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Exploring the Power of Online Gaming for Interactive Multimedia Learning in Analysing Big Data for Adult Education

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Abstract. In order to improve the teaching effect of adult education, this paper combines big data technology and multimedia interactive learning technology, and carries out teaching reforms in accordance with the current situation of adult education. Moreover, this paper uses big data technology to conduct data mining of adult education teaching resources, and obtain reliable teaching resources to facilitate digital teaching. At the same time, this paper uses multimedia interactive technology to transform engineering teaching from abstract to concrete teaching mode to improve students' sense of immersion. In addition, this paper uses big data technology and multimedia interactive technology to construct an adult education teaching system to improve the teaching effect of adult education. Finally, this paper builds the system with the support of big data technology and multimedia interactive technology. After the system is built, the system performance test is performed to evaluate the effect of big data mining and multimedia interaction. Judging from the evaluation results, it can be seen that the system has a certain teaching effect.

Keywords: Adult education; big data; multimedia; interactive learning; Power of Online Gaming
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1 INTRODUCTION

Higher adult education originated from the soil of western culture and developed and grew along with the industrialization process of western society. In the late nineteenth century, with the invasion of China by Western powers, Chinese higher adult education was nurtured and grown in the collision and running-in between Chinese and Western cultures of "the west culture communication to China". Moreover, by combing the development history of higher adult education in China and the West, it is not difficult to see that higher adult education has consolidated, consolidated and further promoted the development of Western civilization, established the contemporary status of Western powers in the globalization process, and will continue to push the entire human society forward.

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The research on the internationalization strategy of China's higher adult education is a major and urgent theoretical and practical issue. This study uses theories of strategic management and higher education internationalization to analyze the internationalization strategy and path of higher adult education, which in theory helps to promote the theoretical innovation of higher adult education and adult education. Moreover, this paper explores the essence of the internationalization of China's higher adult education from the perspective of strategic management, enriches its connotation, promotes the internationalization of my country's higher adult education, and provides a theoretical basis for the decision-making of the government, schools, and higher adult education practitioners. In practice, this research can provide a useful reference for my country's education authorities and higher education institutions to formulate strategies, policies and measures for the internationalization of higher adult education. At the same time, it provides the practitioners of higher adult education with references for the direction, elements, dimensions, and paths of the internationalization of higher adult education, so as to improve the internationalization level of my country's higher adult education. In addition, it can deepen the "Excellent Engineer Education and Training Program", promote the connotative development of higher education, train high-quality international engineering and technical talents, and realize the power of higher education [11].

At present, with the rise of the new industrial revolution worldwide, the competition among countries in the world for comprehensive national strength has become increasingly fierce, which has given birth to the emergence of a new economy. The new economy is an important driving force and source of social development, and its development activity represents the strength and potential of social development. Therefore, in the face of this situation, all countries are actively working towards the development of the new economy and actively promoting the development of the new economy in order to seize the commanding heights of the new round of industrial revolution [15]. The development of the new economy requires a breakthrough in the deep integration of industrialization and informatization, and a new industrial revolution as the forerunner, to promote the continuous innovation of production methods and the gradual changes in the economic structure. However, emerging industries and formats such as cloud computing, big data, Internet of Things, and smart manufacturing in the new economy are all facing a shortage of talents. Therefore, under the background of the new industrial revolution, the task of cultivating and bringing up a group of excellent engineering talents with excellent comprehensive qualities, adapting to the new economic development situation and meeting the needs of the new industrial revolution is very arduous and urgent [3].the power of online gaming for interactive multimedia learning and analyzing big data in adult education. It discusses the data collection methods, the integration of online gaming elements, and the framework for utilizing big data analysis to inform instructional design and learner engagement.

In order to improve the effect of adult education, this paper uses big data technology to mine teaching resources, and uses multimedia interactive technology to enhance learning effects and enhance teaching immersion, which lays the foundation for the subsequent improvement of adult education effects.

2 RELATED WORK

The wide application and good application effects of interactive video in commercial advertising have stimulated the research interest of educational researchers. Some educational researchers have begun to use interactive video in teaching and have made preliminary research results. The literature [12] found that the use of interactive teaching videos for collective training of students in online teaching can improve the learning effect of students. The literature [13] found that it can significantly improve the learning efficiency of employees when studying the application of web-based interactive teaching videos in enterprise knowledge management. The literature [17] found through research

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that the use of interactive teaching videos during pre-employment education can help promote students' collaborative learning and improve their professional academic performance.

