

Applied Research on the Teaching Unit of Learning Colors through Playing with Colors

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Abstract—The main courses included in the design of this program's teaching unit are mostly those using bright, vibrant, and dazzling colors. The researcher brings creative ideas into the planning of curriculum activities, allowing students to learn by doing. Subsequently, students recognize the meaning of color as well as understand how to harmonize colors and design a color scheme. This increases the fun of producing creative works and the beauty of creation.

Keywords—color matching, color planning, color trend, creative design..

I. INTRODUCTION

This article believes that in the teaching and learning process of color-related courses, student knowledge of colors and their meaning is important. Teachers compile teaching materials related to the curriculum to help students learn. If a topic that is both educational and entertaining can be designed to allow students to complete course activities hands-on through playing, they will be able to understand specialized theories and develop practical abilities. Furthermore, they will be able to understand colors and be able to harmonize and apply them. This helps achieve the goal of teaching and learning, as well as provides students pleasure in learning.

The topics of the color-related curriculum activities discussed in this article are: (1) baked tempera painting, (2) paper marbling, (3) toothbrush painting, (4) thumb printing, (5) flower and leaf rubbing, (6) spiritual card deck art, (7) greeting card art, (8) T-shirt transfer painting, and (9) zentangle art. Teachers and students have more interaction during the course activities. Moreover, they can play with the colors of their creations to enhance student learning motivation and achieve better learning outcomes.

II. LITERATURE REVIEW

The research methods utilized in this paper are as follows: (1) Literature analysis method: Domestic and foreign information about color application was collected as a reference for the professional theory and practice unit design; (2) Case study method: In-depth discussion was made of specific issues by individuals or organizations; (3) Observational research method: The behavior of the subject was carefully observed and explored using visual organ or instrument in a natural or human context [1].

Related research has found that color is related to people's lifestyle in food, clothing, housing, transportation, education, entertainment, and has a great influence on life. Those who experiment with color have found that if food and drink colors are changed, people's original expectations regarding the product will also change. Moreover, its smell and taste will change, and people's food preference will even be affected [2] [3]. People often choose their personal preference when picking colors. A rarely seen color easily produces a sense of struggle [5] [4].

Some scholars have explored the abstract symbols, relevance, design choice, and psychology of people's color preference in hopes of presenting valuable application information for reference. Since color penchant is very subjective, as well as different and independent from one person to another, it is difficult to understand [6] [7]. Some scholars have also experimented with whether individuals can correlate odor and taste with color perception. Subjects must distinguish between the original taste and the bitterness of food to distinguish and define color. It has been found that continuous repeated testing can indeed increase the subject's association of food odor and taste with color perception [8]. However, some scholars believe that people have a complex and profound relationship with color and that it is inextricably linked to thoughts, behaviors, and other psychological aspects [9].

III. TEACHING UNIT DESIGN

The professional theory and practice unit design in this article is based on life-related things as its topic. The materials, tools, and precautions required for each unit are as follows.

A. Baked Tempera Painting Unit

Materials required for tempera painting: (1) heat shrinkable film, (2) key ring, buckle, and ear buckle (ring). Required tools: (1) sandpaper (Number: 800 to 1000), (2) oil-based pen, (3) oil-based color pens, (4) scissors, (5) punching machine, (6) oven, (7) cardboard, and (8) disposable chopsticks.

Both sides will be bright after tearing off the protective film from the heat shrinkable film. If a foggy effect is desired, number 800 to 1000 sandpaper can be used to polish it. Use an oil-based pen to draw on the surface, then apply color using oil-based coloring pens. Cut the design with scissors, punch with a puncher, and feed into the oven that has been pre-heated and padded with cardboard. Take note of the time and safe usage. After the pattern has been

reduced by about 1/4 the original size, use disposable chopsticks to retrieve it and let it cool. Then, put the finished product on a key ring, ear buckle, or earring and it can become a piece of small jewelry.

If the product is expected to be transparent, it is not necessary to use sandpaper to polish the heat shrinkable film. An oil-based pen can be used for drawing and coloring. Color pencils can also be used, but the color produced will be less vivid. Watercolor, crayons, poster paint, acrylic pigments, water-based pens must not be used to prevent failure during high-temperature baking.

