of 19.51%.

The musical elements used in the musical creativity contents are rhythm, melody, timbre, articulation, and expression, of which expression (6 times, 38%) is the most featured as shown in Figure 8.

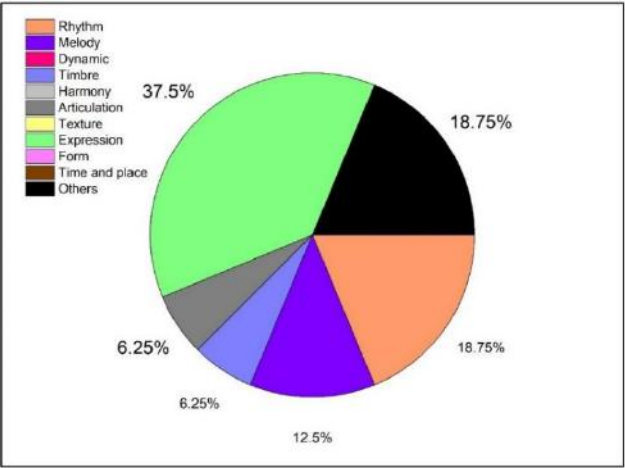


Fig.8: Musical Elements of HLP Book 6B

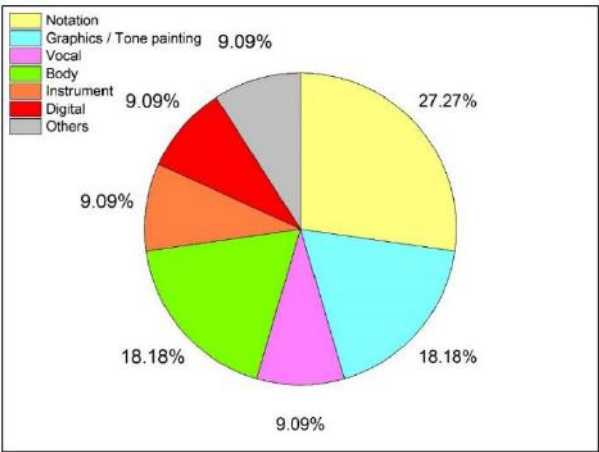


Fig.9: Musical Mediums of HLP Book 6B

The musical mediums used are notation, graphics/ tone painting, vocal, body, instrument, and digital, of which notation (3 times, 28%) is the most featured, as shown in Figure 9.

4.2 Kanhsuan Educational Publishing Group (KEP)

The total number of pages in KEP Book 5A is 31, including night pages of musical creativity contents, accounting for a total of 29.03%. The specific musical creativity contents are analyzed as follows:

Table 5 Musical Creativity Contents of KEP Grade 5 Book A

Page number	Musical creativity content	Musical elements	Musical mediums
10	Create simple body movements to match the theme music.	Expression	Body
11	Listen to the music and draw a picture of the situation in the piano quintet.	Others	Graphics/ Tone painting
14	Imagine the mood of the song and then sing and perform it.	Expression	Vocal
16	Create body movements in groups to express the music.	Expression	Body
17	Draw the melody line: listen to the music and move your hands or shoulders in rhythm with the high and low melody of the song.	Melody, Expression	Graphics/ Tone painting, Body
18	Express the feeling of the melody with the strength of the recorder sound.	Dynamic, Expression	Instrument
22	Dance while singing, to reflect the style of the song, and perform in groups.	Rhythm, Expression, Time and place	Vocal, Body
28	Perform two-part chorus in groups.	Harmony, Expression	Vocal
32	Play in groups or solo.	Expression	Instrument

There are 31 pages in total, of which 9 pages of creative content appear, accounting for a total of 29.03%.

The musical elements used in the musical creativity contents are rhythm, melody, dynamic, harmony, expression, and time and place, of which expression (8 times, 58%) is the most featured as shown in Figure 10.

