

# Analysis of Lin Fengmian's Aesthetic Education Thought Style Based on Association Rules Mining

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## Abstract

Association rule algorithm is a technology to discover useful knowledge from a large amount of data. This paper mines Lin Fengmian's aesthetic style analysis based on association rules. First, it introduces the causes of Lin Fengmian's aesthetic thoughts, and understands how Mr. Lin Fengmian improved traditional Chinese painting. Then, based on the association rule algorithm, he analyzes Lin Fengmian's aesthetic education ideology. By extracting the high-level semantic style features of Lin Fengmian's artistic images, comparing and analyzing the reconstructed images of each layer, the specific expression methods of content expression and style expression are determined. The use of association rules can not only conduct in-depth excavation of Lin Fengmian's works, but also excavate and analyze the style of aesthetic education. Finally, we can excavate and analyze the key factors that affect the formation of Lin Fengmian's aesthetic education style. Research significance and application value.

**Keywords:** *Association rules; Lin Fengmian, Aesthetic Education Thought Style*

## 1. Introduction

Since the 20th century, compared with Europe, which has already experienced capitalism, modern China has been devastated by aggression and civil war. Facing the double pressures of politics and economy, ideology and culture have been given a very important position [1]. Chinese painters should not only deal with the problems of skills and performance in their artistic creation, but also consider the historical mission and spiritual demands undertaken by art under the influence of drastic social changes and numerous ideological trends, and explore the direction and road of modern Chinese art [2]. Mr. Lin Fengmian (1900-1991), as an educator of Chinese contemporary art, the founder of China Academy of Art, and one of the spiritual leaders of Chinese art circles in the 20th century, occupies an important position in the history of Chinese contemporary art [3]. On the one hand, this position comes from his excellent works, on the other hand, it comes from his construction of the theoretical system of Chinese aesthetic thoughts [4]. Lin Fengmian is not only the pioneer of modern Chinese painting, but also an art educator with innovative ideas, and a visionary art theorist [5]. In old China, surrounded by dark forces, he made outstanding contributions to the Chinese art cause with the spirit of democratic criticism and the ideal

of reconstructing the emerging oriental art [7]. Influenced by the industrial revolution in the 20th century, painters at that time started some new explorations following the changes of the times, and their understanding of western art and modernization showed an increasingly diversified appearance, and the overall picture expression became increasingly extreme and abstract, of which Lin Fengmian was one [8]. Lin Fengmian's theory claims that his aesthetic thought with strong democratic color is his guiding ideology and soul for painting creation, implementing art education and advocating modern Chinese art movement [9].

## 2. Causes of Lin Fengmian's Aesthetic Thought

### 2.1. Painting enlightenment stage

Lin Fengmian was born in Meixian County, Guangdong Province in November, 1900. His grandfather Lin Weiren was a stonemason, and his father Lin Boen was good at calligraphy. It is a Miao girl bought by her mother and grandfather from Miao Village, whose name is Que Adai, and she is beautifully embroidered with Miao Xiu, which makes him deeply influenced by folk art since childhood, and undoubtedly creates a good

environmental foundation for future artistic development [8]. When he was a child, he worked as an assistant to his grandfather and began to learn calligraphy and Chinese painting. His initial approach was to copy mustard seed garden under the guidance of his father Lin Yunong [6]. When Lin Fengmian was six years old, his family changed. His mother was taken away by traffickers, and he never met again. Lin Fengmian suffered from a serious illness. After recovering from his illness, he often ran to the hills behind his home to observe the mottled water and mountains, and the shade and brightness of the peaks. Over time, his sense of color was greatly inspired [10]. At the age of 9, a picture of a pine crane painted by him was bought by a rich local family, and it got its name from then on. These childhood works are now invisible. However, Lin Fengmian was influenced by another kind of painting when he was young, that is, the pictures printed with western paintings [11]. After that, Lin Fengmian created his own school of autumn scenery, which probably came from the color feeling of natural scenery in his childhood; There is also a unique color ink painting theme of ladies, all of which are permeated with the memory of mother. When he was in Meixian Middle School, he was trained by Liang Bocong, an art teacher.