The literature [24] researched the application of interactive micro-video in teaching, and conducted experimental research on its application in the course teaching of "Educational Technology Research Methods". The literature [10] developed a set of interactive micro-video teaching resources based on real teaching and research cases, and applied them to the classroom teaching of undergraduates and graduate students to assist the teaching process. Moreover, it used experimental research methods to verify that interactive micro-videos can effectively improve the learning benefits of undergraduates and the interest of graduate students. The literature [23] analyzed the recent research status of micro-course design and proved that interactive micro-course design will become an important research direction in the field of micro-course design in the future. Moreover, it explained in detail the design framework of interactive micro-courses, and put forward the content that needs attention in instructional design. The literature [7] found through research that the teaching method based on interactive micro-video can transform and arouse students' interest in learning, promote their self-learning habits, improve students' practical skills, and greatly enhance the teaching effect of "integration of teaching and doing". The literature [6] took "webpage layout and color matching" as a case, constructed interactive teaching micro-video resources that can be used in a variety of terminals, and proved that interactive teaching micro-videos can improve learning effects. The literature [18] studied the design principles of interactive micro-video and the specific process of instructional design by designing the "Photoshop Graphic Design" course. The literature [21] discussed the development of interactive micro-video resources, and conducted detailed research on the realization of micro-video and text association, micro-video annotation methods, and methods of optimizing micro-video screen effects. The literature [5] proposed the design of interactive micro-courses in the flipped classroom teaching model, and took the knowledge point of "changing depth of field" as an example to design and develop interactive micro-courses, and applied it to the teaching practice of SPOC flipped classrooms. The literature [2] conducted an in-depth study on the related design of interactive micro-courses and learning content design. The research found that distributing interactive micro-course learning content to students after class can significantly improve the learning effect of students.

The literature [14] explored the design of interactive micro-courses for wisdom education, analyzes the concepts and characteristics of interactive micro-courses, and explored the composition and realization of interactive micro-courses through specific examples. The literature [16] analyzed the characteristics and advantages of interactive evaluation micro-classes based on the existing problems of micro-classes, and summarized the design principles of interactive evaluation micro-classes. Moreover, on this basis, it has explored in detail the instructional design and production process of interactive evaluation micro-classes. The literature [4] conducted in-depth research on interactive micro-courses, constructed a design model of interactive micro-courses, and proposed diversified technical solutions for interactive micro-course development. The literature [22] explored the application of interactive micro-courses in the field of accounting teaching, developed a set of micro-courses applied to the specific teaching of undergraduates, and tested the application effects of interactive micro-courses through experimental research methods.

3 MULTIMEDIA INTERACTIVE ALGORITHM

In the interactive learning system discussed in this paper, we will involve two coordinate systems, namely the geographic coordinate system (TCS) and the smart device coordinate system. What we need to get is the orientation of the device in the geographic coordinate system, that is, how the orientation of the device is converted from the smart device coordinate system to the geographic coordinate system. The ultimate goal is to get the orientation of the device in the human torso coordinate system, which will be discussed later. Figure 1 shows the corresponding relationship

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between the angular velocity measured by the smart device gyroscope and the roll angle, yaw angle and pitch angle. The coordinate axes of the geographic coordinate system are as follows: The direction of the X_e axis points to the east of the earth, and the direction of the Y_e axis points to the north of the earth, and the direction of the Z_e axis is parallel to and opposite to the direction of gravity. The orientation of the intelligent multimedia interactive device is obtained by integrating the various angular velocities.

According to Euler's theorem, for any rigid body rotation, it can be considered to be obtained by rotating a certain angle around a certain axis of rotation. The API that Android provides to obtain the orientation of the device through the gyroscope is to assume that the coordinate axis in the smart device is fixed when the measured angular velocity is integrated. However, when the smart device is in motion, its rotation axis will change with the movement of the mobile phone. Obvious cumulative error appears in the measured equipment direction. In, directly establish the description of the problem in the geographic coordinate system. Using the relevant knowledge of Euler's axis angle, the rotational speed equation in the geographic coordinate system is obtained through differential calculation. This coordinate system is fixed during the movement of the mobile phone [20].