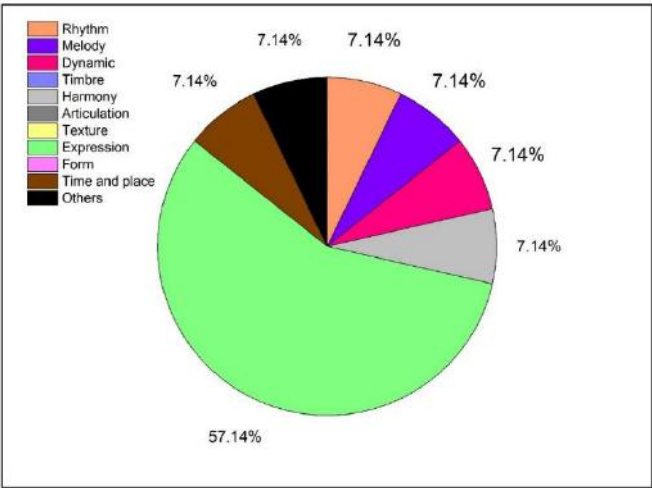


Fig.10: Musical Elements of KEP Book 5A

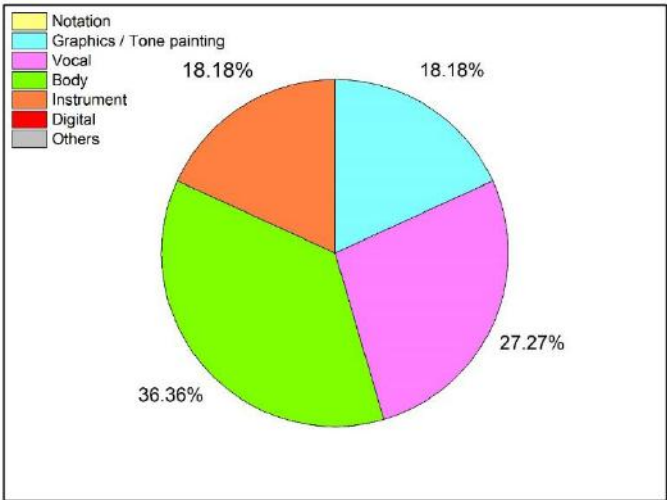


Fig.11: Musical Mediums of KEP Book 5A

The musical mediums used are n graphics/tone painting, vocal, body, and instrument, of which body (4 times, 37%) and vocal (3 times, 27%) are the most featured as shown in Figure 11.

The total number of pages in KEP Book 5B is 35, including night pages of musical creativity contents, accounting for a total of 25.71%. The specific musical creativity contents are analyzed as follows:

Table 6 Musical Creativity Contents of KEP Grade 5 Book B

Page number	Musical creativity content	Musical elements	Musical mediums
16	Use body movements to express the characteristics of each period of music.	Expression	Body
17	Play the six roles in the piece in groups and perform the situations of the piece.	Expression	Body
19	Choose an appropriate rhythm instrument and improvise with the theme.	Rhythm, Expression	Instrument
23	Choose percussion instruments and create rhythms to accompany the song.	Rhythm, Expression	Instrument
27	Use body movements to express the characteristics of each period of music.	Expression	Body
27	Free creative expression of the variation part of the piece.	Expression	Others
28	Group or individual performance.	Expression	Others
30	Teachers and students create together, using aboriginal dance steps to express in concentric circles.	Expression, Time and place	Body
80	Accompany the lion dance performance with traditional percussion instruments or everyday objects as musical instruments.	Rhythm, Expression, Time and place	Instrument
97	Create melodies according to rhythm.	Rhythm, Melody	Notation

There are 35 pages in total, of which 9 pages of creative content appear, accounting for a total of 25.71%.

The musical elements used in the musical creativity contents are rhythm, melody, expression, and time and place, of which expression (9 times, 56%) is the most featured, as shown in Figure 12.

