



## MINDFULNESS ART FROM NATURAL COLORS

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### Abstract

**Background and Objectives:** In recent years, the use of natural colors has become one of the popular options for artists and art educators. Working with nature helped adjust the mind to be calm and concentrated. Pigments extracted from nature were not only safe for the body and the environment but also sustainable materials readily available from local areas. Thus, the objectives of this research article were to study and analyze processes for extracting natural colors for use in art creation and art activities and to present guidelines for organizing mindfulness art activities using colors extracted from natural materials.

**Methodology:** This research was a systematic review. Data were analyzed from 24 selected research articles, which were categorized into four main issues: 1) The extraction of natural colors for art creation; 2) The use of natural colors in art activities; 3) Art for mindfulness; and 4) Natural colors and mindfulness. The tools used in this research included: 1) A research quality assessment form related to the topic studied and criteria for evaluating research quality; and 2) A data recording form consisting of general information about the research, such as the name of the author, year of publication, sample group, research methods, and research results.

**Main Results:** 1) The research findings indicated that art activities using natural colors enhanced mindfulness and 2) A guideline for organizing Mindfulness Art Activities from Natural Colors (MAANC Model) was proposed, which consisted of Mindfulness: Adjusting the mind to be calm by engaging with nature and natural materials, allowing the mind to become meditative; Research: Extracting and experimenting with natural materials to find the desired colors for use in art; Skill: Utilizing artistic skills to create art from natural colors extracted independently.

**Involvement to Buddhaddhamma:** The results of this research were categorized as Applied Buddhism, representing the integration of Buddhism with modern or contemporary knowledge. This work fell within the realm of Buddhism and the development of wisdom and morality. The purpose was to present guidelines for organizing mindfulness art activities using natural colors. These activities combined art creation with meditation, using nature as a medium to achieve concentration and peace. Physiological responses to being in a natural environment, such as decreased heart rate, were observed, contributing to mental rejuvenation, improved concentration, and a deeper sense of connection. The processes involved in making art, from extracting colors to experimenting with and applying them, aligned with the Dhamma principles



of the Four Iddhipada (Four Paths of Accomplishment): 1) Chanda (Passion) The satisfaction of exploring and experimenting with creating art from natural materials; 2) Viriya (Diligence) The perseverance to work on art with dedication until its completion; 3) Citta (Mindfulness or Consciousness) The focused intention to research, experiment, and extract colors for the artwork; and 4) Vimamsa (Investigation) The effort to evaluate, plan, examine, and improve the artwork for optimal results.

**Conclusions:** Humans were inherently connected to nature. Working with natural materials brought them closer to their origin, evoking feelings of comfort and belonging. This connection fostered Chanda (Passion), which supported other creation processes until completion. Working with natural colors demonstrated a tendency to calm the mind. Furthermore, art activities using natural colors positively influenced meditation, promoting mindfulness and mental clarity.

**Keywords:** Mindfulness, Art, Natural Colors

## Introduction

In recent years, the use of natural colors has become a popular choice as people increasingly pay attention to environmental and health concerns. In modern times, artificial materials flooded daily life, many of which were hazardous and harmful to health. In contrast, natural materials proved to be environmentally friendly and harmless to the body. Furthermore, art supplies made from natural substances were found to influence the mind by promoting calmness and balance (Milintanuch, 2008). Using materials derived from nature as tools in creative work helped individuals develop a calm state of mind and achieve concentration (Thongkajorn, 2021).

Additionally, health concerns played a significant role in driving consumers toward the use of natural colors. Paints available on the market often originated from synthetic materials that failed to eliminate impurities completely. Some of these paints contained heavy metal residues such as chromium, cadmium, mercury, and arsenic, which posed serious health risks. Ingesting these metals in large amounts could be life-threatening. Moreover, substituting synthetic paints with natural colors reduced the environmental impact (Wattanakit et al., 2015). For these reasons, natural colors gained greater support as society increasingly valued environmental preservation. Natural colors, often stemming from local wisdom, also carried cultural significance (Nuengchalerm, 2023). This aligned with Li (2018), who stated that natural colors were sustainable materials readily available in nature, whether sourced from soil, flowers, or trees. Working with natural materials directly engages the human body, mind, and movement, thereby effectively reflecting an individual's unique identity.

Many studies revealed that natural colors used in art creation are closely related to the concentration and mindfulness of the artist. Hsieh (2010) conducted research on the effects of Buddhist meditation practices on artistic creation. Through personal experimentation, she practiced meditation before creating art and used natural colors, such as those extracted from coffee or wine, to paint Bodhisattva Padmapani. The results indicated that meditation, combined



with natural materials in painting, allowed the body and mind to merge, resulting in peace, mindfulness, and an enhanced ability to create art freely. Similarly, Chaisorn's (2018) research on meditation and color extraction from rocks demonstrated comparable findings. By experimenting with rocks of varying colors from the mountains of Mae Taeng District in Chiang Mai Province, Chaisorn extracted pigments into various tones and used them to create art. He integrated Buddhist principles of meditation and mindfulness into his process. The findings showed that engaging with and perceiving natural materials, such as transforming rocks into pigments, enabled the researcher to focus on his work at every moment. Particularly during the application of color, the tones formed a connection between natural substances and spiritual elements. This process resulted in artworks that conveyed calm emotions, mindfulness, and deep concentration.

