On the Importance of Image Reading to Public Aesthetics

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Abstract: With the continuous development of the times, people pay more and more attention to image reading. Therefore, this paper discusses the importance of image reading to public aesthetics. This paper first briefly introduces the concept of image recognition, then briefly expounds some important meanings and several common, representative and relatively high degree of understanding and acceptance by the public are commonly used to recognize images, and then uses the method of questionnaire to investigate students' views on image reading and public aesthetics. Finally, the survey shows that, Image reading can help students better understand the trend of public aesthetics and make use of the function of image reading to better analyze aesthetic points.

Keywords: Image Reading; Public Aesthetics; Image Aesthetics; Image Reading

1. Introduction

As a new digital recognition technology, image recognition is based on the computer, through the analysis of information, identify and extract meaningful graphics or text symbols with the tested object. With the rapid development of network era and information technology, people also put forward higher requirements for image recognition system [1-2].

Many scholars at home and abroad have done relevant research on the technology of image recognition. Foreign countries have a relatively complete and systematic theoretical system for image reading and recognition. They explain what is image preprocessing, feature extraction and classification from different perspectives. However, these theoretical knowledge are relatively abstract. Foreign scholars mainly verify whether the algorithm is correct, judge whether the character to be judged is empty or the text information is wrong, and determine the unknown true and false degree through experiments. However, China has not formed a complete system for image recognition, and there is also a lack of relevant personnel for research [3-4]. Since 2001, there have been some researches on digital signal processing and human-computer interaction technology in China. There are still some problems in this aspect in China: first, from the perspective of algorithm, second, from the perspective of class hours, and third, the algorithm accuracy is not high and not easy to master. Other scholars believe that there is no unified standard to judge the numbers, resulting in high error rate but low accuracy during operation [5-6]. The above research has not only promoted the research and development progress of image reading, but also further affected the public aesthetics.

With the continuous development of digital image technology, people have higher requirements for image reading level and quality. From the two aspects of image recognition and visual information perception, this paper analyzes the current domestic and foreign scholars' definitions of "edge detection", "color feature extraction" and related theoretical knowledge. Then, through a large number of literature, we understand and summarize the important parts of image preprocessing, such as how to perform frame contrast, color correction and the role of digital filtering technology in different fields. Finally, we discuss and evaluate the experimental results.

2. Discussion on the Impact of Image Reading to Public Aesthetics

2.1 Public Aesthetics

2.1.1 Concept

Public aesthetics refers to the process in which the broad masses of the society take themselves as the main body and their own personality as the core in their daily life, art appreciation and other activities, observe and perceive what they see or hear and express themselves. The concept of mass aesthetics, also known as the aesthetics of art, means that when people appreciate artistic works and use aesthetics, they will first have a basic understanding of what is shown or represents the universal recognition of modern human beings and is difficult to change its essential characteristics. People have different definitions for image recognition. In a broad sense, it refers to a series of information about one's own life state and ideas through various media in daily life. In a narrow sense, it refers to works used by people in daily work, learning and communication by using different carriers. The concept of Popular Aesthetics refers to the improvement of people's appreciation level, cognitive ability and life experience through various means. In daily life, we can often see that some people have two kinds of psychological right and wrong: they will be seen and they will not be seen. Popular aesthetics, also known as "socialized art", refers to the influence of ideological education and cultural activities on the audience. In the modern era of big data, people have a new level of understanding and acceptance of image reading. From passively and simply receiving information in the past to actively participating in it now, and from which we can obtain a stronger aesthetic development, from simply seeing things in the past to understanding the world through our own feelings now, rather than just staying on the surface to see things [7-8].

2.1.2 Features

The characteristics of popular aesthetics are determined by its sociality and life purpose. In daily life, people have different needs for image recognition and appreciation. With the development of modern science and technology, after the human visual system has been developed day by day, it is necessary to understand the connection and change laws between things and their mutual relations through various means. This phenomenon is precisely because the image reading causes people to continuously understand the concept of "beauty", so as to form new cognition, new cognition and other processes to produce aesthetic psychological activities, and finally achieve the purpose of emotional catharsis. In the aesthetic process, people analyze and compare the things they see and hear in life through image recognition, and then make judgments. The most obvious feature of popular aesthetics is that it is highly targeted. Because there are differences in cultural traditions in different regions. Therefore, we have different views on the same issue. Some people think that vision is the only concept that can recognize the characteristic information of a specific object and accurately explain its nature, while others think that image recognition refers to identifying words and numbers [9-10].