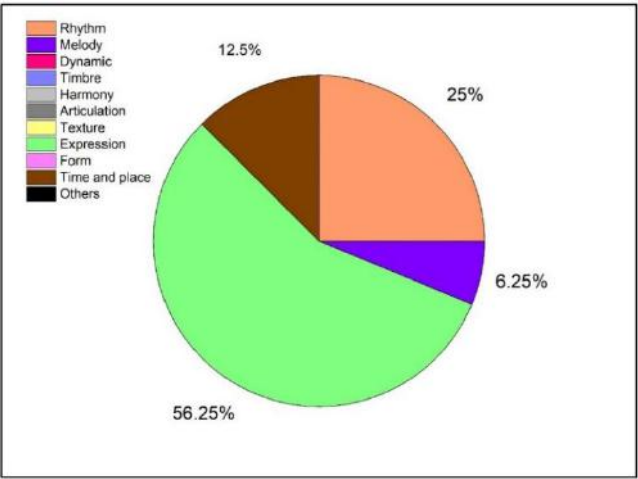


Fig.12: Musical Elements of KEP Book 5B

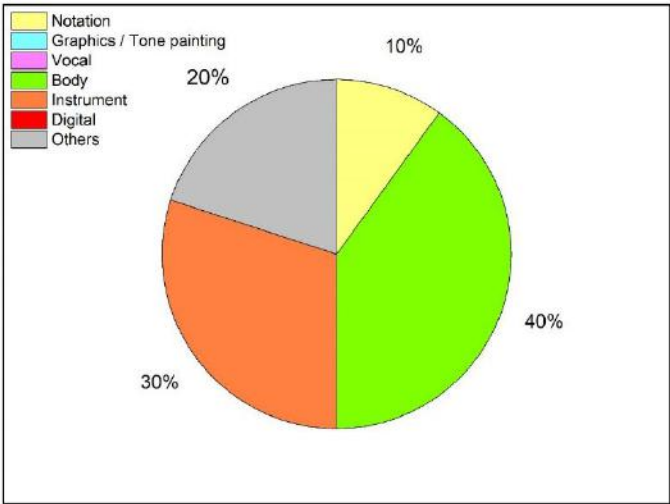


Fig.13: Musical Mediums of KEP Book 5B

The musical mediums used are notation, body, and instrument, of which body (4 times, 40%) and instruments (3 times, 30%) are the most featured, as shown in Figure 13.

The total number of pages in KEP Book 6A is 33, including eight pages of musical creativity contents, accounting for a total of 24.24%. The specific musical creativity contents are analyzed as follows:

Table 7 Musical Creativity Contents of KEP Grade 6 Book A

Page number	Musical creativity content	Musical elements	Musical mediums
15	Take turns singing or performing body rhythms in groups.	Expression	Vocal, Body
16	Sing the song in groups to express the mood of the song.	Expression	Vocal
27	Work in groups to create melody.	Rhythm, Melody	Notation
29	Free rhythm with body movements to the melody of eight-six time.	Rhythm, Expression	Body
30	Free rhythm with body movements to the melody of three beats.	Rhythm, Expression	Body
32	Feel the special style of the melody by clapping hands, stamping feet and other body movements.	Rhythm, Expression, Time and place	Body
34	Feel the special style of the melody by clapping hands, stamping feet and other body movements.	Rhythm, Expression, Time and place	Body
110	Express the rhythm of three beats with body movements.	Rhythm, Expression	Body

There are 33 pages in total, of which 8 pages of creative content appear, accounting for a total of 24.24%.

Using body movements to follow the rhythm of the melody is the main creative content of this textbook, appearing in 6 pages. The musical elements used in the musical creativity contents are rhythm, melody, expression, and time and place, of which expression (7 times, 44%) and rhythms (6 times, 37%) are the most featured, as shown in Figure 14.

