Research Article

Visual Space System Design in Digital Media Art Design

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With the development of the economy, graphic design has become one of the main forms of commercial advertising. Designers design different graphic design schemes for different layouts and design requirements, which puts forward new requirements for graphic design process work. With the advancement of technology, graphic design (or visual communication design) supported by digital media technology is not limited to print media, and network media is also included. This research mainly discusses the visual space system in digital media art design. It can be said that the reconstructed space under virtual reality is based on interaction, has an immersive and imaginative space, and is combined with narrative to a certain extent to create a new form of expression for the information expression of space design. This paper first interprets the concept of “space” from psychology, painting art, and film art produced. Then explain the particularity of digital media art design, and it uses the design works to explain the content of the exposition. Connecting digital technology can bring people the uniqueness of aesthetics. This paper makes related theoretical research on the design practice of visual space. In this paper, visual perception in psychology is introduced into design thinking. The concept of visual space is not only expressed in art and culture but also involves the concept of space and time in physics and the scientific research theory of visual perception in psychology. It breaks through the level of perceptual cognition of space in art design. 31.85% of the respondents think that visual space design is attractive. Now is the era of new media interaction. The development of interactive technology and devices has brought infinite possibilities to visual communication design. We cannot accurately say its future development and changes. Because of the emergence of new technologies and media, visual communication design is also expanding its own types of works, and it is constantly developing and improving through the study of people’s emotions and the combination of design and technology. This research has positive significance for the development of the visuospatial system. The advancement of digital media technology has enriched the means of expression in space design creation and expanded people’s living spaces. Through the combination of modern digital media technology at multiple levels and multiple channels, various new spaces can be created to further meet the new needs of contemporary people.

1. Introduction

Under the influence of the modern digital media environment, visual art is based on the successful experience of different industries, using the most scientific media technology and advanced creative methods to develop visual art. The combination of contemporary digital media and visual art has produced new media technology, which can be regarded as the main means of the visual art innovation. Entering the twenty-first century, digital new media art has become the most common design method applied in the contemporary exhibition industry. Advanced digital technology has made the modern display industry more modern, and the display methods have also changed from single to richer.

This article analyzes and sorts out the development of digital media art, displays design at home and abroad at this stage, and provides some ideas for the development and application of domestic digital media art in display design. This has positive significance for the research of China’s
digital media art industry. The process of creating visual art provides new meaning for visual art, and this new concept greatly expands the innovative vision in the field of visual art. Digital media art breaks through the artistic techniques of traditional film. In the current application process of digital media art, the application of simulation technology to express traditional artistic effects has the advantage of rendering scenes compared with the existing application methods.

The traditional display of static pictures, cultural relics, and texts can no longer enlarge the amount of information the audience can get and cannot satisfy the audience’s viewing experience. Therefore, digital display design requires practitioners to master the characteristics and advantages of print communication, video communication, electronic communication, and new media communication and organically combine traditional media and new media to achieve an optimal combination. Based on the theory of visual communication design, through the analysis and research of different ideological themes in the development of Chinese and Western painting arts, it discusses that people’s understanding of “space” is constantly changing. This change reflects that people’s cognition of self, cognition of nature, and cognition of the universe are also constantly improving, and the aesthetic experience brought by visual space has a deeper meaning. Through the study of digital media, it is clear that visual communication is endowed with new forms and characteristics in the new design environment. From the perspective of human visual perception, a more scientific and rational analysis of the visual design elements in the visual communication design is carried out, and based on this, the unique realization method and expression form of the visual space design in the digital media art design are demonstrated. “Space” is endowed with a new form of expression and brings a different aesthetic experience and more concretely expresses the aesthetic experience brought by visual space through design practice. Digital media art has been recognized by more scholars and the public with its unique charm. The application of new technologies has changed the style of exhibitions in the past. What is more valuable is that the application of new technologies has made exhibitions that were originally impossible for human beings to become a reality, bringing strange feelings and satisfaction to the visitors. Facing the ever-changing development of new media art, as researchers, we need practitioners to work hard and think constantly.