2.2 Image Reading

2.2.1 Concept

Image reading refers to the analysis and recognition of the characteristics of things. With the rapid development of modern science and technology, human society has entered a new era - the digital stage. The combination of computer technology with artificial intelligence, machine learning and other fields has produced a large number of rich, complex and changeable information resource databases with high accuracy and powerful functions, which have become an indispensable and important part of the world's scientific and technological competition. At the same time, people are also increasingly aware that "shape" characters and image reading have a great impact on aesthetics, but they may not completely replace words and language [11-12]. Literally speaking, recognition is reading. In modern science and technology, people have many methods to process images. Now what we are using is to build an integrated system based on computer, which can be connected with the real world, has the ability of automatic adaptation, self-learning, analysis and other functions. With the continuous development and progress of science and technology and the faster and faster pace of human social life, all kinds of complex things have also increased. At the same time, in the rapidly developed modern information age, people have not formed a unified standard for image reading. In our life, many people will use computers or mobile phones as viewers and players. These machines acquire data through the camera and transfer it to the computer processing system. What is needed in this process is the image preprocessing technology, such as image gray transformation (that is, after imaging the object to

be photographed, it is transformed into a point with the same or different color features as the original state, and the clarity is inconsistent).

2.2.2 Principle

According to the principle of image recognition, we can divide it into two categories: one is a recognition method based on mathematics, such as neural network and statistical vision, and the other is a new technology formed by the combination of non algorithm and theory. Artificial intelligence system consists of computer, expert system (AI) and other related equipment. Artificial intelligence studies all the perceptual modes applied to the human brain by working in a specific environment and making corresponding responses. It includes the human brain's sensory organ nervous system and non intelligent nervous system, which mainly includes image processing, visual nerve network structure, etc.

In real life, many people are troubled by the saturation and blurring of images, and this confusion is due to people's understanding of their own knowledge, experience and background. If there is no good way to solve this problem, it is easy to make people have an illusion. Gray level transformation is to distinguish the colors in the complex or simple black-and-white color system by different gray levels. Gray-scale transformation is the most important technology in the processing and conversion between spatial domain and frequency domain of image, also known as frequency based transformation. It is a relatively basic and direct spatial processing method in image enhancement technology. In the process of practical application, we often encounter problems of one kind or another. For example, edges, contours, etc. When there are some obvious changes in the image (such as noise), serious errors will occur or the image will be lost. In addition, the phenomenon of describing some details and overall perception in an image through gray-scale space expansion is called frequency based transformation. The target region of a gray-scale image is compressed between certain gray values without strong gray-scale transformation. The linear image grayscale transformation function f (x) is a one-dimensional function, as shown in Formula 1:

$$f(x) = fA * x + fB \tag{1}$$

The gray transformation equation of the image can be obtained from the transformation function, as shown in equation 2:

$$DB = f(D4) = fA * DB + fB \tag{2}$$

If the exposure is excessive or insufficient, the light and dark distribution of the image will not be scattered, so the overall gray level of the image will be scattered into a small area, the displayed image will become blurred, and the gray level of the image will become worse. At this time, it is almost zero. Using linear function to linearly expand the gray level of each pixel in the input image, or using algorithm PSF to carry out point expansion processing, can effectively improve the problems of low resolution and uneven gray distribution of the input image.

3. The Investigation Process of the Impact of Image Reading to Public Aesthetics

3.1 Investigation Purpose

In order to understand the situation of image reading, we used a questionnaire to understand the public's aesthetic ability through in-depth interviews with different groups, different occupations and different educational levels. With the development of society, people's living standards are improving, and aesthetic appreciation is becoming more and more diversified. Image recognition has become an important part of modern culture. This survey is mainly aimed at identifying several controversial contents or phenomena in vision.

3.2 Respondents

The object of this questionnaire survey is a school student. Through random sampling of a school, 300 valid questionnaires were distributed, and the recovery rate was 89.6%, of which 7 were invalid. At the same time, in order to

ensure that the sample size is not too large and not too small to make the problem more representative and scientific, there are other relevant factors that also affect the correctness and quality of the survey results, such as whether the students and teachers will be affected by some image reading information to a certain extent, and so on.

3.3 Investigation Process

In the process of this questionnaire survey, we mainly modify the content of the questionnaire to make it meet the basic requirements of public aesthetics, so as to achieve the real purpose of this study. The design of the questionnaire is mainly divided into two parts. One part is to investigate the content of image reading, and the other part is to understand the public aesthetic.

4. Investigation and Analysis of the Impact of Image Reading to Public Aesthetics

4.1 Students' Cognition of Image Recognition Content

Table 1: Students' cognitive survey of image recognition

	Document scanning	Modify photos	Edit the image
Freshman	58%	27%	15%
Sophomore	43%	35%	22%
Junior	63%	4%	33%
Senior	74%	25%	1%