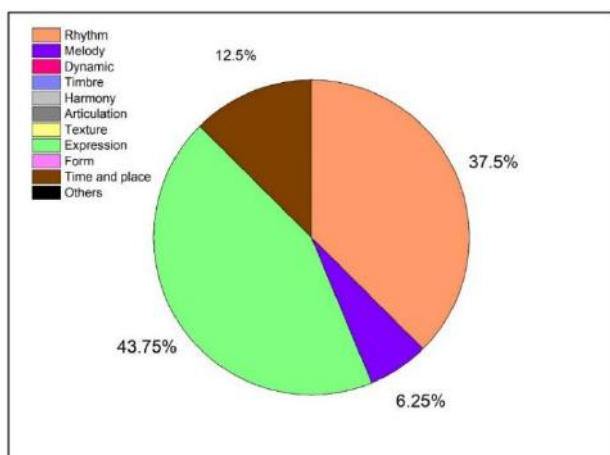


Fig.14: Musical Elements of KEP Book 6A

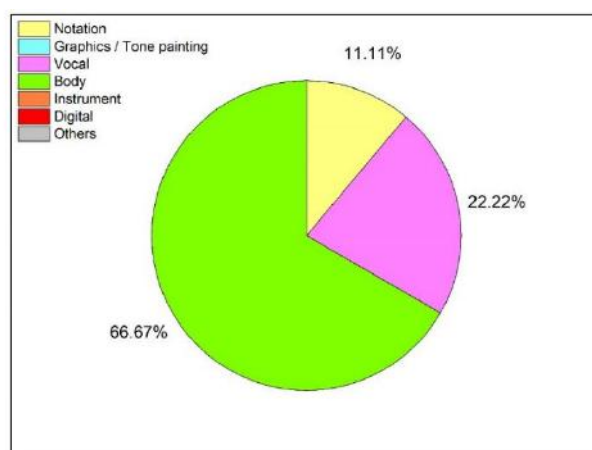


Fig.15: Musical Mediums of KEP Book 6A

The musical mediums used are notation, vocal, and body, of which body (6 times, 67%) is the most featured, as shown in Figure 15.

KEP Grade 6 Book A has a highly interactive melody activity of musical creativity (Figure 16) in which the teacher guides students in pairs to practice playing the question-and-answer phrases of the melody on the recorder according to the score in the textbook. Then try to create a melody in the form of a question and answer based on the exercise just now, and record it on the staff. The pattern of melody progressions can be created using scales, sequences, or skip intervals to make the melody richer or more varied, which is also a means to develop students' musical creativity skills.



Fig.16: Musical Creativity Content in KEP Grade 6 Book A

The total number of pages in KEP Book 6B is 37, including 12 pages of musical creativity contents, accounting for a total of 32.43%. The specific musical creativity contents are analyzed as follows:

Table 8 Musical Creativity Contents of KEP Grade 6 Book B

Page number	Musical creativity content	Musical elements	Musical mediums
10	Improvise a two-bar melody using the Chinese and Japanese pentatonic scales, and play it on a recorder.	Rhythm, Melody, Expression, Time and place	Notation, Instrument
14	Dance with the music, showing the rhythm of three beats.	Rhythm, Expression	Body
16	Add improvised body movements to the rhythm exercises.	Rhythm, Expression	Body
19	Use rhythm instruments and recorders to play songs in an ensemble to express the Hawaiian flavor.	Rhythm, Melody, Harmony, Texture, Expression, Time and place	Vocal, Instrument
26	According to the melody and rhythm of each period, express yourself freely with body movements.	Rhythm, Melody, Expression	Body
27	Create melody according to variation form.	Rhythm, Melody, Form	Notation
28	Sing along with the piano and express the song with body movements.	Rhythm,	Body
35	Accompany the song with rhythm instruments.	Rhythm, Rhythm,	Instrument
90	Use ready-made CDs, learned songs or simple instruments to soundtrack the costume show.	Rhythm, Timbre	Vocal, Instrument, Digital
104	Mark the dynamics marks on your own in the score.	Dynamic	Notation
106	Design four different body movements, gestures or marks to represent the four pieces of music.	Expression	Graphics/ Tone painting, Body
109	Design appropriate background music for the graduation ceremony.	Timbre	Digital

There are 37 pages in total, of which 12 pages of creative content appear, accounting for a total of 32.43%.

The musical elements used in the musical creativity contents are rhythm, melody, dynamic, timbre, harmony, texture, expression, form, and time and place, of which expression (8 times, 29%) and rhythm (8 times, 29%) are the most featured, as shown in Figure 17.

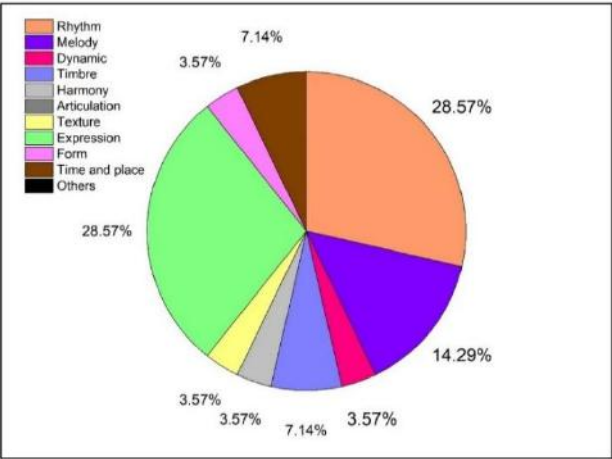


Fig.17: Musical Elements of KEP Book 6B

The musical mediums used are notation, graphics/ tone painting, vocal, body, instrument, and digital, of which body (5 times, 29%) and instrument (4 times, 23%) are the most featured as shown in Figure 18.