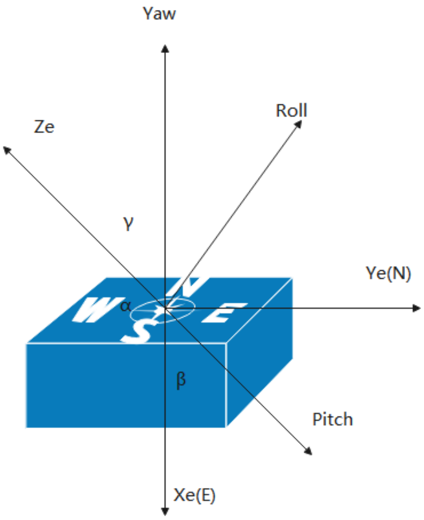

Figure 1: Geographical coordinate system and smart device coordinate system.

The rotation matrix R_g is used to indicate the orientation of the intelligent multimedia interactive device. According to Rodrigues' rotation formula, we can get [1]:

$$R_g = I\cos\theta_e + (e \times I)\sin\theta_e + e(e \cdot I)(1-\cos\theta_e) \quad (1)$$

Among them,

$$I = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \quad (2)$$

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represents the unit matrix in the geographic coordinate system. Then, the speed at which the smart multimedia interactive device rotates along the vector e in the smart device coordinate system is expressed in the geographic coordinate system as:

$$\frac{dR_g(t)}{dt} = \dot{\theta}_e e \tag{3}$$

Similarly, the speed of rotation can also be expressed as $R_g(t)\Omega(t)$, where:

$$\Omega(t) = \{\omega_x, \omega_y, \omega_z\} \tag{4}$$

refers to the angular velocity measured in the gyroscope, and $R_g(t)$ is a rotation matrix that changes with time. Therefore, we can get:

$$\frac{dR_g(t)}{dt} = R_g(t)\Omega \tag{5}$$

In order to avoid this problem, researchers have proposed the use of quaternions to express rotation. The unit vector is defined as[19]:

$$q = [q_1, q_2, q_3, q_4]$$

(6)

Among them,

$$q_1 = \cos\frac{\theta_e}{2} \tag{7}$$

$$[q_2, q_3, q_4] = \sin\frac{\theta_e}{2} \cdot e \tag{8}$$

According to the derivation of the rotation formula, R_g mentioned above can be expressed as:

$$R_g = \begin{pmatrix} 1-2y^2-2z^2 & 2xy-2wz & 2xz+2wy \\ 2xy+2wz & 1-2x^2-2z^2 & 2xy-2wz \\ 2xz-2wy & 2yz+2wy & 1-2x^2-2y^2 \end{pmatrix} \tag{9}$$

According to the differential equation of quaternion versus time, we can get:

$$\frac{dq(t)}{dt} = \frac{1}{2}\begin{bmatrix} 0 & -w_x & -w_y & -w_z \\ w_x & 0 & -w_z & -w_y \\ w_y & -w_z & 0 & w_x \\ w_z & w_y & -w_x & 0 \end{bmatrix}\begin{bmatrix} q_0 \\ q_1 \\ q_2 \\ q_3 \end{bmatrix} \tag{10}$$

Since the above formula is a non-singular ordinary differential equation, it is assumed that the initial angle θ is 0, that is:

$$q_0 = [1, 0, 0, 0] \tag{11}$$

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And the value of the angular velocity can be obtained from the real-time data of the gyroscope sensor, then the solution of the differential equation can be obtained by the commonly used approximate solution. In order to better estimate the value of the rotation matrix, we use the fourth-order Runge-Kutta method to solve the above equation. An adaptive window size that changes. Moreover, if the size of the window is fixed to a specific value, no matter how small the window size is, there will always be some changes in sensor values within the window. If the window size is set too large, the accuracy of the rotation matrix will be insufficient, if it is set too small, it will greatly increase the amount of calculation [8].