2. Related Work

The widespread use of digital interactive technology and the widespread use of film reorganization spaces in the context of digital media have produced significant changes in film development. Peicheva D believes that we must continue to accept different types of challenges and continue to innovate digital communication products in various fields of society. Aims: “Mapping” promotes major theoretical efforts and applied practice in all aspects of digital media literacy, as well as exploring its dimensions and predictions in society, more effective methods need to be identified to engage, encourage, and motivate students to utilize high-quality theoretical and applied knowledge and skills [1]. Forestal believes that the problem of the virus exemplifies the challenges of building democratic communities [2]. Romer and Moreno believe that digital media provides more opportunities for marketing and social communication of risky products and behaviors [3]. Reyna et al. believe that literacy traditionally means the accessibility of these tools has changed and the general public can afford them [4]. Oklobdija and Popesku believe that information technology has led to many changes [5]. In today’s digital age, with the emergence of “off-desktop” technologies such as virtual environment, augmented reality, mixed reality, and computer interaction, the design and art creation and development of multichannel human-computer interaction have become an important research direction. Human-computer interaction based on “vision” is particularly valued in art and scientific circles.

3. Visual Space System Design Method in Digital Media Art Design

3.1. Attributes of Visual Elements and Their Roles in Spatial Expression

3.1.1. Shape. Shapes are independent contours or surfaces that appear as regular or irregular polygons and closed curvilinear layouts. The shape itself presents visual stimuli and can be flat-like, with areas of the picture parallel and flush on a two-dimensional surface. But it is also possible to use the axes implicit in the shape or the combination of shapes to give the shape a sense of direction, thus creating depth and presenting a three-dimensional appearance. In multimedia art design, shapes are mostly completed by software. When computers recognize and express shapes, even complex shapes are derived from simple basic geometric shapes. Seemingly complex organisms are also obtained by intersecting, subtracting, and adding multiple basic geometric shapes [6].

3.1.2. Vein/Texture. Through the manipulation of various sizes, repetitions, densities, lightness, and shapes, two-dimensional planes can appear three-dimensional, and vein on three-dimensional surfaces can bring a tactile experience. The vein is a quality of modeling, and pattern can be regarded as texture if the unit is small enough. A pattern is a graphic design that is repeated in regular units. As long as the cells that make up the cluster are large enough to be discerned by the naked eye, it is no longer considered texture. Materials have solid texture features, which involve size, shape, orientation, and proportion. The texture appears as an intertwined appearance, derived from patterns. Generally, high-density regular or irregular units can form texture. Like color, texture also aids cognition and memory because it provides visual and tactile feedback that influences how people understand and interpret an image or object.

3.1.3. Dimensions. The size of the object depends on several variables, depending on the context. Factors such as points, lines, surfaces, shapes, colors, brightness, texture, and
orientation all determine the perception of size. For a point to look like a point, it must be placed against a large enough background so that it can appear small. Otherwise, the point will turn into a shape, and the apparent length and width will constitute visual-spatial cues. In the picture, large shapes will appear closer than small lines, and thick lines will appear closer than thin lines. Gradients from small to large can symbolize or suggest motion effects. In general, the lack of contrast in the size relationship of the object will result in a static picture with visual directional movement. Color and lightness play an important role in the sense of size relationship. Light and bright colors make objects appear larger, while deep and dark colors make them smaller.

3.1.4. Color. Color in physics means that light with different wavelengths shines on an object, part of the light wave is absorbed by the object, part of the light wave is reflected, and the reflected light wave is received by the human eye. Since wavelengths between 0.39 and 0.77 μm are visible to the human eye, different objects have colors in the human eye. \( S_R, S_G, S_B, S_A \) is used to represent the blending parameter of the fragment; \( D_R, D_G, D_B, D_A \) is used to represent the target blending parameter; and the color value can be obtained through the blending operation [7]:

\[
V_Y = S_R R + D_R R + D_G G + S_G A + D_B A + S_B B. \tag{1}
\]

Given \( n + 1 \) control points at positions \( P_K \) [8]:

\[
P_K = (X_K, Y_K, Z_K). \tag{2}
\]

