

The Study and Practice of the Concept of the "Twenty-four Solar Terms" in the Field of Art Education and Design from the Perspective of Ecological Aesthetics

Xu Jia^{1,a}, Wang Ziyang^{2,b}, Liu Peng^{1,c,*}

¹Institute of Humanities and Arts, Macau University of Science and Technology, Macau, China

²Institute of Fashion and Art Design, Xi'an Polytechnic University, Xi'an, China

^axujia_2021@163.com, ^bwangziyang1025@163.com, ^cpliu@must.edu.mo

*Corresponding author

Abstract: Ecological aesthetics is a new subject which is different from the traditional subject under the postmodern context. As the intangible cultural heritage of mankind, the "Twenty-four Solar Terms" not only contains rich scientific, philosophical and cultural connotations, but also has very rich ecological and cultural values. In order to better inherit and promote the "Twenty-four Solar Terms", scholars related to ecological aesthetics should actively explore an effective way that can carry and convey not only cultural information but also visual aesthetics, so as to meet people's dual experience of the information and visual perception of the "Twenty-four Solar Terms".

Keywords: Ecological Aesthetics; Twenty-four Solar Terms; Cultural Value

1. Introduction

The pursuit of harmonious coexistence between human and nature is the eternal goal of human beings. In different historical periods, because of the different relationship between men and nature, there are different outlooks on life and aesthetics. After the industrial revolution, with the development of science and technology, human gained a dominant position in his relationship with nature. However, there is also an "anthropocentrism" view of life, which is embodied in the habitation of science and technology. After the middle of the 20th century, especially since the new century, through the reflection on the rationality of "anthropocentrism", human beings have put forward the world outlook that considers nature as "ecological whole" and "symbiosis". Based on this background, ecological aesthetics came into being. Ecological aesthetics is a new subject in the postmodern context, which is different from the traditional discipline. It advocates the harmonious coexistence between men and nature, and "poetic habitation" is the goal of ecological aesthetics. However, there is always a controversial contradiction in the relationships between human and nature, development and environmental protection, current and future generations. On the one hand, there is a strong advocacy of environmental protection, on the other hand, driven by economic interests, ecological damage and environmental pollution are increasingly aggravated, which directly threaten human beings' health and safety^[1]. In the critical period, human beings turn to the ancient civilization for answers once again^[2]. The "Twenty-four Solar Terms" is the result of long-term observation, research and summary of astronomy, meteorology and phenology by ancient Chinese. It is regarded as Chinese wisdom in time. As the intangible cultural heritage of mankind, it not only contains rich scientific, philosophical and cultural connotations, but also has very rich ecological and cultural values, such as natural ecological aesthetic values related to astronomy and agricultural time, and humanistic ecological aesthetic values related to health preservation and folk culture. Therefore, in order to better inherit and promote the ecological and cultural value of the "Twenty-four Solar Terms", scholars related to ecological aesthetics should actively explore an effective way that can not only carry and convey cultural information but also possess visual aesthetics, so as to meet people's dual experience of cultural information and visual perception of "Twenty-four Solar Terms".

2. The Ecological Aesthetic Value of the “Twenty-four Solar Terms”

The traditional calendar system of the "Twenty-four Solar Terms" is the laws of nature created by the ancient Chinese through years^[2]. It is the ecological wisdom of the Chinese ancestors on the adaptability to the environment. It tells not only about meteorological changes, but also about the relationship between men and nature. The "Twenty-four Solar Terms" was born together with Chinese agricultural civilization. Farmers often follow "farming depends on the solar terms", which fully explains the time regulation of agricultural production activities by the solar terms. Because the "Twenty-four Solar Terms" expresses the core idea that agricultural production needs to respect for the objective laws and conform to laws of nature, it still plays an important role in the sustainable development of modern agriculture^[3].