B. Paper Marbling Unit

Materials required for paper marbling: (1) water, (2) watercolor paper (about 185 to 300 lbs.), and (3) acrylic paint. Required tools: (1) watercolor pen (brush), (2) palette, (3) brush washer, (4) washbasin, (5) disposable chopsticks, (6) newspaper, (7) scissors, and (8) glue stick.

Drop the desired acrylic paint into a basin of water. Use a brush to draw on the paint and create the desired pattern. Put the cut-up watercolor paper into it. After rendering, use chopsticks to take out the paper and place it on a newspaper to dry. When dry, assembled into a visual pattern using scissors, glue stick, and other tools.

If a shiny finish is desired, it is recommended that bright red and orange be used with bright green, royal blue, etc. If a cool visual sense is to be conveyed, it is recommended that black and white be used. The paper should not be limited to white or beige to give a more diversified rendering effect. It is recommended that watercolor or poster paint not be used because the color effect will not be satisfactory and the rendered texture will not be obvious, thus affecting the creative quality.

C. Toothbrush Painting Unit

Materials required for toothbrush painting: (1) water, (2) watercolor paper (approx. 185 to 300 lbs.), and (3) acrylic paint (watercolor) (poster paint). Required tools: (1) toothbrush, (2) watercolor brush (brush), (3) palette, (4) brush washer, and (5) newspaper.

Put the desired pigment into the grid of the palette. After mixing the pigment with a watercolor brush, dip a discarded toothbrush into it. Spread the color using the fingers, then, spray the desired visual effect on the watercolor paper to complete the creation.

If a work with more visual sense is desired, it is recommended that a pencil be used in making a composition as a reference for painting. If a more abstract product is preferred, it is recommended that the desired picture be first drawn on a draft before using a toothbrush for spray painting to achieve better control.

D. Thumb Printing Unit

Materials required for thumb printing: (1) water, (2) watercolor paper (approx. 185 to 300 lbs.), and (3) poster paint. Tools required: (1) watercolor brush

(brush), (2) palette, (3) brush washer, and (4) newspaper.

Put the desired pigment into the grid of the palette. After mixing the pigment with a watercolor brush, stain the fingers and rub on the watercolor paper to create the desired visual effect.

If a work with more visual sense is desired, it is recommended that a pencil be used to compose an image as a reference for rubbing. If a more abstract product is preferred, it is recommended that the desired image be drawn first on a draft before rubbing with the fingers to make the creation process easier.

E. Flower and Leaf Rubbing Unit

Materials required for flower and leaf rubbing: (1) petals, (2) leaves, (3) water, (4) watercolor paper (approx. 185 to 300 lbs.), and (5) poster paint. Tools required: (1) watercolor brush (brush), (2) palette, (3) brush washer, (4) newspaper, and (5) scissors.

Put the desired pigment into the grid of the palette. After mixing the pigment with a watercolor brush, apply the desired color on the petals and leaves, then place them on the watercolor paper and press with hands to create the looked-for visual effect.

Scissors can be used to trim the flowers and vines into the desired form for rubbing. If a work with more visual sense is desired, it is recommended that a pencil be used to compose an image on the watercolor paper as a reference for rubbing. If a more abstract product is preferred, it is recommended that the desired image be drawn first on a draft before rubbing with petals and leaves to make the creation process easier.

F. Spiritual Card Deck Art Unit

Materials for the spiritual card deck art: (1) watercolor paper (about 185 to 300 lbs.) and (2) poster paint. Required tools: (1) pencil, (2) composition pen, (3) watercolor pen, (4) palette, (5) brush washer, (6) newspaper, (7) knife, and (8) cutting mat.

The teacher provides students with related samples for the creation of spiritual card deck and explains its function, namely as a tool in face-to-face dialogue during consultation and counseling. The counselor can use the text or picture on the card to start the conversation or introduce a topic, thus helping the counselee to simply or willingly express his inner feelings or opinions. Students can use a pencil to create any visual figure on the watercolor paper according to their current state of mind. Afterward, they can confirm the drawing lines using a composition pen. Finally, coloring materials such as poster paint can be used to create the desired visual effects.

