

## Using color-coding method to teach music for children

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### ABSTRACT

Color-coding can be a teaching method in music education, and the functions of color-coding can help children to identify music information in music through vision. Human perception can link color and music as vision and audition. In music elements, color-coding method is applied to melody, rhythm, harmony, and timbre to be realized. Educators can utilize the color-coding method in music reading, music playing, and music appreciation to train and discipline the young music learners. Children can learn music knowledge by the colored music notations and the colored instruments, and the color-coding teaching aid in music education can assist children to learn easily and accurately.

**KEYWORDS:** Color-coding, Music learning, Human perceptions

### INTRODUCTION

Color vision and music audition are two important perceptions of human. Color-coding methods could link human perceptions by human's eyes and ears. Color-coding method identifiable by vision could assist children in learning music transformed to recognize by audition. When children recognized and memorized the staff in learning music, they usually confused and made mistakes in the staff of music notation reading and playing. The encountered difficulties made restrictions against music learning. The paper proposes the color-coding method to help children to learn pitches of melodies corresponding to musical instruments. The pitches of melodies are coded in colors for music reading, and the positions of pitches on instruments are marked the coded colors for music playing.

### THEORY

Review the literatures of color and music. Pick, et al. (1982) proposed the music notation of colored notes to help children in music reading.<sup>1</sup> Rogers (1991) proposed a color-coding method of music scores in order to improve music achievements of learners.<sup>2</sup> Mencher (1996) pasted five colors to five lines of the staff that focused music players on music scores in vision.<sup>3</sup> Kajs, et al., (1998) mentioned that is to code colors on a computer keyboard, and the colored computer keyboard can make children to operation easily.<sup>4</sup> Oshima (2002) proposed to test 20 musicians with 16 measures of two music scores, and then to compare their performance ability with colored and conventional piano keys.<sup>5</sup> Dronge (2005) coded colors on strings of violin to help learners to enhance identification of learners.<sup>6</sup> Szilvay (2012) proposed a color-coding system to apply in a colored music notation, and the colored music notation can improve the sight-playing efficiency of instrumental performers.<sup>7</sup> As mentioned above, these literatures are emphasized the colored music notations on the correspondence between audition and symbolical meaning. The correspondence meaning would be converted from symbols into colors. The conversions may be designed into various types.

## METHOD

In this paper, notes of music staff are designed with colors through color-coding method. Colors correspond to music elements including melody, rhythm, harmony, and timbre. Taking an example, twelve tones are assigned to twelve color hues in the pitches of melody (Kuo & Chuang, 2013).<sup>8</sup> Teachers can design the colored music scores by Itten's color wheel, and the comparison table of the colors and pitches (see table 1).

*Table 1 : The comparison table of the colors and pitches*

Letter name	C	C <sup>#</sup> /D <sup>b</sup>	D	D <sup>#</sup> /E <sup>b</sup>	E	F	F <sup>#</sup> /G <sup>b</sup>	G	G <sup>#</sup> /A <sup>b</sup>	A	A <sup>#</sup> /B <sup>b</sup>	B
Solfeggio syllable	Do	Do <sup>#</sup> /Re <sup>b</sup>	Re	Re <sup>#</sup> /Mi <sup>b</sup>	Mi	Fa	Fa <sup>#</sup> /Sol <sup>b</sup>	Sol	Sol <sup>#</sup> /La <sup>b</sup>	La	La <sup>#</sup> /Si <sup>b</sup>	Si
Color name	Red	Red-Orange	Orange	Yellow-Orange	Yellow	Yellow-Green	Green	Blue-Green	Blue	Blue-Violet	Violet	Red-Violet
Hue												