After long-term development, the wisdom of the "Twenty-four Solar Terms" has long been engraved in Chinese people's life, permeated into all aspects of food, clothing, housing and travel. According to the rules of solar terms, people adjust to the lifestyle and life choices. For example, the proverb "have radish in winter and ginger in summer" refers to the specific diet customs during the winter solstice and summer solstice. Another example is in the aspect of dressing, folk spread "an autumn rain brings a cold, ten autumn rain brings cotton" proverb, which means that with the advent of autumn rain, the weather turns cool after the start of autumn, people should be aware of keeping warm. As the "Twenty-four Solar Terms" represents the life style of "unity of nature and man", and contain the traditional cultural wisdom of "respecting natural time and life rhythm", it has guiding values to the daily life of contemporary people^[3].

According to the theory of traditional Chinese medicine, the changes of human body and the occurrence of diseases are closely related to the "Twenty-four Solar Terms"^[4]. Throughout the history of mankind, all things in nature are closely related to changes in the solar terms. As a living creature in nature, people's internal body organs (heart, spleen, liver, lungs and kidneys), limbs and nine orifices, muscles and bones are all affected by the changes of the "Twenty-four Solar Terms". The classic work "Inner Canon of Huang Di" mentions that "Yin and Yang in the fourth period are the root of all things". According to it, Yang is nourished in spring and summer, and Yin is nourished in autumn and winter, which is the root of all things. "Inner Canon of Huang Di" summarized and put forward the key points of protecting liver and lung, nourishing spleen and stomach and so on by following the changes of "Twenty-four Solar Terms". It reminded people to arrange the diet and living reasonably, to follow the recipe of medicated diet, as well as nourishing the rest. Because the "Twenty-four Solar Terms" regimen is the wisdom of the ancestors, it has a high value of health education.

The "Twenty-four Solar Terms" has derived many cultural forms which is full of local features and national characteristics. The folk activities related to the "Twenty-four Solar Terms" involve many aspects, such as custom belief, ceremony, etiquette, entertainment and so on, vividly reflecting the internal connection between the solar terms and spiritual life^[3]. For example, in the She minority village of Feng Huang Mountain, She people are used to seeding selection on the "winter solstice" day, believing that seed selection on this day can strengthen rice seedlings and harvest crops. In addition, "Start of Winter", another solar term in winter, is the "Round Winter Festival" of the She people. She people kill chickens and slaughter sheep, and cook them with nourishing herbs to nourish the whole family, which is commonly known as "Nourishing the winter". It can be seen that these folk activities and folk culture greatly enhance the value of the "Twenty-four Solar Terms".

To sum up, the "Twenty-four Solar Terms" is a treasure of Chinese history and culture, which contains the powerful wisdom of ancient Chinese people and has its important cultural value and reference significance.

3. The Necessity of the “Twenty-four Solar Terms” Introduced to Art Class

3.1. "Twenty-four Solar Terms" Ecological Aesthetics -- the Best Media to Bring Students Closer to Nature

The art teaching is to develop students' awareness, to cultivate emotion and to create consciousness. However, it is very difficult to foster the inspiration of beauty in the classroom. Therefore, teachers not only let the students draw the beauty of nature in the art classroom, but also appropriately increase the extracurricular practice. And teachers should encourage the students to go out of the classroom, feeling the unique charm of natural beauty in the "Twenty-four Solar Terms", and understanding the beauty of

life. Then students can explore the source of artistic creation in the practice of nature constantly, and look for creative inspiration, so as to transform the external knowledge into the shaping of young people's inner lives. With this they had a desire for beauty, reverence for nature, the pursuit of harmony between man and nature with an ecological aesthetic. Therefore, ecological aesthetics education based on the "Twenty-four Solar Terms" has an important and positive influence on the physical and mental development of adolescents, the shaping of healthy personality and the formation of correct ecological values [5].