The expression of the curve is [9]

\[
P(U) = \sum B^N_K(U) P_K. \tag{3}
\]

The mixing function \( B^N_K(U) \) is a Bernstein polynomial [10]:

\[
B^N_K(U) = C_{N,K}(1-U)^{N-K}U^K,
\]

\[
C_{N,K} \left( \begin{array}{c} N \\ K \end{array} \right) = \frac{N!}{K!(N-K)!}. \tag{4}
\]

Using a new variable \( t \) to replace the variable \( u \), the calculation formula of the B-spline curve is [11]

\[
P(t) = \sum p_k N(t), \tag{5}
\]

where \( p_k \) is a set of \( n + 1 \) control points [12].

\[
N_{K,D}(t) = \frac{t - t_k}{t_{k+d-1} - t_k}N_{K,D-1}(t) + \frac{t_{k+d} - t_k}{t_{k+d-1} - t_k}N_{K+1,D-1}(t). \tag{6}
\]

3.2. Fusion of Information in Human and Space Design under Digital Media

3.2.1. Symbiotic Relationship. The human body itself is the medium for disseminating information, an indispensable medium for people to feel the world and understand the world, and the basic way for people to express their thoughts and spread information. Modern performance artists also use the characteristics of “body media” to the extreme. Under the influence of digital media, people’s dependence on electronic media is increasing day by day, and the way to know the world will come from the media rather than personal experience. While people widely use new information processors, they greatly enhance their own subjective initiative. The state of digital media art space is shown in Figure 1.

3.2.2. Interactivity. The development of digital media technology has provided the possibility for the interaction between people, people and things, and things in space design, and this interaction makes the readers, listeners, and audiences in the traditional sense increasingly change to participants. At present, the academic visual space system refers to the image system of various visual expression elements such as graphics, characters, colors, materials, and so on as a means to express the image, content, nature, direction, and other functions of the design in a specific space.

The vector formula of the Hermite curve segment between the two control points \( p_k \) and \( p_{k+1} \) is [13]

\[
H(U) = AU^3 + BU^2 + CU + D. \tag{7}
\]

Its equivalent matrix formula is [14]

\[
H(U) = \left[ U^3 \ U^2 \ U \ 1 \right] \cdot \left[ A \ B \ C \ D \right], \tag{8}
\]

where the four parameters \( A, B, C, \) and \( D \) can be calculated from the boundary conditions of the Hermite curve segment, and the boundary conditions are [15]

\[
H(0) = p_k, \quad H(1) = p_{k+1}, \quad H'(0) = \Delta p_k, \quad H'(1) = \Delta p_{k+1}. \tag{9}
\]

3.3. Reconstruction Trend of Virtual Space and Real Space

3.3.1. Immersion of Space. Virtual reality strives to make people feel as if they are on the scene through a certain form of presentation, which is of great significance to the formation of spatial immersion. A successful VR presentation or work can give participants a sense of escaping their real world and immersing themselves in another environment. This sense of immersion must be produced by the sensory organs alone, rather than by the psychological imagination, which is a kind of shock of the space to the participants’ senses.

3.3.2. The Imagination of Space. The imaginative nature of virtual reality is that participants make associations, judgments and inferences based on the information they obtain in the virtual space (including the feedback information on
their own behavior) and make associations with the changes in the situation to obtain more information.

3.3.3. Reconstruction and Functional Change of Space. The space formed by virtual reality changes the relationship between the real space and the virtual space, that is, the virtual space can be a special part of the real space, a parallel world of the real space, or a nest of the virtual space and the real space. At this time, the virtual space is still based on the real world and does not really exist. The reconstruction of the virtual space and the real space has also changed its functionality, and the physical space, which is the basis of space at the beginning, has no special function. The survival needs of human beings gave birth to buildings, and the space has the function of living. The development of economy and culture gave birth to display culture, and the space has the function of display, and then people’s imagination demand breeds virtual space. At this time, the space does not really exist, and people reach the satisfaction of their imagination after accepting the information in the space. When the narrative plot is more moving and believable, the immersion is stronger. Different participants intervene in the development of narrative plots and make interactive choices, which can also lead to the discontinuity and difference of spatial narratives, and then promote the participants to give feedback after interacting in the virtual space. The construction of digital media art is shown in Figure 2.