During the creative process, students must be made aware of what a spiritual card deck is and how to use it. They must imagine that they are either the counselor or counselee and choose a situation they want to convey as the vision for their creation.

G. Greeting Card Art Unit

Materials required for greeting card art: (1) watercolor paper (about 185 to 300 lbs.) and (2) poster

paint. Required tools: (1) pencil, (2) composition pen, (3) watercolor pen, (4) palette, (5) brush washer, (6) newspaper, (7) knife, and (8) cutting mat.

The teacher provides students with related samples of greeting cards, explains their functions, and allows students to create visual images based on their favorite themes. Students can draw by first using a pencil and then put in color using ink to complete their creation.

During the creative process, students must be made aware of what a greeting card is and its function. They can choose their own style and form when picking a scene as the theme of their creation.

H. T-Shirt Transfer Painting Unit

Materials required for T-Shirt transfer painting: (1) watercolor paper (approx. 185 to 300 lbs.), (2) coloring media, (3) thermal transfer paper, and (4) white T-Shirt (100% cotton). Required tools: (1) pencil, (2) composition pen, (3) watercolor pen, (4) palette, (5) brush washer, (6) newspaper, (7) knife, (8) cutting mat, (9) heat transfer machine, and (10) digital camera (mobile phone) (scanner).

The teacher provides students with related samples of T-Shirts. After explaining the meaning of the designed visual patterns, the students can proceed to create using their favorite image. It is recommended that a pencil be used for drawing, then coloring pens can be used as the medium to complete the creation. Furthermore, a mobile phone or a scanner can be used to take pictures then send them to a computer. The image is then printed on a thermal transfer paper using colored or black and white ink. Set the time (about 120 seconds) and temperature (about 180 degrees) of the heat transfer machine and print. Allow to cool and then tear off the transfer paper to obtain the finished product. It is recommended that light-colored clothes be used. Moreover, printing on 100% cotton is more successful. Various types and thickness of clothes require different time and temperature. The teacher can adjust the setting according to the actual situation.

I. Zentangle Art Unit

Materials required for zentangle art: (1) watercolor paper (approx. 185 to 300 lbs.) and (2) coloring pen. Required tools: (1) pencil, (2) composition pen, (3) knife, and (4) cutting pad.

The teacher provides students with related samples of zentangle art, as well as explains creation techniques and applicable design elements. Students can use a pencil to compose a point-and-line visual image according to their preferred element. They can also use coloring pens to apply color or render their work in black and white.

During the creation process, students need to understand the point-and-line design elements, the principle of aesthetics, the appropriate white space of a drawing, and the connection between visual elements to produce the image that they want to display.

IV. RESULTS OF THE APPLICATION OF THE TEACHING UNIT

Student enrollment channels are becoming more diverse. Teachers of students who have no design background should give more examples to guide them to first imitate and learn from the works of others, then teach them to integrate more ideas and show more creative design. The formulation of the scoring standard is (1) color application 40%, (2) creative performance 30%, (3) visual communication 15%, and (4) overall aesthetic 15%. Student works (figure 1~ figure 9) with better performance are shown as the results of the application in each teaching unit.