Based on this information, the author recognized the importance of mindfulness, art, and natural colors, as well as their meaningful relationship in the creation of art activities. Therefore, this article aimed to present research through a systematic review method, leading to the proposal of guidelines for organizing mindfulness art activities using natural colors.

### **Objectives**

The objectives of this research article were to study and analyze processes for extracting natural colors for use in art creation and art activities and to present guidelines for organizing mindfulness art activities using colors extracted from natural materials.

### **Methodology**

This research employed a systematic review method, which consisted of the following steps:

**Step 1:** Information, documents, and research articles related to the research's main ideas were gathered. These included topics such as the extraction of natural colors for art, the use of natural colors in art activities, art for mindfulness, and the relationship between natural colors and mindfulness. The materials were sourced from online databases both domestically and internationally, covering a period of 10 years (2014-2024). Keywords used for the search included terms such as Natural Pigments, Natural Color, Natural Materials, Soil Color, Soil Painting, Earth Pigment, Stone Color, Mineral Color, Dyeing Color, Indigo Color, Color from Leaves, Clay Colors, Rock Colors, Leaf Colors, Plant Colors, Meditation Art, Buddhist Meditation Art, Mindful Art, Mandala Art, Zen Art, Transcendental Painting, Nature Mandala, Mental Arts, Art Activities with Mindfulness, and Mindfulness with Art. The selection criteria were specified as follows:

1. Research that studied methods and results of artistic meditation using natural colors and their effects on art practitioners.
2. Research obtained from databases such as Scopus, SURE, Thaijo, Semantic Scholar, CUIR, ERIC, Taylor and Francis, and JSTOR.

The researcher selected literature using systematic filters, focusing on articles that emphasized mindfulness, art, and nature. Initially, 10,266 theoretical and empirical research articles were identified. These articles included background information, author names, journal



titles, and sample characteristics. Articles not published in the last 10 years were excluded, reducing the number to 5,030 articles. Further filtering removed articles without full-text access, leaving 775 articles. Finally, articles not related to natural colors in art or artistic mindfulness with natural colors, as well as academic articles, were excluded. This process resulted in 24 research articles relevant to the use of natural colors in art and artistic mindfulness.



**Figure 1** Systematic literature review process



2.1 Research samples were selected from articles published between 2014 and 2024.

2.2 Research tools included:

2.2.1 A research quality assessment form tailored to the topic and evaluation criteria for research quality.

2.2.2 A data recording form for analyzing and synthesizing data, which included general information about the research, such as the author's name, year of publication, sample group, research methods, research format, and research results.

**Step 2:** Data were analyzed using descriptive statistics and content analysis. The research implementation plan was reviewed using a checklist created by the researcher, which contained general information about the studies, such as author names, publication years, objectives, research methods, and results. Selected studies were required to fulfill all evaluation criteria. The content analysis focused on four main issues: 1) The extraction of natural colors for art creation; 2) The use of natural colors in art activities; 3) Art for mindfulness; and 4) Natural colors and mindfulness.

**Step 3:** The results of the systematic literature review were analyzed and summarized.

**Step 4:** The findings from the systematic literature review were synthesized to create guidelines for organizing mindfulness art activities using natural colors. (In Figure 1)

## Results and Discussion

From the analysis of documents and various research studies related to the extraction of natural colors for creating art, the use of natural colors in art activities, art activities that foster mindfulness, and the connection between natural colors and mindfulness (Published Between 2014 and 2024 in Domestic and International Online Databases), several important issues were identified as follows:

### 1. Extraction of Natural Colors for Art Creation

From a systematic literature review of research on the extraction of natural colors for art creation, a total of seven complete research articles were obtained. All of them were qualitative studies. The findings are summarized in Table 1.

**Table 1** Analysis of research methods for extracting natural colors for art and study results

Researcher and Research Title	Objective	Research Methods	Study Results
Jordet (2023) Painting with natural pigments on drowning land: the necessity of beauty in a new economy	To research young girls learning to create natural pigments and traditional paintings in areas at risk of severe weather conditions.	Qualitative Study -Focus group discussions and in-depth interviews on the aspirations of ethnic girls in creating natural pigments. Starting with extracting color from berries, fruits and flowers. Go through the process of creating and mixing paint until painting is complete.	Painting with natural pigments affects: Finding beauty in nature, transcending one's own mind, developing responsibility, and self-esteem.