3.2. "Twenty-four Solar Terms" Health Regimen -- Helping Students to Improve Their Health

With the gradual improvement of material quality of life, the rise of the Internet era, the continuous improvement of traffic conditions and the change of diet structure and other reasons, the physical health problems of adolescents are gradually declining. As the saying goes, "if the young are strong, the country is strong". As the backbone of the country and the main force of social development, the young people must have a strong body and health knowledge to prevent diseases. Therefore, when teachers set goals at all levels, in addition to the preset goals, they should also set up health education goals and carry out related popular science activities. For example, before and after awakening of insects, temperature and rain gradually rise, the breeding of microorganism starts, and some of the viruses are alive. Through this time, teachers should have science popularization through picture books or the "twenty-four solar terms" culture museum to guide the students attention to personal physical fitness, to strengthen physical health, prevent the happening of the epidemic diseases such as influenza.

3.3. Cultural Connotation of "Twenty-four Solar Terms" -- Enhancing Students' National Pride

The purpose of art education is not only to teach students simple painting skills, but also to strengthen their humanistic feelings in art education, to cultivate students' cognition and love of traditional culture, and to enhance national sense of belonging and pride, so as to realize the emotional and cultural connotation contained in art education. For example, poets of generations described many formal beauty of the scenery in the poem about the twenty-four solar terms. For example, in the poem "On the Beginning of Spring Day, travelling with Noble Qian", with "Early yellow willow and Light newish green wave", Bai Juyi from Tang dynasty outlined a beautiful scenery of the Beginning of Spring Day, describing the new buds of light colored willow trees and the river water's green rippling wave. It not only reflects the poet's meticulous observation of nature, but also demonstrates how ancient people value the Beginning of Spring Day. Therefore, teachers should incorporate into the teaching classroom teaching with natural changes, folk activities and traditional poetry of the "Twenty-four Solar Terms". Through the combination of poetry and painting, we could stimulate students' interest in learning and improve students' humanistic quality.

In short, due to the special role of cultural inheritance in art classroom, in an aspect of art teaching, the "Twenty-four Solar Terms" is not only traditional culture education, but also life education and green education in art teaching activities in primary and secondary schools. It can greatly enrich the education contents of art classroom, make the art teaching and education activities in primary and secondary schools better implement the new curriculum reform standards, and achieve the teaching goal of "people-oriented" three-dimensional curriculum standards of emotion, attitude and values. In an aspect of cultivating students' art quality, students can understand the rich changes of the "Twenty-four Solar Terms" and nature from the process of art teaching, so as to deepen students' learning of art knowledge, which is of great educational significance to promote students' personalized education and cultivate students' cultural literacy. "Art Curriculum Standards" emphasized that "art teaching activities should not be limited to the learning of students' skills, it also should be applied to the promotion of students' cultural spirit". At present, most teachers do not have a clear and complete understanding of the educational value of "Twenty-four Solar Terms", which makes the educational value "of the "Twenty-four Solar Terms" hard to be well explored. Therefore, art teachers in primary and secondary schools should actively explore the excellent "Twenty-four Solar Terms" traditional culture and meanwhile incorporate it into the classroom teaching, and combine the art teaching with the "Twenty-four Solar Terms", let the students in learning knowledge of arts of relative knowledge of the "Twenty-four Solar Terms" ,meanwhile, arouse the students' consciousness of the protection and inheritance of traditional culture.

4. Carry out Research on “Twenty-four Solar Terms” in the Field of Art Design

The "Twenty-four Solar Terms" is the invention of Chinese people, so it has not been widely introduced to other countries yet. However, nowadays traditional culture has been received more and more attention in China, and a large number of experts and scholars have made great efforts on the inheritance and promotion of Chinese culture from various aspects. In the research field of art creation related to the "Twenty-four Solar Terms", it can be seen from the research results of previous scholars that they have conducted extensive research on the culture of the "Twenty-four Solar Terms" from various perspectives and levels.