Teacher Lin can paint landscapes, flowers and birds, poetry and books, and belongs to a traditional local painter. Some researchers said that at that time, he also copied the prints of Gao Jianfu and Gao Qifeng's brothers' paintings. Generally speaking, Lin Fengmian's art enlightenment education is mainly traditional. Without a famous teacher, it is not a strict "class". When he was in high school, his father began to borrow Nanyang books from overseas Chinese who came back to visit relatives in Nanyang, and he often copied the illustrations of western paintings in the books. Lin Fengmian's earliest enlightenment of western paintings originated from this time. After the 19th century, different modernist art styles such as Fauvism, Cubism and Expressionism appeared in European painting. During his study abroad, Lin Fengmian frequently visited various salons and exhibitions, trying to absorb the nutrition of artistic creation from those extremely active modernist art. The diverse styles of modern art have broadened Lin Fengmian's horizons and benefited a lot. Lin Fengmian realized that although Eastern and Western art differed in representational schemas, representational methods, and artistic conceptions, they had similarities and certain commonalities in representing human emotions. From this, he gradually came up with the idea of reconciling Chinese and Western painting, trying to find his own way of innovation. According to the description and later performance, it can be roughly inferred that during this period, Lin Fengmian had only a preliminary understanding and grasp of Chinese traditional painting, and had not finalized the choice of artistic path. At this stage, however, the influence of

Chinese traditional art will become the spiritual foundation that will never change in his life.

## ***2.2. Lin Fengmian's Art Development Period***

After finishing a year of language study, Lin Fengmian began to study at Dijon Art School in France. Although the school is small, it has complete teaching facilities and excellent teaching environment, ranking first among the six national art schools in France. The principal is the famous sculptor Yancey. At the age of 18, young Lin Fengmian went to France to work and study, mainly studying oil painting. He studied in Europe for six years, and his middle school French and sketch took nearly one year. He studied in France's Dijon Academy of Fine Arts and Paris's Colemont Studio for more than two years, then studied in Germany for one year, and then settled in France for two years. Yang Xisi is not only a headmaster, but also a sculptor, who is good at relief and has a deep knowledge of Chinese traditional culture. Lin Fengmian studied sketch and western painting with Yang Sisi at Dijon Academy of Fine Arts. The teacher praised this student and recommended him to continue his studies in Paris. In the first three years, I was mainly educated by school, while in the last three years, I was free to study and create. In the past three years, Lin Fengmian has been greatly influenced by two people in two schools, one is Yancey, president of the French Academy of Fine Arts in Dijon, and the other is Professor Colomont of the Paris Academy of Fine Arts. Lin Fengmian's progress in the studio of Colomont is slow, and his former teacher, Yang Sisi, is quite dissatisfied with this. He thinks that Chinese traditional culture is excellent and precious. Lin Fengmian is a Chinese, and only the culture of the motherland is the most suitable for him to study hard. I hope Lin Fengmian can go to museums in Paris to find inspiration, especially those related to Chinese traditional culture.

Lin Fengmian's study abroad in France and Germany opened his eyes and fully appreciated the splendor of European traditional art and world art, which had a great influence on his painting style. During this period, his paintings were greatly influenced by Kant's aesthetic thoughts, Schopenhauer's philosophical thoughts and Bauhaus's design ideas. Kant's aesthetic thought advocates that "beauty has no purpose but meets the purpose." After Impressionism in Europe, the late German expressionism, Fauvism represented by Matisse, Cubism represented by Picasso, Abstraction, Post-Impressionism and so on gradually emerged, and Matisse, Monet and Van Gogh, Gauguin, Gauguin, Cézanne and other painters were the leading singers of the art stage at that time. Through extensive study and independent thinking, Lin Fengmian made a choice between oriental art and western art, classical art and modern art, established his own artistic orientation, and drew many works with emotional agitation, which

formed the first creative climax in his life. Lin Fengmian's situation in the 20th century can be said to be the choice of the times in the historical context. Under the social environment at that time, although Lin Fengmian's unique artistic expression method also expressed his understanding of art, it could not directly serve the social revolution like realism. Therefore, for a long time, his artistic creation has been regarded as "art for art's sake", a formalist art in an ivory tower. His artistic creation has also changed from depicting heavy reality to depicting peaceful and tranquil nature and attaching importance to self-feeling. By borrowing from Western modernist art, he conducts artistic explorations that integrate Chinese and Western art, and pursues pure painting aesthetic taste and artistic expression.

### 3. Analysis of Lin Fengmian's Aesthetic Education Thought Style Based on Association Rules Mining

#### 3.1. Association rule mining

With the continuous development of databank technique and the wide application of databank management system, the amount of numbers stored in the databank has increased dramatically. The artistic style analysis system based on association rules has the advantages of discovering new interests of audiences and not needing domain knowledge. The discovery of association rules is the core and key of artistic style analysis system, and the recommendation effect depends on the quality and quantity of rules. Association rules are an important method and technique in numbers mining, and frequent I/O operations will definitely affect the mining efficiency of association rules. The main ways to reduce I/O operations are: reducing the number of scanning numbers sets; Reduce the number of candidate project sets for which support needs to be calculated, and make the number of candidate project sets close to the number of frequent project sets. The basic mould of association rule mining is shown in Figure 1.