Table 1 shows the cognition of middle school students on the aesthetic manifestation of image recognition in this survey
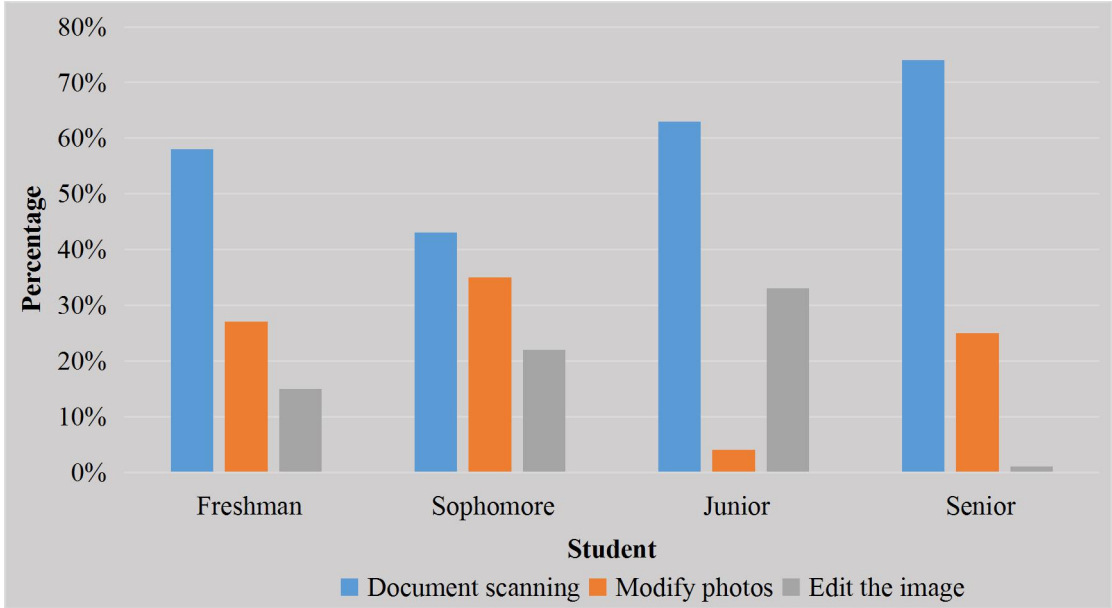

Figure 1: Students' understanding of image recognition

In this era, with the development of science and technology, image recognition has become more and more important. As a new technology, it has been widely used in education, science and technology and other fields. Research and understand people through computer image reading system. For example, some unreal pictures often appear in movies, and the photos are broken due to the large lens when taken with the mobile phone camera system, which will affect the aesthetic judgment process to a certain extent, resulting in wrong operation and even adverse consequences. It can be seen that image recognition is of great significance in public aesthetics. As can be seen from Figure 1, most students of the school think that the purpose of image recognition is to recognize documents, then edit images, and finally decorate photos. This shows that for college

students, image recognition is more helpful to document editing, followed by image editing.

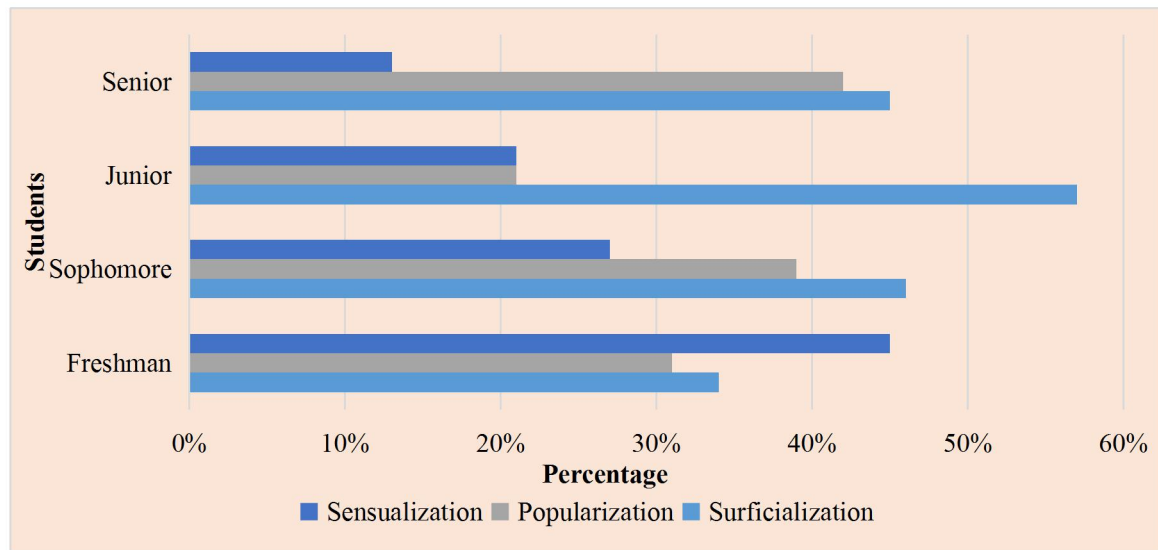## 4.2 Students' Cognition of Public Aesthetics

Figure 2: Students' cognition of the public aesthetics

It can be concluded from Figure 2 that aesthetic judgment is an ability formed through one's own intuition, perceptual experience and self perception. In this case, we can understand things by looking at pictures and listening to sound. However, vision cannot be expressed in words, nor can it be understood completely by relying on word description.

5. Conclusion

With the continuous development of science and technology, image reading has become an important and widely accepted technology in modern life. This paper mainly introduces what is image recognition and image recognition and how they are related, briefly analyzes and explains how to improve the public's requirements for aesthetics and how to identify the ability of visual information to judge aesthetic value and art appreciation, and finally expounds the relevant theories about visual influence from the aspects of psychology and chromatics. At the same time, it also puts forward some application of image reading in life to help people better understand the world.

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