**Table 1** Analysis of research methods for extracting natural colors for art and study results (Continued)

Researcher and Research Title	Objective	Research Methods	Study Results
<b>Bureekhampun &amp; Maneepun (2021)</b> Eco-Friendly and Community Sustainable Textile Fabric Dyeing Methods from Thai Buffalo Manure: From Pasture to Fashion Designer	To study local wisdom in the art of producing dyes from fresh buffalo dung.	Qualitative Study -In-depth interviews with experts and testing of dyes made from fresh buffalo dung in various forms. Using different dyeing processes such as cotton dyeing with lye and mud to dye the strands.	Dyes made from buffalo dung are of high quality and are valuable as an eco-fashion that is environmentally friendly, where traditional textile production techniques are economically efficient.
<b>Ondarza (2019)</b> The Color of Survival: An inquiry-based inter-disciplinary study of bacterial pigments. Department of Biological Sciences	To study natural pigments that come from bacteria.	Qualitative Study -Study bacterial pigments through culture. The effects of temperature, light, or nutrients on color development can be observed. After that, try using the dye from bacteria to write on the clear agar sheet.	Studying natural pigments that come from bacteria has led to a greater understanding of their function, leading to the development of their use in creating art.
<b>Taemprasit (2019)</b> Soil painting: Trace of phenomena and beauty of the land	To create and present works of art that reflect values and the meaning of clay materials.	Qualitative Study -Go to the area to study soil properties, soil color, and search for soil texture from various places. Then, experiment with extracting clay colors to create various types of paintings that include relief, color texture, flow, cracking, and creating symbols to convey meaning.	There are paintings made from clay that are chosen to represent space and identity that connect personal memories to collective memories.
<b>Pittayamatee (2016)</b> Aesthetic Experience from Thai colors	To synthesize knowledge about Thai colors and pass on the wisdom of Thai colors.	Qualitative Study -Study the characteristics of natural Thai colors, consisting of 1) Gold color from gold leaf; 2) Red color from red clay; and 3) Indigo color from indigo leaves, and discover another 220 colors, after which they were used to create paintings.	Gain knowledge about colors from extracting natural colors which are unique to Thai colors. Natural colors can be used to make art effectively.
<b>Pongsarodjanawit (2022)</b> The womenswear branding innovation from innovative filagen textiles with Bixa Orellana dyeing for generation green by using conscious design concept	To find a way to create a women's clothing brand from innovative filagen textiles using the contemporary plant dyeing process.	Qualitative Study -Study the process of dyeing orange from the Kham Saet plant, which is a local plant in Thailand. Experiment with innovative textile dyeing using filagen to create an orange color identity in textiles.	Textile innovation: Filagen dyed from Khamsae plants, giving beautiful, natural colors in line with the needs of the Green Generation target group. It is contemporary and has sustainable value.



**Table 1** Analysis of research methods for extracting natural colors for art and study results  
(Continued)

Researcher and Research Title	Objective	Research Methods	Study Results
<b>Narongdecha &amp; Soodsang (2022)</b> The durability of natural extracted colors on the different types of watercolor paper	To study the durability of naturally extracted dyes on different types of paper for watercolor painting.	Qualitative Study -Study the process of extracting natural dyes with ethanol for use in art. After that, experiment with colors extracted from plants on watercolor paper, such as those extracted from gardenia, red fang, butterfly pea, turmeric, roselle, etc.	Natural colors can create good works of art. Khamsaet can provide the best and most suitable color to replace synthetic colors. The colors extracted from other plants can be used as watercolors as well and have a fast drying characteristic.
<b>Total Number of Research Studies</b>	<b>7 Research Articles</b>		

The review revealed that natural materials popularly used for extracting colors included soil, rocks, and various plants. Studies showed that natural colors derived from these materials were effectively used in art. For instance, plant-based and fruit-based colors, such as those from Kham Saet, demonstrated excellent properties for creating art, effectively replacing synthetic colors while being environmentally friendly and sustainable. This aligned with the research by Kunthonsap et al. (2017), who studied Thai natural color wisdom by analyzing the characteristics of environmentally friendly materials. Their findings indicated that colors extracted from local natural sources such as fang, okra, lac, turmeric, jackfruit pith, Malabar, peak, and butterfly pea could, when combined with five types of local color-causing substances-tamarind wood ashes, burnt cockle shell cement, table salt, alum, and lime-create unique, locally distinctive colors. These processes effectively reduced environmental impacts.

Economically, natural colors also addressed market demands, promoting the development of domestic raw materials. This was consistent with the research by Bureekhampun & Maneepun (2021), who studied local wisdom in producing dyes from fresh buffalo dung. Their findings indicated that dyes derived from Thai buffalo dung were of high quality and valuable as an eco-friendly fashion material, suitable for business expansion. Similarly, Pongsarodjanawit (2022) found that textile innovations such as file dyed with Kham Sae plants produced beautiful, natural colors that met the preferences of the Green Generation target group. Both studies aligned with findings by Na Chumphae & Sodpiban (2009), which emphasized the value of natural materials and the need for their promotion and development to maximize economic benefits and meet market needs. Additionally, the Department of Agricultural Extension (2021) indicated that natural materials had structures and forms suitable for the environment, local uses, and the lifestyles of Thai people in specific areas.