Since the MEMS gyroscope cannot continuously provide high-accuracy data, A^3 considers the method of using both the acceleration and the compass value to estimate the direction of the intelligent multimedia interactive device. Figure 2 shows the relationship between the direction of gravity (obtained from the data measured by the acceleration sensor), the direction of the compass (the angle between the Y-axis projection of the smart multimedia interactive device to the horizontal ground and the geomagnetic north surface) and the geographic coordinate system (TCS). When the gravity direction of the intelligent multimedia interactive device is determined, the possible posture of the intelligent multimedia interactive device in the three-dimensional space is on a conical surface.

When the value of δ is also determined, the posture of the intelligent multimedia interactive device on the conical surface can be uniquely determined. By eliminating 3 degrees of freedom, the rotation matrix representing the orientation of the intelligent multimedia interactive device in the geographic coordinate system is expressed by the gravity value and compass value measured by the intelligent multimedia interactive device as [9]:

$$R_e = \begin{pmatrix} \frac{y^2 - z\cos\delta}{x\cos\delta - y\sin\delta}\sqrt{K} & \sin\delta & x \\ \frac{xz}{x\cos\delta - xy}\sqrt{K} & \cos\delta & y \\ \sqrt{K} & y & z \end{pmatrix} \tag{12}$$

Among them,

$$x = \frac{-g_x}{g} \tag{13}$$

$$y = \frac{-g_y}{g} \tag{14}$$

$$z = \frac{-g_z}{g} \tag{15}$$

$$g = \sqrt{g_x^2 + g_y^2 + g_z^2} \tag{16}$$

$$K = \frac{\left(\left(x\cos\delta - xy\right)\left(x\cos\delta - y\sin\delta\right)\right)^2}{x^2\left(x\cos\delta - y\sin\delta\right)^2} + \left(\left(y^2 - z\cos\delta\right)\left(x\cos\delta - xy\right)\right)^2 + \left(\left(x\cos\delta - xy\right)\left(x\cos\delta - y\sin\delta\right)\right)^2 \tag{17}$$

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The orientation of the intelligent multimedia interactive device obtained by the acceleration sensor and the compass is relatively independent of the orientation obtained by the gyroscope sensor. And the nature of these two methods for estimating the orientation of the smart multimedia interactive device is also different. The orientation obtained by the gyroscope is obtained by integrating and accumulating over time, and the main error is derived from the accumulation process; while the method combining the acceleration sensor and the compass is calculated as For the instantaneous intelligent multimedia interactive device orientation, the main source of error is the measurement error of the acceleration sensor and the compass (geomagnetic sensor) itself, which has nothing to do with time accumulation. According to experimental data, the orientation of the intelligent multimedia interactive device estimated by the gyroscope will have a relatively small error under normal circumstances, but it will accumulate. However, the compass itself will be affected by its environment, and its measurement error of the direction is unstable, and it is possible to obtain a good estimation result, but there are also many cases where the measured result is not accurate. Based on the research and analysis of these two methods, a chance calibration technique is proposed. This technology uses the data of the gyroscope to estimate the orientation of the intelligent multimedia interactive device, and judges the opportunity that can be used to calibrate the gyroscope according to the relevant algorithm. This technology compares two methods for estimating the orientation of intelligent multimedia interactive devices. If the estimated orientation changes of the two are the same, then the results obtained by the acceleration sensor and the compass are considered to be accurate, because the results obtained by the acceleration sensor and the compass are accurate. Is the instantaneous orientation.

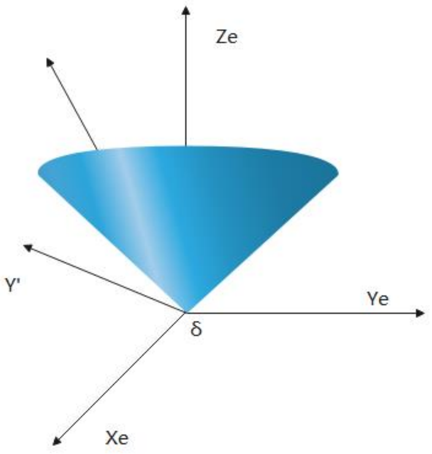

Figure 2: The orientation of the intelligent multimedia interactive device obtained by the compass and acceleration sensor.

