

# Chapter 4

## Study on Role of Art in Information Age Based on Role Income Ratio

Ning Song and Jing Wang

**Abstract** Continuous updating of information technology enriches the artistic manifestations, making art more freedom and perfect in the new period of development. Meanwhile, with the continuous optimization of art means and improvement of artistic thought, rapid changes happened in various elements in the information age, thereby enriching the people's work and lifestyle, it can be said that art plays an irreplaceable role in the information age. For a more in-depth study on the role of art in the information age. In this paper, the significance of art in the development of the information age is concluded and expounded, the evaluation role model is also constructed, and on the basis of analysis of role evaluation model principle, a experimental research and quantitative analysis is made on the identity, satisfaction, and the role effect of artistic role, so as to explore the specific role.

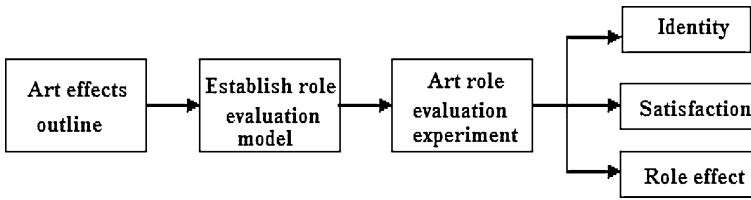
**Keywords** Information age · Role evaluation model · Dentity · Role effect · Income rate

### 4.1 Introduction

With the development of Internet, technology, and computer technology, the requirements of art form and the results are getting more demanding. In order to meet the higher demand for the Arts in the information age, we need better position of the role the arts played in the information age, making information technologies in promoting the art of continuous improvement and optimization, at the same time, art can also play a more important role in innovating and reforming of information technology [1].

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**Fig. 4.1** Art role research content diagram

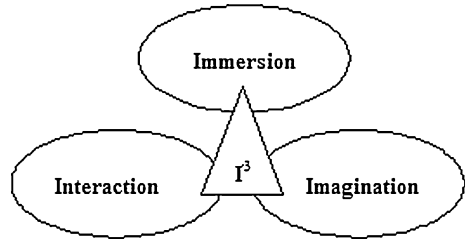
In many areas when using and sharing information in an era of high-tech, art's development are also seeking opportunities for fusion with information technology. The combination of art and information technology meets the diversity of esthetic demands, the role of art in the information age becomes increasingly important [2]. This article will generalize the role played by art in all areas in the information age, thus summarizing the role of art characteristics. Then, establish the role evaluation model, and use this model for quantitative analysis of role identity, satisfaction, and effect, so as to make an accurate positioning on the role of art [3]. The art role research content diagram in this article is shown in Fig. 4.1.

## 4.2 The Important Role of Art in the Information Age

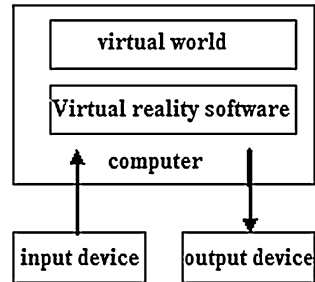
The development of information technology makes artistic creation more freedom, fewer and fewer constraints on art, art can be on a higher spiritual expression. At the same time, art also demonstrates strong technical, connectivity, and interactivity, which will have an important guidance and inspiration role to the rapid development of information technology. Therefore, in areas such as e-commerce, distance learning training, and advertising design. We should not only have the technical skills and functions related to the strong hardware support, but also need some relevant art production and innovation ability, and from the perspective of art, explore the unique growth in all areas, in order to achieve the perfect fusion of art and technology.

Art extends the using field and results of virtual reality technology in the information age, virtual reality technology including 3D imaging technology, multiple image processing technology, and software scene simulation technology. It is by means of computer technology and art simulate visual, auditory, and tactile integration in realistic environments, so that people can dominate the external environment and able to immerse inside. Thus, input devices and output devices realize dynamic interactivity between man and the virtual world, and will allow people to generate a stronger desire to artistic expression, in a self-designed environment to stimulate creative ideas [4]. In this process, the artistic expression can be achieved through Adobe Photoshop, Freehand, 3D max, and other professional software, a variety of artistic expression mode makes virtual environments more realistic. Simulated reality triangle diagram is shown in Fig. 4.2; simulated reality system diagram is shown in Fig. 4.3.