3.4. Construction Method and Performance of Image Element Space. The picture element is one of the most common elements in multimedia works, and its space can be divided into two. One is the space within the picture, that is, the scene in the picture we use (photographic work or other picture materials) itself constitutes the still three-dimensional space within the picture. Of course, this kind of space is the space that already exists when we obtain the picture data, and it is not changed by us. But this requires us to control the performance of the space in the shooting of reproducing the real space. The second is the space outside the picture, that is, the spatial structure of the interface of the image element space.

**Figure 1:** State of the digital media art space.

**Figure 2:** Construction of digital media art.
multimedia works. The space is completely controlled by the designer, looking for the appropriate position to place pictures in the three-dimensional virtual dynamic space, making it one of the elements that constitute the overall space. The space is also a core part of multimedia art space design.

3.4.1. The Space inside the Picture. The picture element used in multimedia works, in terms of its performance in the multimedia virtual space, is a completely static two-dimensional state element and does not have a sense of volume.

3.4.2. The Space outside the Picture. The space outside the picture element in the multimedia work is the virtual three-dimensional space where the interface of the multimedia work is located. This space is a virtual three-dimensional space that is in motion. The space inside the picture is not interfered with by us, but the space outside the picture can be organized and arranged arbitrarily by us, and the core of the multimedia space form design is also here. For example, the brand image of a watch store is shown in Figure 3. In the form of a timer in a 20-minute period, it is constantly moving according to the color, the fan chart of the hour hand movement, the time, and the month, to convey the vitality of the brand and the variety of products. There will be a corresponding display visual space in the store to promote the brand culture, which can also better attract the attention of consumers.

3.5. Construction Method and Performance of Text Element Space. The spatial forms of text elements in multimedia works are divided into two-dimensional plane and three-dimensional. Regardless of whether it is a two-dimensional plane or a three-dimensional three-dimensional text element, it can be static or moving, and the text element in any state expresses the existence of space in its unique way. In multimedia design works, text mainly includes title and explanatory text, and its form is reflected by text type, font size, font color, layout and paragraph attributes between texts, some variants produced by fonts, and artistic processing effects.

3.5.1. Two-Dimensional Plane Text Elements. The text element in the two-dimensional plane state usually appears in its own inherent state and occupies its own space in multimedia works. However, this space is not emphasized too much, and the main function of the text element is to interpret the meaning of the picture. But, in some special effects, two-dimensional plane files can also achieve simple visual effects through some special methods and processing. For example, use projections or use text elements as textures to attach to 3D objects.

3.5.2. Three-Dimensional Text Elements. In the process of editing and creating multimedia works of art, we can directly build the text into a three-dimensional three-dimensional mode text style through three-dimensional software. Through the method of volume perspective, a sense of volume is established for it so that the text itself has an independent sense of visual space before it is used in multimedia works.

The weight difference $D_i$ between $dl_i$ and $dl_j$ on the $i$-th scan line is defined as follows [16]:

$$D_i = \frac{1}{M_{l_i}} \sum_{j=1}^{M_{l_j}} dl_{i,j} - \frac{1}{M_{l_{r_i}}} \sum_{j=1}^{M_{l_{r_j}}} dl_{i,r,j},$$

where $M_{l_i}$ and $M_{l_{r_j}}$ represent the number of distance elements contained within $dl_i$ and $dl_j$, respectively [17].

$$p(\alpha) = A \exp[b \cos(\alpha)],$$

where $b$ is a parameter used to adjust the degree of diffusion of the distribution and $A$ is a normalization constant term [18].

3.6. The Construction Method and Performance of Sound Element Space-Time. Speech and all other information related to sound are sensed by hearing, so hearing is also one of the most important sense organs of human beings. Sound has also become a source of information, which uses a special transmission method to form a new art form. Digital media art is an emerging audiovisual art form, and its sound is an important digital media design element. And when we design some special multimedia works, sometimes, we use sound as the main object of digital media art design.