Beyond the economic and environmental benefits, the extraction of natural colors for art also significantly impacted the mental well-being of practitioners. For instance, Jordet's (2023) study on young girls learning to create natural pigments and traditional paintings in regions vulnerable to severe weather conditions found that painting with natural pigments helped the participants appreciate the beauty of nature, transcend personal struggles, and develop responsibility and self-esteem. Similarly, Taemprasit (2019) presented works of art created from clay, reflecting the intrinsic value of nature. Research demonstrated that clay paintings evoked feelings of connection and awareness of past memories, which were passed on to viewers. Natural colors, therefore, offered both tangible benefits, such as enhancing the visual appeal of art, and intangible ones, such as fostering inner beauty and emotional resonance for the artist.

### 2. The Use of Natural Colors in Art Activities

Research on the use of natural colors in art activities resulted in a total of six complete research articles. Among these, five articles employed quantitative research methods, while one used a qualitative approach, as summarized in Table 2.

**Table 2** Analysis of research methods and results on the use of natural colors in art activities

Researcher and Research Title	Objective	Research Methods	Study Results
<b>Mahmuda et al. (2022)</b> The Effect of Finger-Painting Activities Using Natural Materials on the Creativity of Children Aged 5-6 Years	To explain the results of applying finger painting activities with natural materials to children's creative abilities.	Quantitative Study -Study the process of organizing activities from natural materials. After that, create a finger-painting art activity using natural materials by having students practice mixing colors and painting it with their fingers.	Activities from natural materials in the process of learning art have a great effect on the creativity and mood of students.
<b>Perez et al. (2022)</b> Joint sand painting as a potential intervention technique in parent-child art psychotherapy: The subjective experiences of mothers and children in a non-therapeutic setting	To study sand painting that has an effect on family mental therapy.	Quantitative Study -Study the process of organizing sand painting activities. After that, create a sand painting art activity by having mothers and their children aged 6-10 years participate in sand drawing activities together.	The experience of painting sand together creates family bonds that lead to a process of healthy relationship change.
<b>Dimpel (2019)</b> Making and Using Natural Art Materials and its Effect on Adolescents' Self- Concept	To observe the impact of using natural art materials to create art on the ideas of teenagers.	Qualitative Study -This study was conducted in a high school. Finally, two students used art tools they had made from materials from natural sources, such as extracting natural dyes using egg yolks, spices, rocks, and other objects, to create their own art.	Students who extract natural dyes feel satisfied with their work and are able to process their internal thoughts, emotions, and expressions better.





**Table 2** Analysis of research methods and results on the use of natural colors in art activities (Continued)

Researcher and Research Title	Objective	Research Methods	Study Results
<b>Pichayapaiboon (2018)</b> Aesthetic Experience from Innovative Pearl Plate Color to Enhance Student Environmental Sustainability Awareness	To study the results of multidisciplinary activities that create an aesthetic experience and to study satisfaction with the aesthetic experience resulting from pearl flake paint.	Quantitative Study -The researcher used the concepts and principles studied to develop art activities. After that, they created art activities using pearl paint as a creative medium for making art by experimenting with students.	After doing activities learners have higher knowledge and attitude towards sustainable environmental protection than before the activity. Including being very satisfied with the aesthetic experience.
<b>Katkaew &amp; Boonyananta (2023)</b> Natural Color to Create Printmaking Art for The Elderly	To develop natural color formulas for use in creating graphic arts for the elderly so that the elderly can still make such colors themselves.	Quantitative Study -The developed natural colors were used to experiment with graphic art activities with the elderly group by printing images through stencils, printing images with cardboard, printing images through deep grooves.	The results of the trial among the elderly found that the colors can stick and last well on paper and have the possibility of being developed for use in organizing activities for the elderly.
<b>Wattanakit et. al. (2015)</b> Natural intertextuality: Natural pigment integrated by local wisdom and cleaner technology beyond to the creativity of art education	To create a learning set for natural colors from local wisdom by integrating clean technology that is suitable for learning about art education.	Quantitative Study -The developed learning kit was tested with Grade 5 students. In the activity, students were able to create natural colors by themselves using the technique of increasing the thickness of the color with lye. After that, they started making art.	Get natural primary colors produced with clean technology that comes from local wisdom, which have good quality colors. The use of learning activity sets resulted in very good student behavior evaluation results.
<b>Total Number of Research Studies</b>	<b>6 Research Articles</b>		

A systematic review of the literature revealed that using natural colors in art activities had a positive impact on the emotional development and expression of students. For instance, one study allowed students to experiment with natural dyes independently. Ondarza (2019) observed the effects of natural art materials on teenagers' ideas by letting them use tools made from natural sources, such as egg yolks, spices, stones, and other objects, to extract paints and create art. The findings showed that students who extracted colors themselves felt satisfied with their work. They were able to process internal thoughts, emotions, and external expressions, fostering a deeper connection with themselves. This was consistent with the findings of Mahmuda et al. (2022), who applied finger-painting activities using natural materials to evaluate children's creative abilities. Their results demonstrated that incorporating natural-colored materials in art learning significantly enhanced students' creativity and emotional expression. Similarly, Wattanakit et al. (2015) developed a natural color learning kit inspired by local wisdom and tested it with fifth-grade students.