In recent years, in order to let people feel natural beauty and culture of the twenty-four solar terms , Chinese scholars created design works about the "Twenty-four Solar Terms" culture heritage and development through visual communication design^[6-7]. One design is about natural scene, such as illustration or three-dimensional illustrations are used to draw climate scenery of the different solar terms. The expression form of the "Twenty-four Solar Terms" is combined with books through stereoscopic illustrations, and the profound cultural connotations of the "Twenty-four Solar Terms" are integrated into stereoscopic books through the visual sense of illustrations, so as to improve the visual sense of books at a certain level and motivate people's reading desire. In the font design, the concept of the design is to take the font design as a carrier, integrate the natural scenery features contained in each solar term into the font design by disassembling and recombining the font, so that the combination of text and pattern is more harmonious. The other design is about traditional folk, including folk food, farming activities, health customs and so on. Most of the posters and illustrations of traditional folk customs take the seasonal food in traditional folk customs as visual elements to show the folk characteristics of different solar terms. For example, the designers like Xu Qing, by following the principles of region and inheritance, based on the phenological characteristics, refined visual elements from An Hui farming farmer's saying, customs and habits, diet characteristics, folk custom activity, the humanities landscape. Popular science graphic books were designed by combination of An Hui regional culture with the "Twenty-four Solar Terms" so as to reflect the artistic conception beauty, it shows culture beauty, and develop the relevant tourism product. Thus, it promoted the spread and expansion of the whole An Hui culture, and made people pay attention to the regional culture at present^[8].

In household design, Qiao Tongqing thought that the "Twenty-four Solar Terms" series of household decoration products showed style of contract and fresh, which can give consumers more soul sustenance. Therefore, they suggested to take the cultural characteristics and connotation of the "Twenty-four Solar Terms" as the starting point, extracting the elements of form and meaning, and designing a series of home decoration products of the "Twenty-four Solar Terms" from various aspects can inherit and innovate the traditional Chinese culture and intangible cultural heritage^[9]. Tian Danning put forward that the cultural cognition and philosophical implication of the seasonal culture of the "Twenty-four Solar Terms" are visualized and transformed in the process of the home design. For example, using technique of surface and depth visual element extracted, the time, phenology, climate and folk customs in the seasonal culture of the "Twenty-four Solar Terms" are materialized and converted them into product design elements, and it is applied in the appearance design and function design of smart home products^[10].

In aspect of rehabilitation landscape design, Jia Junlan et al. believed that using the knowledge of the "Twenty-four Solar Terms" to design and transforming it into an important spatial activity node content of rehabilitation landscape can make children, the elderly and special groups with various diseases feel appropriate experience in the rehabilitation landscape of the "Twenty-four Solar Terms". The "Twenty-four Solar Terms", as a cultural symbol and spiritual symbol of the rehabilitation landscape can be more easily accepted and inherited by the public, and showed lasting vitality^[11].

Today is an era of rapid development of digital media art, as an important intangible cultural heritage in China, under the pace of the development of The Times, the trend of science and technology, Chinese scholars used new media to produce dynamic illustration, video, cultural and creative products, and make the use of network media platform to make images, sound effects, texts and physical objects can be instantly interacted and communicated with the audience to spread without limit and penetrate into people's life, thus endowed the value of the "Twenty-four Solar Terms" in the new era^[12]. For example, Chen Zhu used digital media technology to convert the culture of the "Twenty-four Solar Terms" into the form of interactive scenes, so that solar terms culture became a part of the living environment in the form of digital products, and used digital interactive media to decorate the indoor environment and create a perceptible space of cultural beauty of solar terms^[13].

5. Carry out Three-dimensional Illustration Design Practice Based on the "Twenty-four Solar Terms"

This design research is carried forward under the background of Chinese traditional culture, based on the modern design idea, in view of the related life elements of xiao ming's family from Northeastern area in spring, summer, autumn and winter, through the technique of the illustration design, modern three-dimensional jigsaw puzzle creation, and the the sound, light and technology, the "Twenty-four Solar Terms" was illustrated from the text of ethereal to vivid materialized on creation. Based on the proverb "pick radishes in winter solstice, pick cabbages in light snow", when the light snow period comes, the temperature gradually drops, and flies start to hide from the cold. With storing vegetables in the cellar and making pickles or cured meats, they don't need to worry about vegetables going bad. We will design the related elements. The environment included white snow on the house, mother placing cabbage in the pickled VAT to make pickles, father storing vegetables in the cellar, xiao ming and his sister wearing thick clothes and warm ear bags and helping mom and dad transport food. (Figure 1-2 shows xiao ming family in Northeast China, and their life during the coming of light snow term). In my extracurricular practice of maker education, this series of works not only improve the students' practical ability, recognition ability of the daily life element pattern, but also make the "Twenty-four Solar Terms" cultural information more effective and interesting, which can arouse the students interest and emotional resonance, and evoke their consciousness of cultural protection and inheritance, and make it more realistic significance and social value.