Classification of sounds in multimedia works:

1. Voice time and space
   Voice is the most expressive and colorful voice in reality. Vocal music makes the potential of voice fully and freely exerted, and theatrical performance makes
the voice artistic. The vitality of language is manifested in rich words. In life, we almost rely on instinct to achieve pronunciation. When they are happy, they speak very fast and have a high tone; when they are sad, they speak slowly, and their voices are low; and when they are crying and angry because their emotions are extremely unstable, the intensity, rhythm, and pitch of their voices show different time and space states. In the design of digital media artworks, voice is mainly expressed in the explanation of the content of its multimedia pages, forming a voice-over. It does not happen by the characters in the picture but only explains the meaning of the picture and the knowledge structure expressed by the work. Therefore, the voice in the digital media art design will not reflect too much of a single picture but is mostly used for the appearance of page transitions, which plays the role of prompting the page time and space to change.

(2) Sound effect space-time

Sound effects are all the sound effects in the big environment of nature, including motion, machinery, environment, nature, and other sounds. It is the most temporally expressive sound effect of all sound elements. For example, for the movement of the car from far to near, we will match the corresponding sound effects in the picture. We can see the car from far to near, and we can also audibly judge that the car is getting closer and closer to us. We can also use sound effects to hint at the spatiotemporal changes in page transitions. For example, the sound of waterfalls first enters hearing and then enters vision. This use of time and space brings us psychological-emotional changes or stimulates interest in the work itself.

(3) Music Time and Space

Music is the art of time, and the space-time created by music is an illusionary psychological space-time, which brings us a kind of psychological space-time feeling, a time-space about emotion. And what voice and sound bring us is the real environment space-time structure in the real sense. Here, we can use music to deepen the impression of the multimedia subject, render the theme atmosphere, and arouse the viewer’s strong emotional inclination. In the time and space of art, music is an art that communicates with human hearts, expresses emotions, and cannot be expressed in words. It is also the most abstract and unique time art that can give people a huge imagination space. Therefore, we can use music to express rapid and subtle changes such as movement and stillness, end and change, tension and stillness, and so on to construct and set off the time and space of digital media art and to trigger people’s various feelings about life. Music is an important element in the design of digital media art, and it has a huge appeal, making people immersed in the rhythm and rhythm given by the music. These characteristics of its music make us use music to render the atmosphere of the entire space-time environment and express the main emotion when we create multimedia works. When combined with its pictures, it presents richer temporal and spatial content.

The information amount \( X_L \) of a vertex with a steering angle of \( \alpha \) is calculated as follows [19]:

\[
X_L = -\log_2 (\alpha).
\]

The amount of information corresponding to rigid points (corner points) and soft points (sampling points) is calculated as follows [20]:

\[
X_g = -\sum_{i=1}^{\alpha} \log_2 (p(\alpha)),
\]

\[
X_f = -\sum_{j=1}^{\alpha} \log_2 (p(\alpha)).
\]

Finally, the rigid-soft contrast of icon \( G \) is calculated as follows [21]:

\[
G_B = \frac{I_S}{I_S + I_H}.
\]

Let \( C_{\text{out}} \) and \( C_{\text{in}} \) denote the rigid-flex contrast of the outer boundary (if present in \( G \)) and inner boundary, respectively, and they are calculated as follows:

\[
C_{\text{out}} = \frac{I_{\text{out}}}{(I_{\text{out}} + I_{\text{out}})}.
\]

\[
C_{\text{in}} = \frac{I_{\text{in}}}{(I_{\text{in}} + I_{\text{in}})}.
\]

3.7. The Performance Time and Space of the Combination of Sound and Picture. The time and space environment is represented by a combination of audio and visual total hue calculation:

\[
f_2 = \{i|h(i) > m \cdot \chi\}.
\]

The image unevenness coefficient \( J_Y \) is

\[
J_Y = \frac{(E_{\text{max}} - E_{\text{min}})}{(E_{\text{max}} + E_{\text{min}})}.
\]

Correcting the \( L \) value:

\[
L = L' + n_1 + n_2 + n_3 + \cdots + n_{m-1}.
\]

By simplifying:

\[
L = L' + (m - 1) \times \bar{n} = L + (n - 1) \times k \times \bar{l},
\]

where \( \bar{l} \) is the span average.