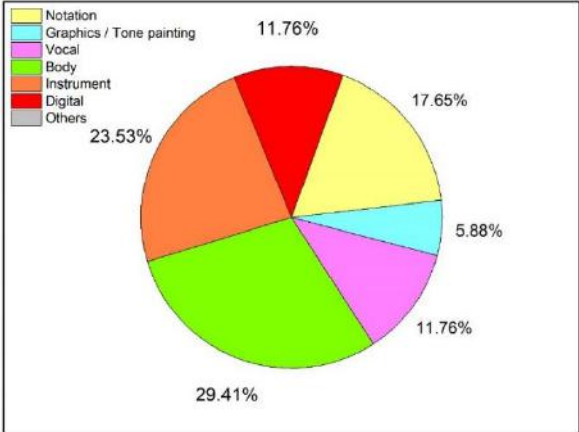


Fig.18: Musical Mediums of KEP Book 6B

V. DISCUSSION

The aim of this study was to examine and analyze the musical creativity contents within Taiwan’s elementary school “Arts and Humanities” textbooks. The research questions proposed were: (1) How many musical creativity contents are there in Taiwan's elementary school “Arts and Humanities” textbooks? (2) What kind of musical elements are used in the musical creativity contents of Taiwan's elementary school “Arts and Humanities” textbooks? (3) What kind of musical mediums are used in the musical creativity contents of Taiwan's elementary school “Arts and Humanities” textbooks?

Table 9 Comparison of musical creativity contents frequency in HLP and KEP

Version	Total pages (page)	Pages of musical creativity contents (page)	Percentage (%)
HLP	164	28	17.07
KEP	136	38	27.94

In relation to the first research question, Table 9 shows that KEP (27.94%) has the highest percentage of musical creativity contents among the two versions, appearing once every 3.6 pages on average, while the HLP (17.07%) has a lower percentage with musical creativity contents appearing once every 5.9 pages on average. This shows that KEP pays more attention to the arrangement of musical creativity contents.

Table 10 Comparison of musical elements used in musical creativity contents in HLP and KEP

Version		Musical elements										
		Rhythm	Melody	Dynamic	Timbre	Harmony	Articulation	Texture	Expression	Form	Time and place	Others
HLP	Frequency (time)	17	7	0	4	0	1	0	23	0	1	8
	Percentage (%)	27.87	11.48	0	6.56	0	1.64	0	37.70	0	1.64	13.11
KEP	Frequency (time)	19	7	2	2	2	0	1	32	1	7	1
	Percentage (%)	25.68	9.46	2.70	2.70	2.70	0	1.35	43.24	1.35	9.46	1.35

In relation to the second research question, Table 10 shows that, excluding the musical elements that cannot be clearly defined (others), the HLP textbooks featured more musical creativity content with expression (37.7%), rhythm (27.87%), and melody (11.48%). Similarly, the KEP textbooks featured more musical creativity content with expression (43.24%), rhythm (25.68%), and melody (9.46%). In addition, the KEP textbooks also featured time and place (9.46%). This result is similar to the findings of Wei-Chen Yeh (2012). However, there is a difference in that KEP has a higher use of time and place elements, showing that KEP places more emphasis on ethnic music education.

First, the use of the expression in the musical creativity contents is mostly according to the style of the song and the plot development of the story to express personal musical creativity ideas, such as designing performance forms for the song. Second, the use of rhythm is mostly the practice of rhythm adaptation and using percussion instruments to accompany songs. Third, the use of melody is mostly for creating melodies with the given tones and continuing to arrange the melody. Last, the use of time and place is mostly presenting a certain music style or the characteristics of a certain period or place in musical creativity, such as expressing music with aboriginal dance steps. In actual teaching, the use of these

elements is also relatively simple. For instance, students are asked to use percussion instruments to accompany the songs. Most of the percussion instruments are unpitched, unlike piano and violin, which require fundamental playing skills. Students are only required to create their rhythms to participate in the musical expression activity, which is easy to understand and execute (Beegle, 2022).