Figure 1: Light snow (flat pattern of living elements).



Figure 2: Light snow (three-dimensional illustration design works)

6. Conclusions

In short, "Twenty-four Solar Terms" is an important resource for the excellent traditional culture and education of the Chinese nation, and it's also an important source of cultural creativity. Therefore, art design creators not only benefit from the "Twenty-four Solar Terms", but also should take the responsibility of its inheritance, and make the effort of the innovation and development of the "Twenty-four Solar Terms" and integrate the "Twenty-four Solar Terms" element into the creative design of the living things constantly, make cultural and creative product of the "Twenty-four Solar Terms" present a thriving product development prospects. It is of great significance to promote the creative transformation and innovative development of the "Twenty-four Solar Terms" and make Chinese traditional culture change into a new vitality.

References

- [1] Zeng, F.R. (2017) *Chinese Ecological Aesthetics in Chinese- Western Dialogue. Journal of Southwest Minzu University (Humanities and Social Science)*, 2, 185-191.
- [2] Xu, W. S. (2017) *The Origin and Significance of Twenty-four Solar Terms in China. The Central Plains Culture Research*, 4, 95-101.
- [3] Sui, B., Zhang, J.J.(2020) *The Twenty-four Solar Terms: Connotation, Value, Transmission and Development. Agricultural History of China*, 6, 111-117.
- [4] Jiang, Q. S., Han, Y. J., Luo, J., and Luo J.G. (2019) *Twenty-four Solar Terms and Chinese Medicine. China Journal of Traditional Chinese Medicine and Pharmacy*, 4, 1653-1656.
- [5] Zhang, Z.T. (2021) *Art Education in Primary and Secondary Schools from the Perspective of Ecological Aesthetic Education. Art View*, 10, 103-104.
- [6] Ding, W.L. (2019) *Experience-based Cultural Creative Design of the 24 Solar Terms. Art and Literature for the Masses*, 21, 149-150.
- [7] Shen, D.N., Liang, X.Y. (2022) *Visual Representation of the 24 Solar Terms in Graphic Design. Art Education Research*, 3, 50-52.
- [8] Xu, Q., Li, H.Z.(2022) *Visual Design of 24 Solar Terms from the Perspective of Anhui Regional Culture. Journal of Liaoning University of Technology (Social Science Edition)*, 1, 77-79.
- [9] Qiao, T.Q., Zhang, Q., Xiong, L.M.(2021) *Innovation and Promotion of 24 Solar Terms Series Home Decoration Products. Qing Fang Gong Ye Yu Ji Shu*, 1, 121-122.
- [10] Tian, D.N. (2021) *The Application of "24 solar terms" Seasonal Culture in the Design of Smart Home Products. Jiang Xi: Jing De Zhen Ceramic University (Master's paper)*, 9 -10.
- [11] Jia, J.L., Wang, Y., Zheng, L. (2021) *On the Translation and Expression of "24 Solar Terms" Ecological Wisdom in Rehabilitation Landscape Design. Architecture & Culture*, 4, 133-135.
- [12] Yang, J.R. (2021) *Research on the Digital art Communication Mode of the 24 Solar Terms-- Take Dynamic Illustration as an Example. Art and Literature for the Masses*, 5, 131-132.
- [13] Chen, Z. (2021) *Research on Interactive Scene Design of 24 Solar Terms Based on Style Transfer Algorithm. Hei Long Jiang, Harbin Technology University (Master's paper)*, 3.