Fig. 1. baked tempera painting unit results











Fig. 2. paper marbling unit results







Fig. 3. toothbrush painting unit results

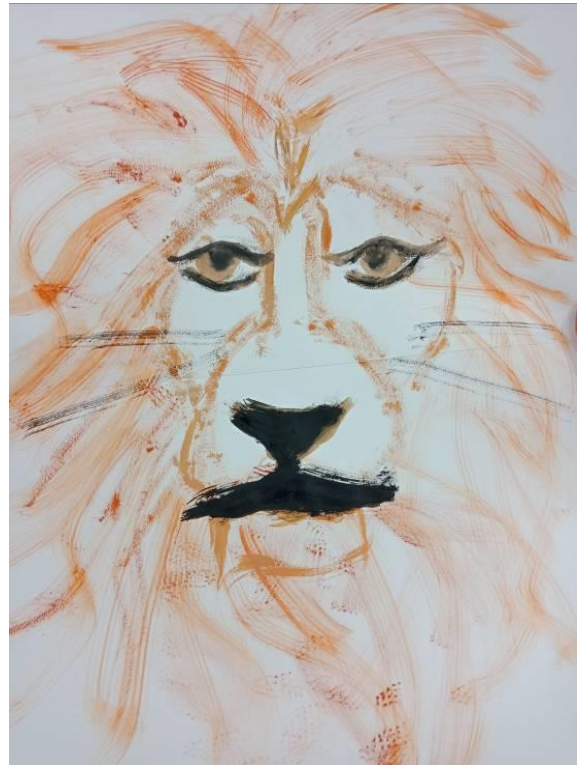
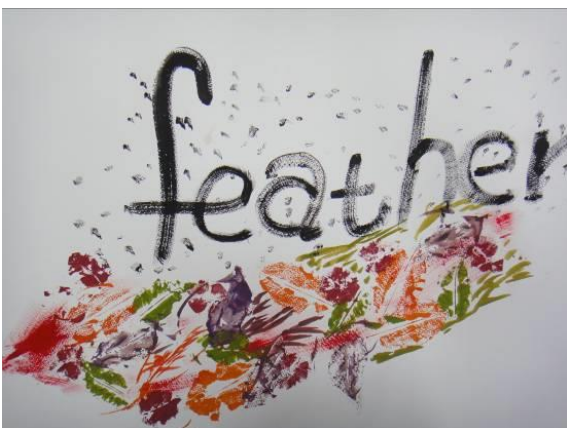
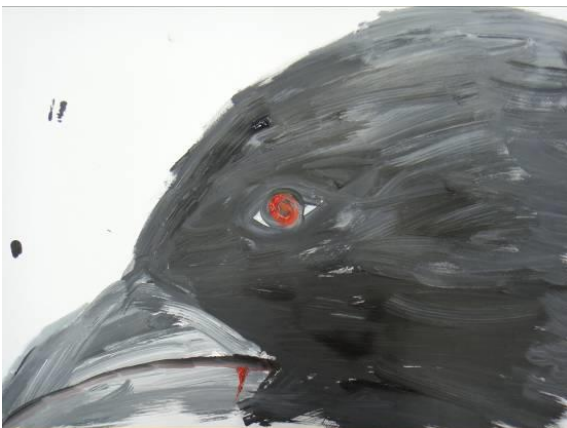


Fig. 4. thumb printing unit results



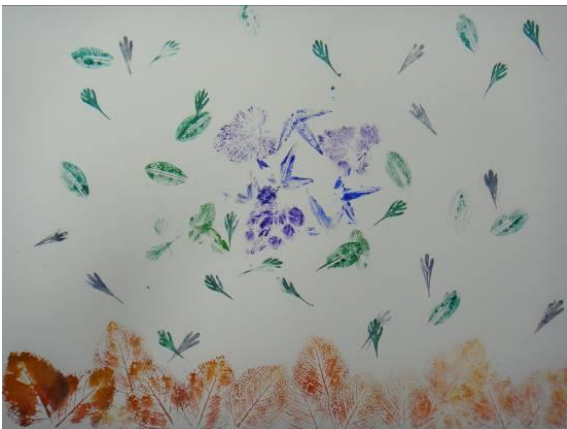
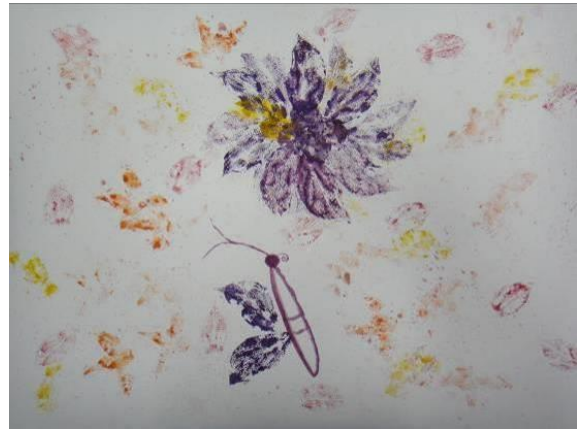