4. Visual Space System Design Results in Digital Media Art Design

First, we use the boxplot tool to count the distribution of the average manual scores and contrast. Each central blue rectangle spans from the first quartile to the third quartile.
The average human score of the 60 icons was used as the human evaluation score and aesthetic perception. In addition, we also counted the statistical distribution of the standard deviation of the manual scoring of the 60 icons in terms of balance, contrast, harmony, and aesthetics (the statistical distribution of the standard deviation is shown in Figure 4(b)). The standard deviation of the manual scoring of all icons is less than 0.9, which indicates that the variation of the manual scoring of all testers is small, which further ensures the high reliability and consistency of the manual scoring of all testers.

The design is a virtual reality indoor scene application. Since many 3D models with compact layouts need to be built using 3D modeling software in the development process, the requirements for the computer’s 3D graphics computing capability are high. The development and operating environment requirements and descriptions are shown in Table 1.

According to the overall demand of the event, the plan is directly measured and drawn on the spot, then the layout is discussed, and finally, the safest, reliable, and cost-effective construction plan is determined. The construction part is divided into the following parts: light show projection wooden structure background, light show equipment hoisting rack, and AV audio lighting equipment. The construction schedule is shown in Table 2.

The construction of the M museum pays great attention to the development of the museum under the new situation. The museum not only has an educational interactive area but also pays attention to the experience and feelings of visitors in the design of the exhibition. It not only has exhibits and pictures, but even modern technology will be used as a form of expression to design a variety of media display projects. On the first floor of the museum, a digital projection hall and an interactive multimedia hall are established. The digital projection hall adopts a full-view ultrawide screen as a digital projection for playing high-definition digital movies and three-dimensional movies. The interactive multimedia hall is equipped with high-configuration computers and high-definition digital playback equipment. The exhibition area emphasizes making visitors feel like they are in the real world and conveys the information of the exhibits in an experimental and interactive way. The exhibition on the first floor of the M museum is shown in Figure 5.

The origin of the two-dimensional coordinate system is set at the upper left corner of the marker; the X-axis is the horizontal direction; and the Y-axis is the vertical direction.

**Table 1: Requirements and description of its development and operating environment.**

<table>
<thead>
<tr>
<th>Serial number</th>
<th>Name</th>
<th>Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Operating system</td>
<td>Microsoft Windows 7, 64 bit operating system</td>
</tr>
<tr>
<td>2</td>
<td>RAM</td>
<td>The minimum requirement is 4 GB memory and the recommended 8 GB memory</td>
</tr>
<tr>
<td>3</td>
<td>3D modeling software</td>
<td>3ds max 2016 (64 bit)</td>
</tr>
<tr>
<td>4</td>
<td>Texture making software</td>
<td>Photoshop CS6 (64 bit)</td>
</tr>
<tr>
<td>5</td>
<td>Application development software</td>
<td>Unity 2017.2.3 (64 bit)</td>
</tr>
</tbody>
</table>

(average human scores are shown in Figure 4(a)). The graph shows the overall variation range (minimum to maximum value), the central variation range, and the typical value (median). The average human score of the 60 icons in terms of balance, contrast, harmony, and aesthetics (the statistical distribution of the standard deviation is shown in Figure 4(b)). The standard deviation of the manual scoring of all icons is less than 0.9, which indicates that the variation of the manual scoring of all testers is small, which further ensures the high reliability and consistency of the manual scoring of all testers.