First, the error generated by the MEMS gyroscope needs to be calculated. According to the experimental observation of A^3, the error of the gyroscope is affected by two factors, the angular velocity ω and the acceleration a. At this time, we assume that these two influencing factors are independent of each other, that is, the rotation and translation of the mobile phone independently affect Coriolis vibration. For each time interval i, the cumulative error e_i of the gyroscope can be expressed as:

$$e_i = f_\omega(\omega_i)\Delta t_i + f_a(a_i)\Delta t_i \tag{18}$$

Therefore, the cumulative error produced by the gyroscope at time t_x can be expressed as:

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$$E_{gyr}(t_x)=\sum_{t=t_0}^{t_x} e_i=\sum_{t=t_0}^{t_x}\left[f_\omega(\omega_i)\Delta t_i+f_a(a_i)\Delta t_i\right] \tag{19}$$

Among them, t_0 is the time to estimate the direction of the intelligent multimedia interactive device, and f_ω and f_a are measured based on experimental data. Therefore, the gyroscope error produced by the angular velocity ω is:

$$f_\omega(\omega)=\begin{cases} k_\omega \cdot \omega & if\,\omega<\omega_b/\sec \\ unbounded & if\,\omega\geq\omega_b/\sec \end{cases} \tag{20}$$

Among them, k_ω is a coefficient much smaller than l, and ω_b is the boundary value for the gyroscope to keep accurate measurement. In the same way, the error of the gyroscope caused by acceleration a is:

$$f_a(a)=\begin{cases} k_a \cdot a & if a<a_b/\sec \\ unbounded & if a\geq a_b/\sec \end{cases} \tag{21}$$

The value of the safety range and the coefficient of positive correlation here are obtained from the statistics of experimental data. At the same time, it is found through experiments that if the acceleration sensor and the gyroscope are within the safety range of their own measurement. When the data of the gyroscope is similar to the data of the acceleration, or the data of the compass, the error of the orientation of the intelligent multimedia interactive device estimated by the gyroscope is relatively low. For each detection window win, we assume that the value detected by the compass in this window is $C=\{c_1,c_2,\cdots,c_n\}$, and the corresponding angle measured from the gyroscope to the north of the geomagnetic field is $S_c=\{S_{c_1},S_{c_2},\cdots,S_{c_n}\}$. In the window win, the similarity between the compass and the gyroscope data is measured as:

$$p=\frac{1}{2^{Var(S_c-C)}} \tag{22}$$

Among them, $Var(S_c-C)$ represents the variance of S_c-C. Using the same method, the similarity between the gyroscope data and the acceleration sensor data can be calculated. p_c and p_g are respectively used to represent the similarity in time win between the data of the gyroscope and the compass and acceleration data. When $p_c>0.2$ and $p_g>0.2$, it is considered that a calibration opportunity is monitored at that moment. In order to measure the error of each calibration opportunity according to the similarity, A^3 has carried out a large number of experimental measurements, and the error p_c of the calibration opportunity is linearly related to p_g. The errors caused by the compass and the acceleration sensor are:

$$E_c=k_c\cdot p_c+b_c \tag{23}$$

$$E_g=k_g\cdot p_g+b_g \tag{24}$$

Then, the combined error of the compass and the acceleration sensor is:

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$$E_{com} = \max\left\{E_c, E_g\right\} \quad (25)$$

When we want to use the monitored calibration opportunity, we need to meet $E_{com} < E_{gyr}$.

4 MULTIMEDIA INTERACTIVE LEARNING SYSTEM FOR ADULT EDUCATION BIG DATA ANALYSIS

This article uses big data technology to collect adult education teaching resources, and uses multimedia interactive methods to interact with each other to construct a situational teaching model.

The concepts of grammatical interactivity, semantic interactivity and pragmatic interactivity are based on the design framework of multimedia picture linguistics, covering almost all the connotations of multimedia picture interactivity, and are the subordinate concepts of multimedia picture interactivity.