Fig. 5. flower and leaf rubbing unit results

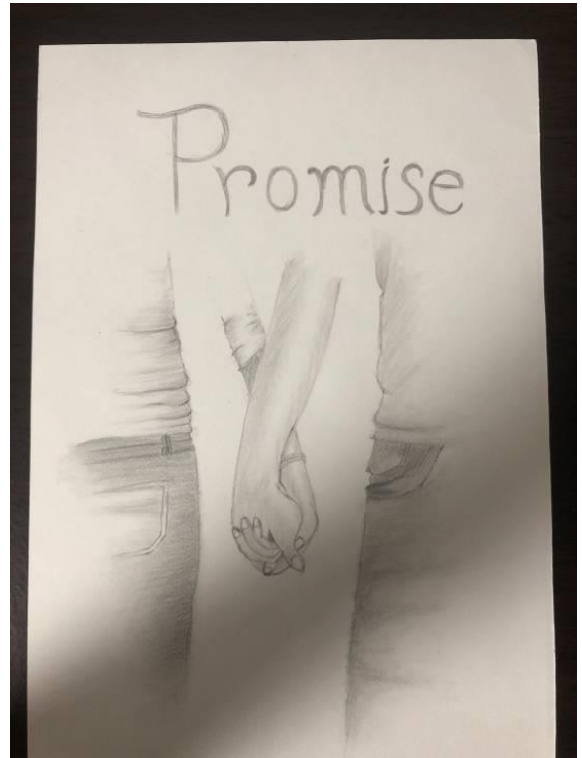
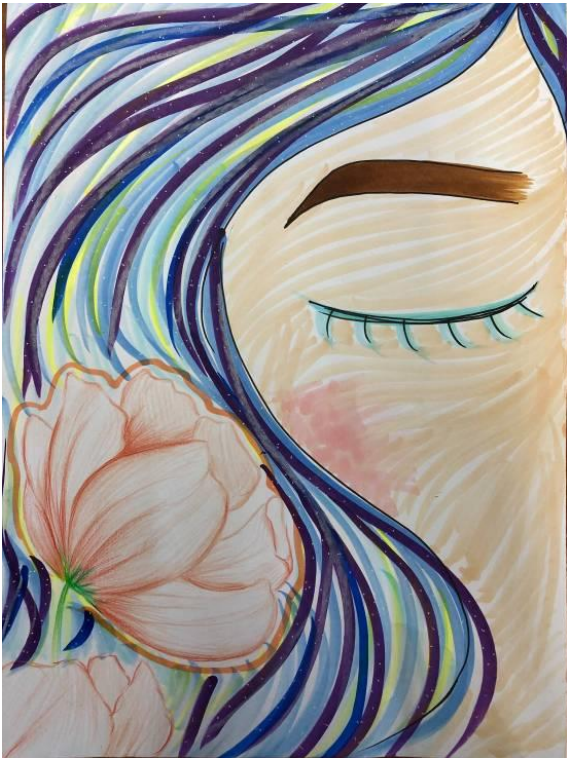






Fig. 6. spiritual card deck art unit results



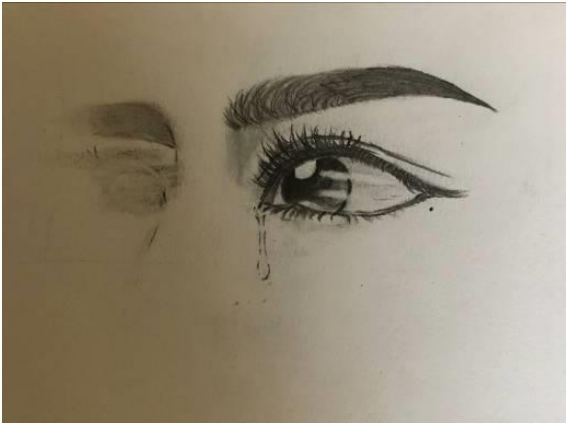
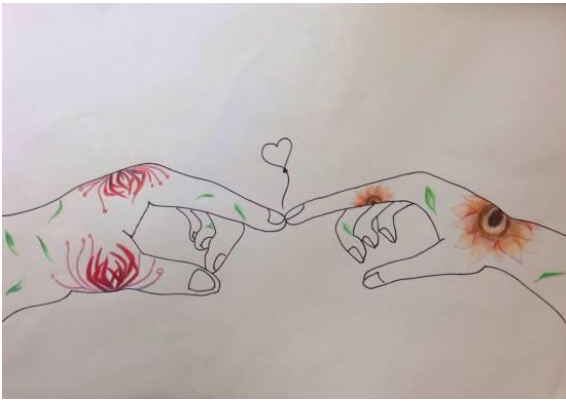