The activity required students to create their own natural colors using a thickening technique with lye. The results indicated that students exhibited excellent classroom behavior and showed keen interest in creating natural colors for use in their artwork.

In addition to these findings, natural coloring activities proved to be valuable tools for enhancing mental well-being. Perez et al. (2022) studied the effects of organizing sand-painting activities. In their research, mothers and their children aged 6-10 participated in an activity where they drew using natural sand colors together. The study found that this shared experience fostered a strong bond between mothers and children, leading to improved family relationships. Similarly, Katkaew & Boonyananta (2023) conducted an experiment where they used natural colors for printing activities with elderly participants aged 60-79. The results revealed high satisfaction among the elderly participants, who appreciated working with natural colors and noted that the paint adhered well to the paper.

In terms of public consciousness, natural colors influenced participants' perceptions of nature and the environment. Pichayapaiboon (2018) created an art activity using pearl-based paint as a creative medium. The activity, conducted with students, revealed that participants demonstrated increased knowledge and improved attitudes toward environmental sustainability. They expressed high satisfaction with the aesthetic experience of working with pearl flake paint.

### 3. Art for Mindfulness

Research studies on mindfulness art included both individual and group-based mindfulness meditation activities. Eight research articles were identified: three were quantitative studies, four were qualitative studies, and one employed a mixed-methods approach. These studies are summarized in Tables 3 and 4.

**Table 3** Analysis of research methods and results on meditation for self-development

Researcher and Research Title	Objective	Research Methods	Study Results
<b>Dinsakul (2020)</b> The journey of confusion in meditation into abstract painting	Study the concept, philosophy and practice of meditation in the form of contemplative studies to create abstract paintings.	Qualitative Study -Study theories from various knowledge sources regarding art and meditation. Then analyze, extract, and interpret them to create abstract paintings inspired by the study of contemplative knowledge.	It was found that Buddhist philosophy has great value in creating visual arts. Along the way of working, the artist used to consider breathing in and out until he saw diffusion and calmness. The work thus expresses an understanding of human emotions through abstract art that uses geometric shapes.
<b>Jahan (2021)</b> Painting as A Form of Meditation; An Observation of Influences of Mindfulness Meditation Through the Process of Painting	To determine whether Mindfulness Meditation influences art work or not. This study focuses on artist development.	Qualitative Study -Experiment with himself by practicing two types of drawing: Drawing with mindfulness meditation to control his work and drawing with letting his mind go freely, and then compare the results.	Drawing with controlled mindfulness meditation helps build confidence, heals inner feelings, creates order in work better than normal drawing, and also makes the work neater.



**Table 3** Analysis of research methods and results on meditation for self-development  
(Continued)

Researcher and Research Title	Objective	Research Methods	Study Results
<b>Lorentzsen (2019)</b> The Mandala as Response Art: A Method for Centering, Containing, and Exploring	To review research studies on the effects of creating mandalas on the mental health of those making them.	Mixed Method Study -Review research studies on the effects of creating mandalas on various mental health conditions, then try drawing his own mandalas.	The results of the literature review found that mandala is an art that has outstanding properties in developing, maintaining, and healing all forms of the mind and that mandala helps to organize the mind of the researcher.
<b>Total Number of Research Studies</b>	<b>3 Research Articles</b>		

**Table 4** Analysis of research methods and results on the use of meditation to develop group activities

Researcher and Research Title	Objective	Research Methods	Study Results
<b>Sukasam (2022)</b> The development of an artistic activities model to enhance concentration of children with moderate intellectual disabilities aged 6-12 years	To study the results of developing art activity formats to increase concentration of children with moderate intellectual disabilities aged 6-12 years.	Quantitative Study -Bring an art activity set which includes coloring, tearing patches, drawing, and sculpting, was tested with children with intellectual disabilities and analyzed using the Wilcoxon signed-rank test.	It was found that the activity format was effective in helping children increase their mindfulness levels as well as helping them develop their artistic skills as well.
<b>Premnirandon (2016)</b> Teaching model for thai ornament drawing by using body mindfulness meditation practice for students in secondary level	To develop a teaching model for Thai pattern drawing using the principles of Kayanupassana for students at the lower secondary school level.	Quantitative Study -The sample group practiced drawing Thai patterns using the principles of physical consideration, consisting of basic lines, and drawing Kanok patterns by doing everything according to the perforations for 1 month.	The group of learners who participated in the program had better Thai pattern drawing skills and felt calm and mindful from practicing Thai pattern drawing.
<b>Henriksen et al. (2022)</b> Meditative to create: Mindfulness and creativity in an arts and design learning context	To review research studies on the effects of creating mandalas on the mental health of those making them.	Quantitative Study -A review of research studies on the effects of mandala creation on mental health conditions.	The results of the literature review indicated that mandalas have outstanding properties for developing, healing, and helping to organize the mind.
<b>Morrissey (2019)</b> A Phenomenological exploration of mindfulness meditation and the creative experience	To explore the value of mindfulness meditation in developing creativity	Qualitative Study -The subjects were trained using mindfulness meditation to create mandala art. After that, an interview was conducted to explore thoughts and expressions in creative work.	A group of learners who participated in a mindfulness meditation program to make mandala art was able to develop their creativity effectively.