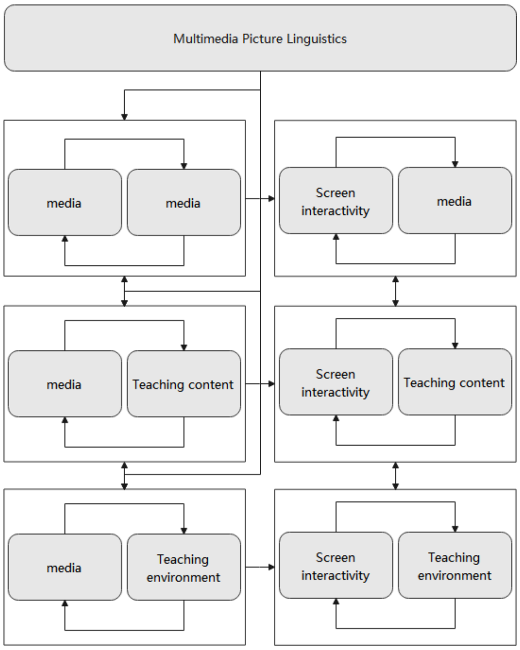

Figure 3: The continuity relationship of the research content of multimedia screen interactivity.

Grammatical interactivity mainly studies the structure and relationship between the interactivity of multimedia pictures and various media symbols. It belongs to the category of picture semantics research and is mainly manifested in the research on the interface content of digital learning resources. Therefore, there is a certain correspondence between textual interactivity and operational interaction, as shown in Figure 4.

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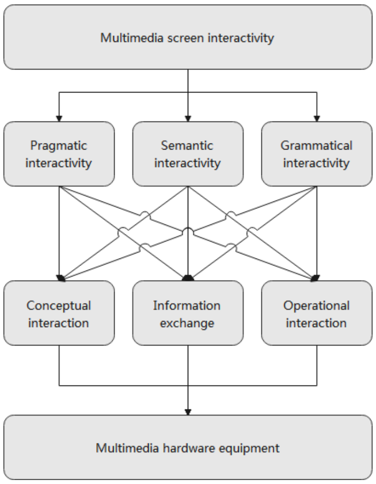

Figure 4: Interrelation between multimedia screen interactivity and teaching interaction level tower.

There is a close relationship between the interactivity of the media screen and the five elements of Laswell. This association is mainly reflected in the corresponding relationship between the interactivity of different types of multimedia screens and the five basic elements of the education communication process, as shown in Figure 5.

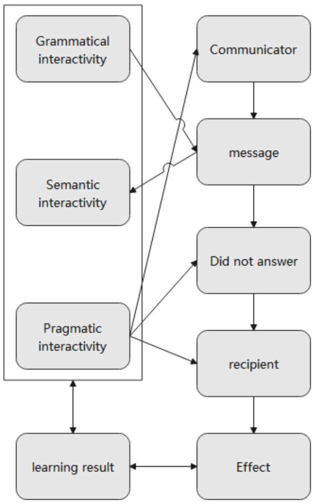

Figure 5: Correspondence between multimedia screen interactivity and communication elements.

From the perspective of multimedia screen interaction design, the four elements of the Belo model of source, information, channel, and broadcaster also have a certain corresponding relationship with different levels of multimedia screen interaction, as shown in Figure 6.

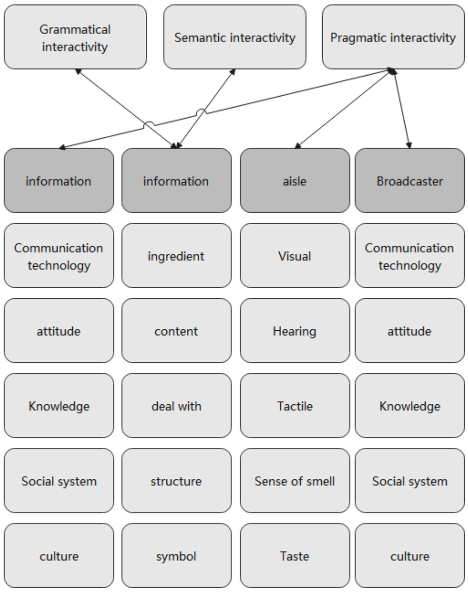

Figure 6: The interrelationship between the interactivity of multimedia screens and the Bello dissemination model.

The interweaving of the levels of media screen interactive design and the influencing factors at each level clearly shows the structure and content of the research on multimedia screen interactive design, which is in line with the previous concept of building a design framework. Therefore, we built a "multimedia screen interactive design framework" on this basis, as shown in Figure 7.