**Fig. 4.2** Simulated reality triangle diagram



**Fig. 4.3** Simulated reality systems diagram



The rapid development of e-commerce is with the up of IT, it combines the technology of the Internet, online payments, and the e-marketing. E-commerce makes it possible for net shopping, online trading, and online trade communication without going out. IT tools enable the e-commerce system operate sterilely, and the design of system can enhance the effectiveness of e-commerce activities on the visual system level, in order to attract user’s attention faster than ever, so as to achieve artistic effects. Art provides a stronger appeal for e-commerce platform, enables businesses to grasp the network publicity effect better, and take advantage of the diversity of artistic expression to improve the promotion of e-commerce activities [5].

The development of arts will help promote the progress of information society in the level of interaction. Network not only broaden the horizon, but also indirectly inhibit the interactive activities. The art has a strong performance desire, infusing it to the network world, you can change the single electronic and digital interactive way to form the ideological diversity interaction between people, and stimulate creative thinking. While taking advantage of video transmission technology and the use of the art tool for designing interactive teaching platform, so it can better promote the development of the information age technology.

### 4.3 Design Research and Method

Aiming at freshmen and junior students of a college English major to conduct a survey, and choosing two classes’ students are formation of two groups to analyze and to carry out the oral tests, it is mainly through the semi structure interview to

research. Interview time is defined as 5 min, content is the combination of students' learning process and experience to question, Such as “when did you begin learning English?”, “favorite degree of the English language”, “improving the mode and method of language learning”, and so on. Using the recording test for students test, through the data processing and statistics analysis, that is the recording through sound processing software to convert, and to save it as text, and then to carry out the data processing and analysis [6].

### 4.4 The Establishment of Art Role Evaluation Model

The role played by art in the information age can be through various investigations, but the investigation index often used the indirect, and with a large subjectivity, therefore we cannot position the role of art accurately. This article will establish art role evaluation model, giving the specific factors index to the role of art, thereby a quantitative analysis of the role played by art can be achieved. The art role evaluation model is shown in Fig. 4.4.

In art role evaluation model, role satisfaction, identity and roles effect are dependent variable, diversity, linking relationships and interactions are independent variables, the dependent variables are decided by independent variables, the dependent variables reflecting the role of art in the information age. The diversity is divided into surface diversity and deep diversity, surface diversity mainly for art role of external environmental factors, the deep diversity mainly for their own forms of expression and practical significance. Linking relationship mainly refers to the unified relationship between the role of art and the characteristics of the information age, IT makes art form and results a qualitative leap forward, while art has an important role in promoting development and optimization of IT, they are two mutually enhancing relationships. Linking relations are divided into linking

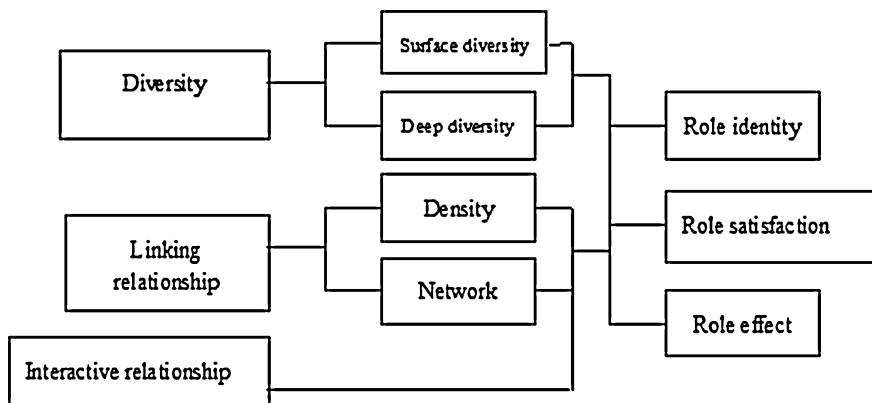


Fig. 4.4 The evaluation model of art role

density and network linking; the linking density is used for measuring the proportion of the art effect of its role, network linking system is used for the measuring art effect relationship for its role.

The main parameter of role identity, satisfaction, and effect is a role yields, that is, the relationship between the benefits of art role in the information age, used for reflecting the extent of art role, yielding  $R$ 's expression is shown in the formula (4.1) [7].

$$R = \frac{G}{T_s + T_w} \quad (4.1)$$

Among them,  $G$  is the total receipts of art role,  $T_s$  is the exploring time for art roles,  $T_w$  is the art role duration. When using the average formula yields conversion, you can use the average number for calibration yield, which can be more convenient to calculate yields, the transformed expression is shown in formula (4.2), when simplifying formula (4.2), (4.3) can be gained [8, 9].

$$R = \frac{\alpha t_s g}{t_s + \alpha t_s t_w} \quad (4.2)$$

$$R = \frac{\alpha g}{1 + \alpha t_w} \quad (4.3)$$

Among them,  $g$  is the revenue of each sample,  $t_s$  is the role of each sample, the exploring time of role for each sample,  $t_w$  is the exploring time for art roles,  $\alpha$  is the yield coefficient, it can be obtained by Table look-up.