Researcher and Research Title	Objective	Research Methods	Study Results
Espinosa (2018) Art as a mindfulness practice	To study the effects of using art therapy activities that emphasize mindfulness meditation on reducing stress and headaches in teenage girls.	Qualitative Study -A sample group of teenage girls with high stress participated in art therapy activities that focused on meditation along with considering hand and body movements and creating mandala art. Upon completion of the activity, interviews and group discussions were conducted.	Art therapy activities that focus on mindfulness and meditation help young girls who experience high stress to relax and feel more supported.
Total Number of Research Studies	5 Research Articles		

A systematic review of the literature revealed that using meditation to develop oneself through praying and observing the breath before starting an activity-induced calmness and improved work efficiency. For example, Dinsakul (2020) used mindfulness meditation, focusing on breathing in and out, to observe the fluctuations between confusion and calmness in the mind during art-making. This process enabled individuals to learn and express various emotions through abstract geometric artworks. The study concluded that mindfulness meditation influenced every step of the art-making process. This finding aligned with Jahan's (2021) research, which involved an experiment where he practiced two types of drawing: one with controlled concentration and the other with a more relaxed, free-flowing approach. The results showed that drawing with controlled concentration build confidence, healed inner emotions, and created order and neatness in the work, outperforming normal drawing in these aspects.

In studies focused on development through group activities, mandala-making was found to be a popular method for enhancing students' emotional, mental, and mindfulness capacities. For instance, Espinosa (2018) conducted research that used mindfulness training involving contemplation of hand and body movements during mandala creation. The results indicated that combining mindfulness with mandala-making helped highly stressed girls to relax and feel supported. Similarly, Morrissey (2019) implemented a mindfulness meditation program integrated with mandala artwork in a sample group. The study concluded that this approach enhanced mindfulness and significantly developed creative thinking. Mandalas were shown to be particularly effective for improving concentration. For example, in Lorentzsen's (2019) study, research on mandalas and mental health was reviewed, followed by his personal experiment in drawing mandalas. The findings revealed that mandala creation improved mental health and helped the researcher organize his thoughts effectively.

Other forms of art activities were also found to be beneficial for developing concentration. Premnirandon (2016) developed a teaching model for Thai pattern drawing using



the principles of Kayanupassana and tested it with lower secondary school students. The sample group practiced drawing Thai patterns, such as Kanok motifs, by focusing on body awareness, including the coordination of hands, lines, and the mind, over one month. The results demonstrated that the students improved their Thai pattern drawing skills and experienced increased calmness and focus. Sukasam (2022) developed a framework for art activities designed to enhance concentration in children aged 6-12 years with moderate intellectual disabilities. The activities included coloring, patching, drawing, and sculpting. When tested with the children, the results, analyzed using Wilcoxon signed-rank test statistics, showed that the variety of art activities not only improved concentration levels but also helped develop artistic skills and aptitudes in the participants.

#### 4. Natural Colors and Mindfulness

There were three qualitative research studies on natural colors and mindfulness, which were summarized in Table 5.

**Table 5** Analysis of natural color and concentration research methods and results

Researcher and Research Title	Objective	Research Methods	Study Results
<b>Thongkajorn (2021)</b> Micro-State	To create works of visual art in the form of 2D semi-abstract line drawings and learn the principles of Dhamma through making art.	Qualitative Study -Analyze the insect remains according to the principles of impermanence. To create a painting using natural colors such as charcoal powder, dust, and salt in the work.	There is a set of 5 works, "Julaphapha", which are inspired by insect remains. This allows the researcher to contemplate on nature of birth and death, which is a form Vipassana meditation.
<b>Chaisorn (2018)</b> Nature soul: Natural color from stone	To study meditation to understand the essence of nature, understand oneself, and use it to create 2D visual art and installation art forms.	Study Buddhist meditation: After that, they collected stone samples at Tharathip Chai Pradit Temple to try to get different types of colors. Then, they used it to create works of art.	There are 4 sets of works "Nature soul: Natural color from stone" inspired by the natural environment around the temple combined with the principles of meditation and mindfulness. It is presented through the process of 2D visual arts and layouts.
<b>Macleod (2020)</b> "Calming Watercolors": Using Mindful Art colors: Using Mindful Art in Treatment of Mood Disorders	To explore the impact of mindfulness and the arts on individuals with mood disorders in psychiatric hospitals through the implementation of orders.	Quantitative Study -The sample group participated in art activities that focused on mindfulness. The paint used is water-based paint made from ground beef mixed with Arabic glue extracted from the acacia tree.	Results indicated positive trends in both mood and anxiety among participants. Most experience a sense of calm, creativity.
<b>Total Number of Research Studies</b>	<b>3 Research Articles</b>		