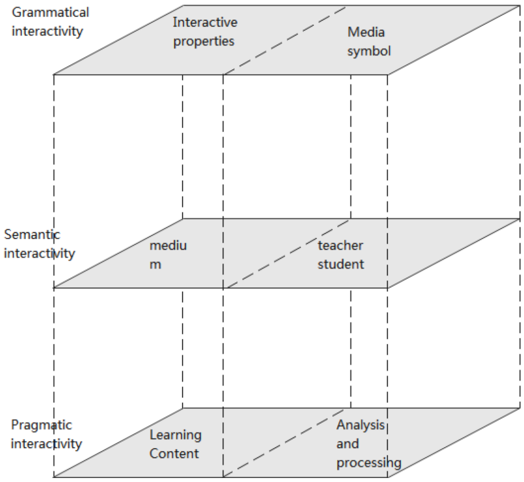

Figure 7: Interaction design framework of multimedia screen.

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5 TESTING OF MULTIMEDIA INTERACTIVE LEARNING SYSTEM

Based on the adult education curriculum, this paper builds a system with the support of big data technology and multimedia interactive technology. After constructing the system, this paper conducts system performance testing to evaluate the effect of big data mining and multimedia interaction. First, this paper conducts research on the effect of big data technology in adult education resource mining, and obtains the results shown in Table 1 and Figure 9.

Num	*Data mining*	*Num*	*Data mining*	*Num*	*Data mining*
1	*90.3*	*23*	*92.7*	*45*	*91.5*
2	*90.3*	*24*	*89.9*	*46*	*92.5*
3	*90.0*	*25*	*91.4*	*47*	*92.9*
4	*90.4*	*26*	*91.1*	*48*	*89.8*
5	*90.4*	*27*	*88.2*	*49*	*89.9*
6	*90.2*	*28*	*93.7*	*50*	*89.9*
7	*89.1*	*29*	*91.3*	*51*	*89.4*
8	*92.4*	*30*	*92.9*	*52*	*92.9*
9	*92.8*	*31*	*92.8*	*53*	*89.0*
10	*89.1*	*32*	*89.5*	*54*	*90.5*
11	*89.0*	*33*	*91.6*	*55*	*89.9*
12	*90.7*	*34*	*93.0*	*56*	*90.4*
13	*89.0*	*35*	*88.9*	*57*	*88.1*
14	*90.2*	*36*	*89.2*	*58*	*89.3*
15	*88.1*	*37*	*91.0*	*59*	*92.1*
16	*90.6*	*38*	*91.0*	*60*	*90.5*
17	*91.3*	*39*	*93.1*	*61*	*88.2*
18	*92.8*	*40*	*89.2*	*62*	*90.0*
19	*90.5*	*41*	*88.9*	*63*	*90.9*
20	*90.7*	*42*	*90.1*	*64*	*88.3*
21	*89.7*	*43*	*89.6*	*65*	*93.5*
22	*93.6*	*44*	*88.1*	*66*	*93.2*

Table 1: Statistical table of the evaluation of the effect of big data technology in the mining of adult education teaching resources.

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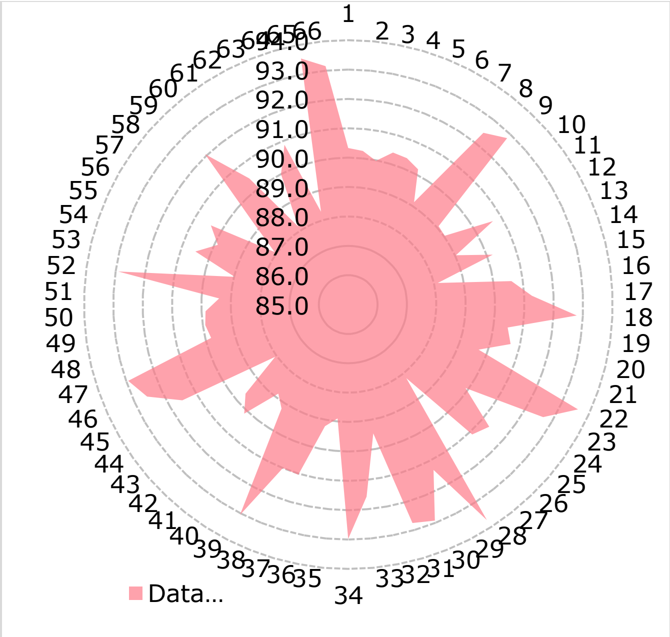

Figure 8: Statistical diagram of the evaluation of the effect of big data technology in the mining of adult education teaching resources.