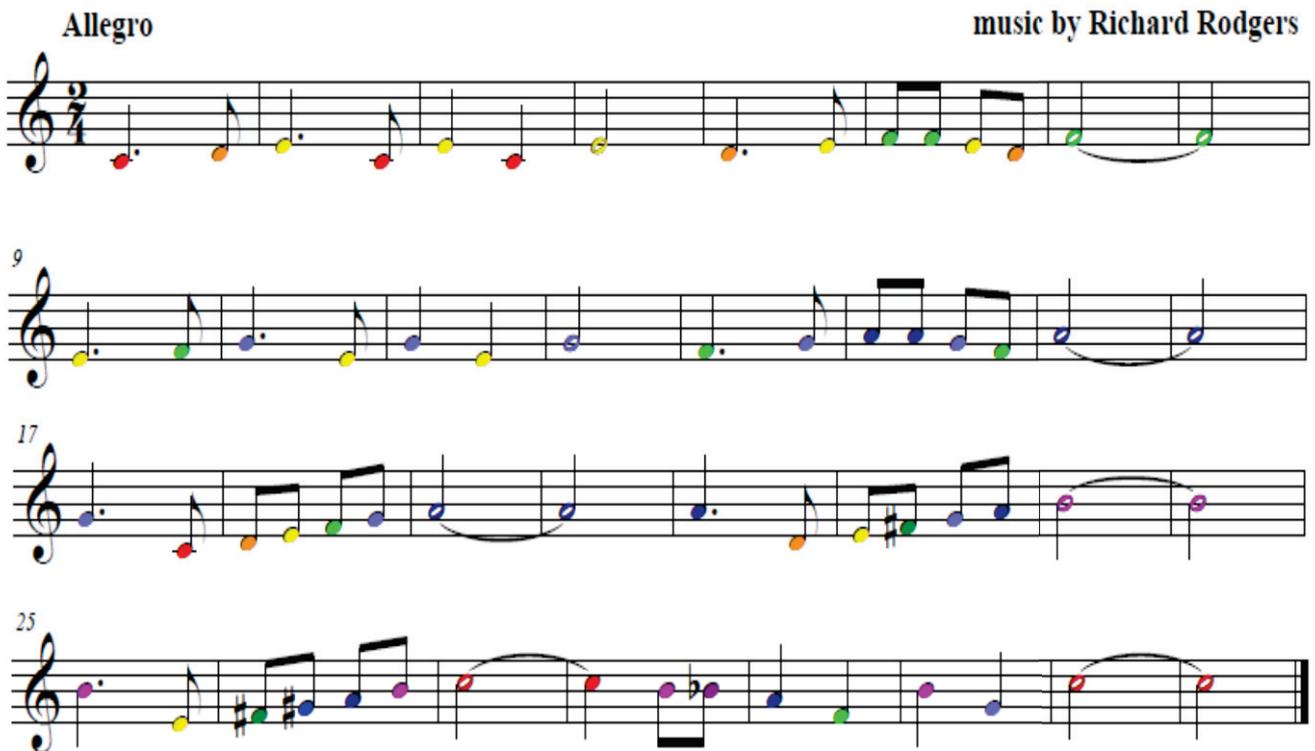
Additionally, different hues with symbols could represent the different patterns of rhythm. Furthermore, structures of harmonies such as major, minor, diminished, and augmented triads and seventh chords are designed as series of color hues. Teachers design the color-coding systems of music elements not only to teach children music pitches, but also to instruct children to find and to mark the same structures of melodies and harmonies with the same colors on music scores. For courses of musical fundamental theory, colors can be coded with pitch, melody, rhythm, and harmony. For courses of musical appreciation, colors can be coded on specific melodies of music scores to show musical themes. Teachers can display the different colors in a screen to children when children listening different musical themes of music pieces. When the same musical themes appear repeating notes of the melodies, the same colors show again. Timbres of instruments can show with different colors that can teach children to listen sound characters of instruments. For courses of musical performance, color-coding has the functions of identification and accuracy in music reading and playing.

## RESULTS AND DISCUSSION

Color-coding is a teaching technique of music education for teachers. Through the color-coding method to apply in music education, teachers can teach children easy and efficient. In learning of musical reading, teachers can specifically assign the twelve colors to the twelve notes, and then children can from the colors to identify music notes. Teachers can use the colored music notes to remind children when they are sight-reading or sight-playing. In learning of musical playing, the pitch positions on instruments can be tagged with the specifically coded colors to correspond the colored notes on music scores that can assist children to find the corrected pitch positions by the colored tags on instruments. At begin stage of music learning, children can raise their memory and identification by the colored music scores in music reading. Teachers can design colored music scores and colored music cards to teach children by a color-coding system, and then children can use color stickers to tag on pitch positions of instruments to match the colored notes of music scores. When children practice music pieces, they can play easy and accurate by the color-coding method. For example, children can find the same pitches from the same coded colors of the music score "Do, Re, Mi". The applied color system of the music score "Do, Re, Mi" is designed by Itten's color wheel (see Figure 1).

# Do Re Mi

from The sound of music



*Figure 1 : The colored notes of the music score "Do, Re, Mi"*

In learning of musical appreciation, teachers inquire children about their color association after they are listening to music pieces, and then teachers encourage children to draw pictures with colors to present their listening experiences. Teachers can from answers of children and their paintings to observe children's synesthesia and to inspire children's creativity of color and music. Additionally, children can feel the colors of instrumental timbres in hearing, and then they can identify the instrumental timbres by color association and music training. Teachers can use colors to compare the music sections of music pieces for children. In the same or different melodies and chords, teachers can mark with the same or different colors to teach children the skills of music analysis. From the different and the same marked color sections with measure numbers, teachers can help children to analyze and to compare the structures and contents of music pieces (see Figure 2).

## Frère Jacques

French song



Figure 2 : The colored sections of the music piece “Frère Jacques”

## CONCLUSION

Color-coding can enhance image, identification, and memory of children, and teachers can use color-coding to be the teaching materials for children in music learning. Children can be trained by using color-coding method in music cognition, reading, playing, and composing. The colored music notations can increase learning intension and efficiency of children to sing songs and to perform music pieces. Teachers can use the color-coding method to be a teaching aid in music lessons, and the functions of color-coding can apply in music reading, music playing, and music appreciation. Children can be inspired by color and music to experience synesthesia of vision and audition. In future, color-coding approaching should not only apply in music education but also in the other fields.

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