A systematic review of the literature revealed that natural colors used to create art had a strong relationship with artists' mindfulness. Two studies incorporated praying with a mantra and contemplating the breath while making art. For instance, Thongkajorn (2021) created visual





artworks in the form of two-dimensional semi-abstract line paintings. He considered the remains of stored insects through the principles of impermanence and painted using natural colors such as charcoal, dust, and salt, combined with Vipassana meditation. The research showed that using mindfulness meditation alongside natural colors and observing insect corpses resulted in order and tranquility. It allowed the researcher to reflect on the nature of birth and death, which he applied to his life. Similarly, Chaisorn (2018) studied Buddhist meditation and collected various types of rocks to extract paint for creating art. While working, he applied meditation principles. The study revealed that extracting colors from nature and praying while making art inspired the creation of a series of works titled "Nature Soul: Natural Color from Stone." This series represented artwork distilled from meditative practice, demonstrating that natural colors combined with mindfulness meditation helped develop the body and mind and resulted in higher-quality artworks.

In addition, mindfulness art using natural colors clearly alleviated symptoms of depression. Macleod (2020) organized art activities to examine the influence of art and integrated mindfulness on a group of patients with depression. The activity involved using watercolors made from finely ground pulp mixed with gum Arabic extracted from the acacia tree. The research showed clear improvements in both mood and anxiety among participants, who reported feeling calmer, more focused, and more creative after the activity.

The systematic review highlighted that nature had a profound influence on adjusting human minds toward calmness and balance. Using natural materials as tools in creative processes contributed to a meditative state. Thongkajorn (2021) found that meditation before art-making, combined with natural colors, helped cultivate a tranquil and reflective mindset. Similarly, Hsieh (2010) experimented with painting a Bodhisattva using natural colors from coffee and wine, as well as drawing mandalas with natural sand. Over several months, the study revealed that combining natural colors with meditation promoted mind-body harmony, leaving participants feeling relaxed, energized, and happy.

Many studies suggested that art made with natural paints had a greater positive impact on mindfulness meditation and behavioral development than synthetic materials. Dimpel (2019) explored the effects of creating and using natural art materials on high school students' thinking. Two students extracted natural dyes from materials such as egg yolks, spices, and stones to create their artwork. The study found that the learners developed better emotional and cognitive processing through this hands-on approach. The natural color production process required patience and step-by-step development, encouraging mindfulness. Jordet (2023) studied the experiences of a young girl who created natural pigments in areas vulnerable to acute weather conditions. Through group discussions and in-depth interviews, the study revealed that extracting pigments from berries, fruits, and flowers fostered inspiration and personal growth. The research demonstrated that painting with natural pigments significantly influenced emotional and behavioral development. This aligned with Li (2018), who argued that natural paints are sustainable materials with direct benefits for the body, mind, and human movement. Cattanaach (1999) discussed the



intricate steps of creating art with natural colors, from extracting the pigments to testing the textures and completing the final artwork. This process echoed Somsak et al. (2022), who highlighted the similarities between Vipassana meditation and creating natural colors, emphasizing mindfulness, contemplation, and patience in every stage.