The experimental analysis results show that big data technology can play a certain role in adult education teaching resources. After that, the evaluation of multimedia interactive learning effects in adult education is carried out, as shown in Table 2 and Figure 9.

Num	*Teaching effect*	*Num*	*Teaching effect*	*Num*	*Teaching effect*
1	*89.1*	*23*	*87.7*	*45*	*86.3*
2	*84.9*	*24*	*89.4*	*46*	*88.9*
3	*86.2*	*25*	*83.6*	*47*	*87.8*
4	*88.6*	*26*	*89.3*	*48*	*87.5*
5	*84.0*	*27*	*84.1*	*49*	*83.0*
6	*90.4*	*28*	*85.4*	*50*	*88.1*
7	*89.2*	*29*	*83.6*	*51*	*84.1*
8	*86.8*	*30*	*85.2*	*52*	*86.3*
9	*90.8*	*31*	*89.4*	*53*	*83.6*
10	*85.1*	*32*	*88.8*	*54*	*90.7*

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11	*90.3*	*33*	*86.0*	*55*	*87.1*
12	*84.1*	*34*	*84.6*	*56*	*85.1*
13	*86.4*	*35*	*90.3*	*57*	*88.1*
14	*89.7*	*36*	*83.8*	*58*	*89.2*
15	*90.6*	*37*	*88.3*	*59*	*83.5*
16	*87.5*	*38*	*83.4*	*60*	*83.2*
17	*90.7*	*39*	*84.1*	*61*	*89.3*
18	*89.5*	*40*	*86.7*	*62*	*90.2*
19	*87.3*	*41*	*84.6*	*63*	*90.0*
20	*85.8*	*42*	*84.6*	*64*	*89.3*
21	*87.6*	*43*	*84.2*	*65*	*87.4*
22	*86.1*	*44*	*87.2*	*66*	*85.8*

Table 2: Statistical table of evaluation of the role of multimedia interactive learning in adult education.

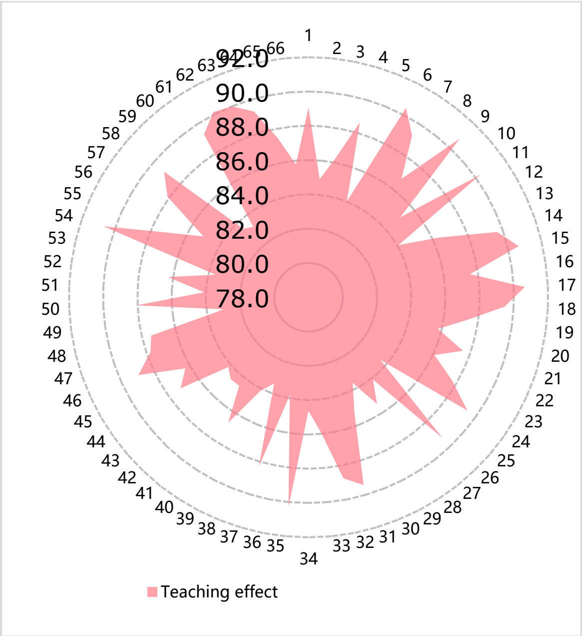

Figure 9: Statistical diagram of evaluation of the role of multimedia interactive learning in adult education.

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Through experimental research, it can be known that multimedia interactive learning can play a good effect in adult education and effectively promote the teaching effect of adult education.

6 CONCLUSION

The rapid development of information technology is profoundly changing the world, and this influence is profoundly subverting the entire concept of traditional education. How to use information technology to better serve education is a problem that researchers in education technology and related fields should focus on. At present, information technology has been widely used in school education and teaching activities, so we should think about how to promote the learning of learners of different ages through the effective design of multimedia screen interaction. This article uses big data technology and multimedia interactive technology to construct an adult education teaching system to improve the teaching effect of adult education. Moreover, this paper builds the system with the support of big data technology and multimedia interactive technology. After constructing the system, this paper conducts system performance testing, and evaluates the effect of big data mining and multimedia interaction. The research results show that the teaching system constructed in this paper is effective.

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