Art's role in the information age is with the innovation and development of IT, it is not set in stone. At different times, the role of art will change, so you need to look at the role yields at the relevant time period, in this case the expression of role yields is shown in formula (4.4) [10].

$$R = \frac{\sum_{i=0}^m \alpha_i g_i}{1 + \sum_{i=0}^m \alpha_i t_w} \quad (4.4)$$

## 4.5 The Experimental Research of Art Role Evaluation

Use this article to establish the role evaluation model, making a quantitative assessment for art samples to determine the proportion of role played by art in the information age. In selecting art samples, selection can be carried out in stages, so that you can use formula (4.4) to calculate the average earnings for each time period to get role yields, the results are shown in Table 4.1.

**Table 4.1** The experimental results of art role evaluation

	Surface diversity correlation coefficient	Deep diversity correlation coefficient	Density correlation coefficient	Network correlation coefficient	Interactive relationship correlation coefficient
Role identity	0.253	0.572	0.213	0.31	0.892
Role satisfaction	0.638	0.29	0.294	0.427	0.925
Role effect	0.452	0.495	0.593	0.496	0.825

From Table 4.1, we can get that, the deep diversity has a greater impact on role identities, which means that role identification degree depends largely on expression and significance of art itself, but the density and network have less impact on the role identity.

Surface diversity has a greater impact on role satisfaction, that is to say, the role satisfaction depends primarily on the art role of external environmental factors, to improve the artistic creation environment will help to improve the role of satisfaction, while the strength of network will also have a greater impact on the role satisfaction degree.

Role effect is the result of both surface and deep diversity, both of them are indispensable. At the same time, the greater role density, the better role effect, so the art performance method and manifestation should be more diversified, which will have an important role in upgrading the role effect.

The function of interaction is consistent with the role identity, satisfaction, and effect. Interactions more closely to role identity, satisfaction, and effect can be better expressed. Therefore art should match the demand of the information age; so that they can be better fused together, making art plays an increasing role the information age.

## 4.6 Conclusion

Continuous updating of information technology provides a good opportunity for the rapid development of the information age, art as one of the important elements in the information age, is in a unique way reaching the various applications in the information age, making the information age more gorgeous. Role yields as the cut-in point of this article, in accordance with the establishment of the role evaluation of artistic roles, quantitative analysis of the role characteristics played by art in the information age, the results suggest that the role identity, satisfaction, and effect are associated with multiple factors. Consequently, with the changes in the external and internal factors, the role played by art in the information age will changes accordingly. We can expect that arts will have a more important role and significance for the future development of the information age.

## References

1. Jiang H, Chen Z (2012) Teacher education educational reconstruction model Chinese and foreign education research, vol 1(3), pp 67–69
2. Heng T, Kang J (2009) The cultural dynamics of globalization: the world's cultural diversity, vol 2(8). Xinhua Publishing House, Beijing, pp 433–439
3. Yang H (2009) The emergence and development of multiculturalism analysis academic forum, vol 3(2), pp 38–40
4. Zhong Nian (2011) The way of get along with different cultures of different ethnic groups—modernization and cultural diversity world nation, vol 4(6), 71–75
5. Weiyu D, Qinglin W (2009) Study Teaching Strat Conceptual change, Teaching J 5(2):11–13
6. Jie L, Yanqi B, Haitao S (2011) Study Conceptual Model Method, J Changchun Univ Technol Nat Sci 6(3):51–53
7. Shude Z, Huaitian Z, Caihui C, Quancai T, Chengyan L (2010) The needs of the conceptual model based on military China institute of electronic science university, vol 7(3), pp 41–43
8. Lujia G (2010) Multiple meanings and orientations of cultural psychology the Yinshan sciences, vol 8(4), pp 69–71
9. Lianzhao W (2011) Multicultural education-related issues academic forum, vol 9(5), pp 23–24
10. Jinzhou Z (2009) Western exploration of multicultural education and practice in China education and culture forum, vol 10(1), pp 106–108