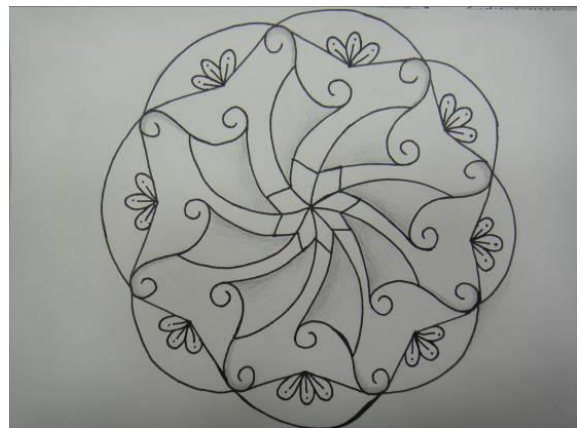
Fig. 7. greeting card art unit results







Fig. 8. T-shirt transfer painting unit results





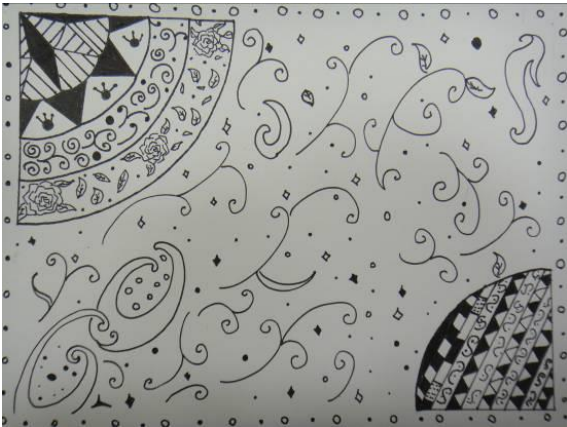
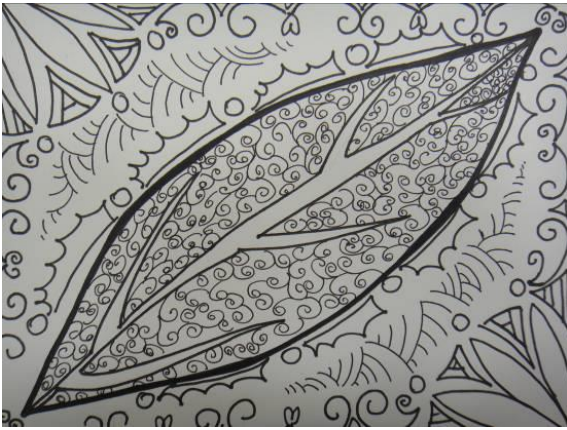


Fig. 9. zentangle art unit results

V. CONCLUSIONS

Nine color teaching units are proposed in this article to enable students to learn from doing and do from learning. This increases teacher-student interaction, builds friendship, and makes the course activities more interesting, thus improving the teaching and learning effectiveness of teachers and students. The results have the following characteristics.

- (1) The color teaching unit can help students understand the characteristics of color, as well as give them a professional knowledge of color matching. This is suitable for beginners who have no design background because it can stimulate interest in learning.
- (2) As the teacher and students played with colors during the activities, the students acquired a hands-on experience and were given the opportunity to be involved personally. As a result, they were able to understand the beauty and mystery contained in colors, thus receiving substantial learning benefits.
- (3) The teacher can give individual guidance to students who do not know how to make creative works. He can also ask those who have better practical ability to assist the less capable students. This can promote peer relationship and provide gifted students better training.
- (4) The teacher and students use color activities to build a mutual friendship. This also makes it easier for students to ask questions and get answers, thus improving professional knowledge of colors.

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