The two versions of the textbook did not utilize all of the ten musical elements in the musical creativity content. The elements of dynamic, harmony, texture, and form were not used in HLP textbooks, and the element of articulation was not used in KEP textbooks. Some of the possible reasons for this are that the majority of the textbook is based on monophonic melodic songs and less frequently presents polyphonic works, while harmony, texture, and form are usually associated with polyphony (Liu, 2016). In the polyphonic works, students are also only asked to appreciate and learn to sing and are not asked to create. However, these elements are all important foundations of musical creativity. Students can develop a basic understanding of harmony and form in the lower learning stage (grades 1-3), such as creating body rhythms to express the sensation of different chords, while in the higher learning stage (grades 4-6), the concepts of harmony and form are integrated into the

creation of melody forms, deepening the learning of musical creativity (Li, 2020).
harmony and form concepts by means of activities of

Table 11 Comparison of musical mediums used in musical creativity contents in HLP and KEP

Version		Musical mediums						
		Notation	Graphics/ Tone painting	Vocal	Body	Instrument	Digital	Others
HLP	Frequency (time)	12	5	5	7	8	1	6
	Percentage (%)	27.27	11.35	11.38	15.91	18.18	2.27	13.64
KEP	Frequency (time)	5	3	7	19	9	2	2
	Percentage (%)	10.64	6.38	14.89	40.43	19.15	4.26	4.25

In relation to the third research question, Table 11 shows that, excluding the musical mediums that cannot be clearly defined (others), the HLP textbooks featured more musical creativity content through notation (27.27%), instrument (18.18%), and body (15.91%); while the KEP textbooks featured more musical creativity content through body (40.43%), instrument (19.15%), and vocal (14.89%). In the musical creativity contents, the use of notation is mostly to record the rhythm and melody in the staff or brackets; the use of vocal is mostly to design the singing form; the use of instrument is mostly to use percussion instruments or homemade instruments to accompany songs; and the use of body is mostly to design dance movements and sing and dance with the music.

Both versions of the textbook featured less musical creativity content through graphics/tone painting and digital creativity. This result is similar to the findings of Jining (2016). The reason for the low use of digital creativity may be due to the unbalanced development of the economy, culture, and education in various regions. The editors of textbooks may consider that some places do not have the conditions for using multimedia, so there are fewer digital medium settings; however, with the advancement of technology, digital will become more popular and a powerful auxiliary tool (Ho, 2009). In teaching, software can be used to allow students to create simple music and feel the fun of musical creativity. Past research has pointed out that graphics/tone painting is mostly used in the lower elementary grades (Huang, 2019); this may be because graphics/tone painting usually uses lovely images to represent the characteristics of melodies, such as fireworks when the music is strong and water drops when it is weak. While students in grades 5-6 have built up some logical thinking and may be able to

immediately respond to the characteristics of the melody without graphics. But graphics/tone painting can stimulate student’s subconscious thoughts and inspiration and provide more freedom for expression in comparison to only using notation; for students who are not very articulate, graphics/tone painting is a very suitable musical medium.

VI. CONCLUSIONS AND RECOMMENDATIONS

Elementary school “Arts and Humanities” textbooks in Taiwan emphasize more on expression, rhythm, and melody in the use of musical elements while lacking in the use of dynamics, harmony, articulation, texture, and form. In terms of musical mediums, elementary school “Arts and Humanities” textbooks in Taiwan cover all six mediums in their musical creativity contents. However, there is more use of notation, instrument, vocal, and body, and less use of graphics/tone painting and digital. Through this study, it is hoped that the use of musical elements of dynamics, articulation, texture, harmony, and form, and the use of musical mediums of graphics/tone painting and digital will be increased in the design of musical creativity content for future music textbooks.

This study presents certain limitations; thus, there is a need to be cautious with the observations. For instance, this study only conducts a comparative analysis of textbooks and does not analyze the effects of musical creativity education. It is suggested that future research could include observations of actual teaching situations to test the actual teaching outcomes of musical creativity. In addition, Taiwan may launch a new music textbook in 2024; this study suggests that the differences in musical creativity contents in pre-

and post-versions of the textbook can be compared to analyze whether there are changes in Taiwan for musical creativity education.

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