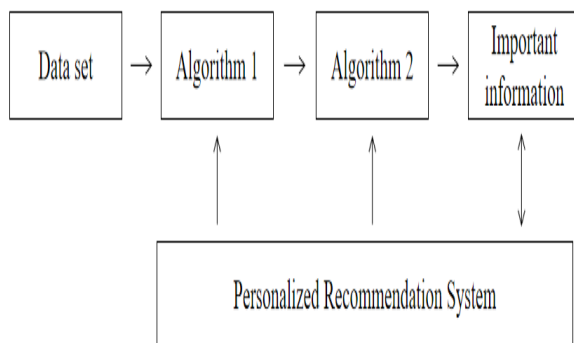


Figure 1 Basic mould of association rule mining

There is a lot of important message hidden behind a large amount of numbers, and these important message can support people's decision-making. At present, all the databank system can do is access the existing numbers in the databank, and the amount of message people get through these numbers is only a part of the message contained in the whole databank. The more important message hidden behind these numbers is the description of the overall characteristics of these numbers and the prediction of its development trend, which has important reference value in the process of decision making. The disadvantage of artistic style analysis based on association rules is that with the increase of the number of rules, the system will become more and more difficult to manage. In fact, numbers is only the raw material that people get by observing the objective world, and it doesn't have much meaning in itself. It just describes what happened and can't constitute a reliable basis for decision-making. By analyzing the numbers, we can find out the relationship among them, and give the numbers some meaning and relevance, that is, form the so-called message. The classification of association rules mining is shown in Figure 2.

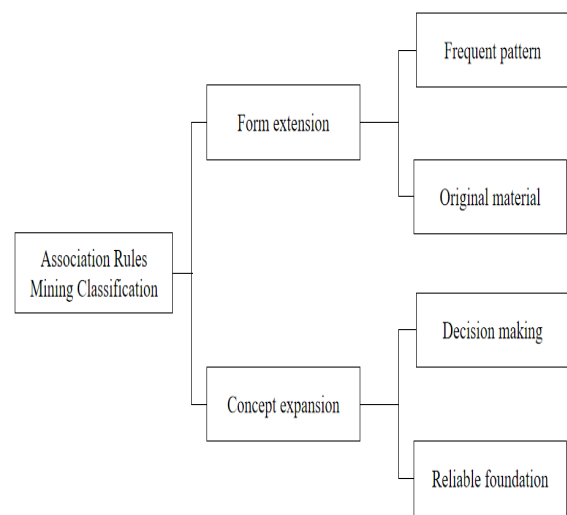


Figure 2 Classification of Association Rules Mining

In view of the problem that too many rules affect the mining efficiency, some scholars have reduced the number of association rules to some extent by increasing constraints or only considering a subset of rules, but these studies are not aimed at artistic style analysis. The reduction of the number of candidate itemsets can save the computing time and storage space needed to deal with some candidate itemsets, but with the development of network and economy, there are more and more distributed systems. In numbers mining, there are increasing problems in negotiation and competition among nodes, message utilization and network communication efficiency of distributed association rules. The excessive number of association rules and redundant rules are the bottlenecks that affect the mining efficiency

of association rules and their application effect in artistic style analysis.

The artistic style featuresbank  $T$  is transformed into a 0-1 matrix  $D_{m \times n}$ , where each row represents a transaction and each column represents a product item. If the product  $j$  is included in the  $i$ th transaction, the value of the corresponding position of the matrix is  $d_{ij} = 1$ , otherwise it is  $d_{ij} = 0$ .

Sum the elements in the same column of the matrix, calculate the support degree of product items, and get frequent item set  $L_1$ , and let  $P$  represent the number of frequent items included in it. The calculation formula of support degree is as follows:

$$D \sup(I_j) = (\sum_{i=1}^m d_{ij}) / m \quad (1)$$

Delete the infrequent columns with support less than  $a$  in matrix  $D$ , sum the rows of the matrix, delete the rows with value less than 2, and still use the number of rows in matrix  $D$ .