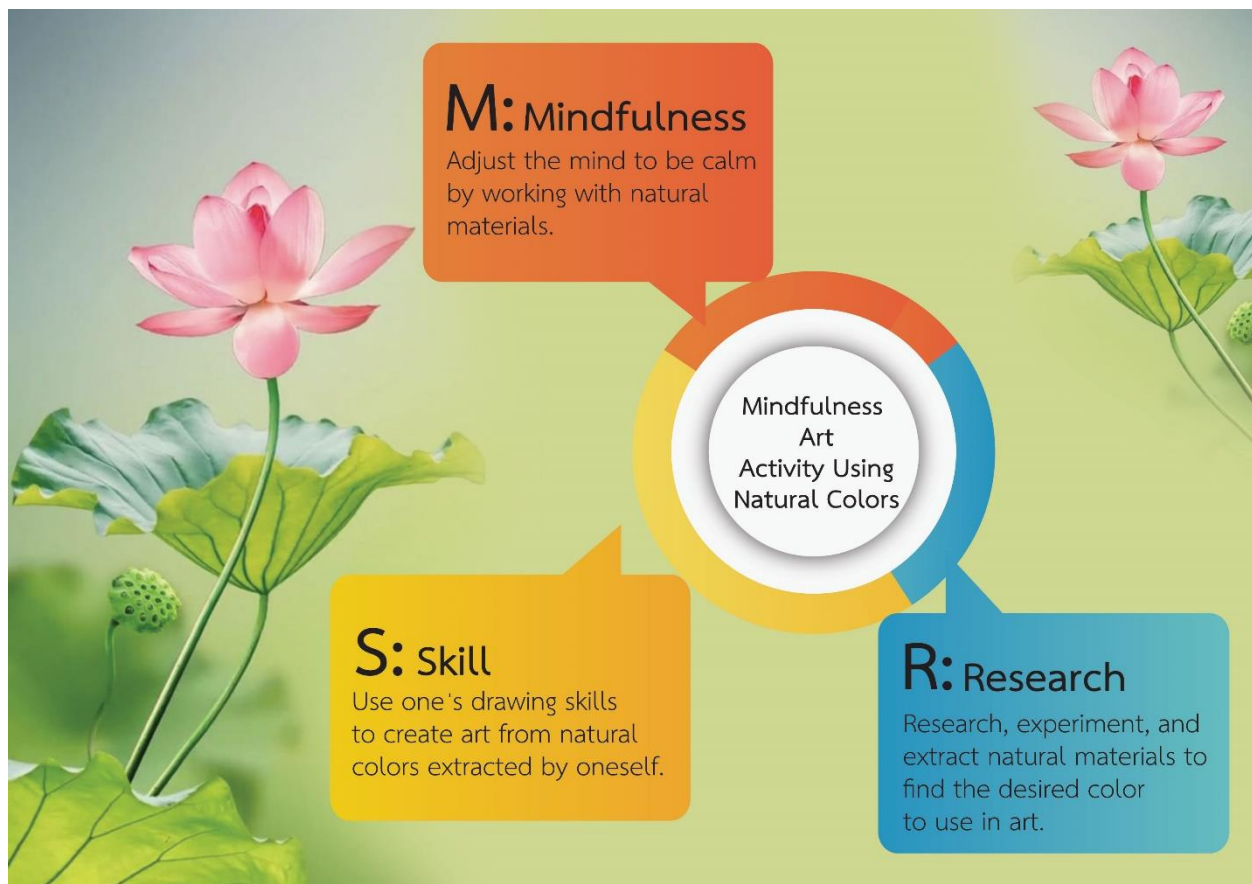
The evidence from the four main issues discussed-natural color extraction, the use of natural colors in art activities, art for mindfulness, and natural colors and mindfulness-underscored the importance of natural colors in organizing art activities that cultivate mindfulness.

Based on this synthesis, the research proposed a guideline for organizing mindfulness art activities using natural colors, called the MAANC Model (Mindfulness Art Activity from Natural Colors).

### Originality and Body of Knowledge

This research provided a guideline for organizing **Mindfulness Art Activity from Natural Colors (MAANC Model)**. (In Figure 2)

The model outlined the organization of art activities aimed at improving mindfulness by using natural colors as essential materials for the activities, which included researching, experimenting, and extracting colors.



**Figure 2** Mindfulness Art Activity from Natural Colors Model (MAANC Model)



The MAANC Model consisted of the following elements:

**Mindfulness:** Adjusting the mind to become calm by working with natural materials (Nature-Based Learning), fostering gratitude and tranquility, which led to mindfulness. In this step, participants will gently touch and observe natural materials such as leaves, tree branches, flowers, and rocks that will be used to compose and create an artwork. Then, they will work with concentration and tightly coordinate their hands and minds. The appearance of the complete artwork will indicate how focused the participant is through the meticulous use of colors, composition of the image, and attention to detail.

**Research:** Conduct research, experiment, and extract natural materials to discover the desired colors for use in art. In this step, participants will learn how to explore natural materials, extract colors by themselves, and experiment with hand-made paint in the artwork.

**Skill:** Applying one's drawing and painting skills to create art from self-extracted natural colors while simultaneously developing mindfulness. In this step, participants will observe and feel the movement of their hands while working, from preparing the composition of the work to using natural materials to create the image by dipping, painting, and elaborating details of the artwork.

## Conclusions and Recommendations

The guideline for organizing mindfulness art activities using natural colors (MAANC Model) emphasized the use of mindfulness as a foundation for experimenting and developing art skills alongside mindfulness improvement. These activities covered three domains of learning: Affective, Cognitive, and Psychomotor. Affective Domain: Working with natural materials was shown to reduce stress and mental distraction. Learners adjusted their minds to a calm state by interacting with natural materials until they experienced gratitude and tranquility a meditative state that aligned with the concept of Nature-Based Learning. Cognitive Domain: Learners gained knowledge through research and experimentation, extracting colors, and creating artwork. This process represented Experiential Learning, where learners engaged directly with materials and processes to acquire deeper understanding. Psychomotor Domain: Learners developed drawing and painting skills while creating art from natural colors they had extracted themselves. This allowed them to understand the creative medium more deeply, including natural colors, technical, artistic approaches, and the relationship between art and mindfulness. Suggestions for Applying the Teaching Model for Maximum Benefit: 1) Allocate an appropriate amount of time for the activity to allow learners to immerse themselves and deepen their experiences; 2) Experiment with this activity among different groups of learners from various locations and cultural backgrounds to gather richer results, feedback, and insights. These findings could help address challenges and refine the activity further; and 3) Integrate other forms of activities, such as game-based learning or project-based learning, to broaden the approaches used and foster the development of additional skills and experiences.



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