Calculate the support degree of binomial product set to obtain the support degree matrix  $S = (s_{ij})_{p \times p}$ :

$$S = D^T \cdot D \quad (2)$$

According to the matrix  $S$ , a frequent binomial matrix  $F = (f_{ij})_{p \times p}$  is established:

$$f_{ij} = f_{ji} = \begin{cases} 1, & s_{ij} \geq m \times a \\ 0, & s_{ij} < m \times a \end{cases} \quad (3)$$

The existing research is not aimed at the demand characteristics of artistic style analysis system, and it is not suitable for artistic style analysis. After more than ten years of development, the theoretical and technical achievements based on statistics and artificial intelligence have been successfully applied to business processing and analysis. To some extent, these applications have greatly promoted the proposal and development of numbers mining technique.

### 3.2. Lin Fengmian's educational thought of "inclusiveness and integration of Chinese and western"

Lin Fengmian, in the Outline of Art Education of Art College, clearly stated that the academic goal of the school is "to introduce western art! Organize Chinese art! Harmonize Chinese and Western art! Create the art of the times!" On the basis of investigating the history of

western art and deeply studying Chinese traditional culture, he pointed out that "the difference between Chinese and western art lies in the fact that western art is centered on imitating nature, and the result tends to be realistic. Painters' creation should be closely related to the future and destiny of the country, and their works should conform to popular aesthetics, which is their most basic starting point. However, Lin Fengmian distinguishes the art of appreciation from the art of propaganda. Unlike Xu Beihong and other painters, he closely links creation with national salvation and art with propaganda. In this big environment, Lin Fengmian continued his early fusion experiment, capturing the beauty of nature with paintings, and continuing to explore artistic beauty and dreams. Oriental art, which focuses on describing imagination, tends to be freehand. The composition of art is caused by the emotional impulse of human beings, and it needs a certain form to express it. The former form of seeking expression is outside itself, the latter form of seeking expression is inside itself, and the form of external expression due to different methods tends to be different; Each has its own strengths and weaknesses due to its suitability. This is the reason why eastern and western art should communicate and harmonize. In fact, the weaknesses of western art are the strengths of eastern art, and the weaknesses of eastern art are the strengths of western art. Short-term supplement, the emergence of new art in the world, is at present."

In 1927, Chinese art circles began to face two opposite development paths: one was to learn from the West, westernize completely, and basically abandon Chinese traditional culture; The other is that we must inherit the tradition and continue the spirit of traditional Chinese painting. Lin Fengmian put forward the idea of "introducing western art, sorting out Chinese art, harmonizing Chinese and western art, and creating contemporary art" after serving as the National Art College. In the middle of these two roads, he opened up a unique space and determined to revive Chinese national art. If we want to adapt the decadent traditional Chinese painting to the needs of social consciousness and find a new way, the researchers of traditional Chinese painting should not ignore the contribution of western painting. At the same time, if we want to break away from the western style and represent the new art of national spirit, the researchers of western painting should not ignore the achievements of traditional Chinese painting for thousands of years. "Most Chinese artists feel that there is an insurmountable gap between Chinese and Western cultures, and there is no internal connection. Art education institutions in most areas also agree with this view, so in other schools, other teachers of the two painting departments almost always look down on each other due to lack of communication. Lin Fengmian's whole life has also been focused on the exploration and practice of integrating Chinese and western art, and

created a unique art form-"Wind Sleeping Body", which integrated eastern and western art.

#### 4. Conclusions

With the development of Chinese art in the 20th century, it is no longer possible to evolve according to the original artistic logic. The most important thing for artists in this century is to have a clear understanding of the differences between eastern and western cultures, and to solve these differences and open up a new road. Judging from the four historical periods of Lin Fengmian's life, Lin Fengmian was deeply influenced by Chinese traditional painting in his childhood, thus affecting his life. Lin Fengmian, who was studying abroad, extensively studied and absorbed outstanding western artistic achievements, and at the same time formed his own artistic style of combining Chinese and Western. Lin Fengmian's "upward" aesthetic thought, that is, the aesthetic thought of constantly pursuing the perfect ideal of mankind, should be realized by constantly transforming the society. He believes that "art is a sharp weapon to transform society". However, the first weapon of art is his beauty, and the second weapon is his strength. Art should give full play to its special functions in an artistic way, and act on the society, instead of violating the laws of art itself. Since Lin Fengmian, the painter has broken through the traditional "pictograph of objects" and "pen and ink first" in the treatment of picture moulding, emphasizing the dynamic changes of objects, expressing the painter's own subjective feelings, and gradually stepping out of the concrete into the abstract and into the pure art.

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