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The origin of the two-dimensional coordinate system is set at the upper left corner of the marker; the X-axis is the horizontal direction; and the Y-axis is the vertical direction.
The pixel is (1,500, 1,050); the virtual key size is set to (200, 75); the Vuforia SDK adopts the right-hand coordinate system; and the center point (0, 0, 0) of the marker is used as the origin of the three-dimensional coordinate system. The X-axis is positive to the right; the Y-axis takes the marker plane as a reference, and the upward is positive; and the Z-axis takes the marker plane as a reference point and is perpendicular to the marker plane, and the upward is positive. The original pixel coordinates are based on the left and right diagonal coordinates of the virtual button rectangle. The original pixel coordinates are shown in Table 3.

The design survey questionnaire surveys relevant domestic designers and conducts a statistical analysis on the status and views of today’s dynamic logo development. Questionnaires are distributed online and on-site so that the coverage is wide, and online distribution is convenient for designers to answer questions and saves time and paper. In the process of answering the field distribution, there are some related questions that can be exchanged in person and in a timely manner. The questionnaire was issued from January 24, 2018, to March 12, 2018, and 80% of the designers surveyed were from design majors (professional statistics are shown in Figure 6(a)). Among the designers, 52.46% are between 26 and 30 years old, and 39.34% are between 18 and 25 years old. Among them, 8.2% are over 35 years old (the age statistics of designers are shown in Figure 6(b)). It can be seen that the people engaged in dynamic logo design are generally young, with rich imagination and innovation passion.

The number of domestic dynamic logos is relatively small, and the data on the types of logos usually designed shows that 16.39% are text-based logos, and 16.39% are image-graphic logos (the statistics of text-based and image-graphic logos are shown in Figure 7(a)). Among them, 14.75% are geometric symbols; 47.54% are graphics combined with text; and only 4.92% are dynamic symbols (the statistics of geometric graphics and graphics combined with dynamic symbols are shown in Figure 7(b)). It can be seen that most of the logo designs are a combination of graphics and text, and there are fewer dynamic logo designs. Compared with static logos, dynamic logos more comprehensively show the spirit of enterprise. The development potential of a dynamic logo is great; the designer has few dynamic logo projects; and the experience is not rich enough, which is also one of the factors behind the slow development of the dynamic logo. Therefore, as a designer, we should strive to improve our own technology and knowledge and better apply dynamic logos to appropriate corporate branding.

In addition to meeting the basic aesthetic requirements, the use of digital media art in the display space is particularly important. The data on the direction that a dynamic logo

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**Table 2: Construction period arrangement.**

<table>
<thead>
<tr>
<th>Matter</th>
<th>Time period</th>
<th>Number of vehicles</th>
<th>Number of people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical construction</td>
<td>September 28, 09:00–10:00</td>
<td>1 car</td>
<td>3 people</td>
</tr>
<tr>
<td>Background construction</td>
<td>September 28, 09:00–29 12:00</td>
<td>1 car, 3 trucks</td>
<td>20 people</td>
</tr>
<tr>
<td>Truss frame construction</td>
<td>September 28, 09:00–14:00</td>
<td>1 car, 2 trucks</td>
<td>10 people</td>
</tr>
<tr>
<td>Projection lighting and sound system</td>
<td>September 28, 10:00–22:00</td>
<td>1 car, 2 trucks</td>
<td>10 people</td>
</tr>
</tbody>
</table>

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**Table 3: Raw pixel coordinates.**

<table>
<thead>
<tr>
<th>Color</th>
<th>Raw pixel coordinates</th>
<th>3D coordinates</th>
<th>Number of people</th>
<th>Color</th>
<th>3D coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>(90, 810)</td>
<td>(−108.68, −13.12)</td>
<td>Yellow</td>
<td>(840, 810)</td>
<td>(76.17, −13.12)</td>
</tr>
<tr>
<td>(290, 921)</td>
<td>(−71.71, −61.87)</td>
<td></td>
<td></td>
<td>(1040, 921)</td>
<td>(47.71, −61.87)</td>
</tr>
<tr>
<td>Blue</td>
<td>(471, 810)</td>
<td>(−41.28, 13.12)</td>
<td>Green</td>
<td>(1211, 810)</td>
<td>(76.17, −13.12)</td>
</tr>
<tr>
<td>(671, 921)</td>
<td>(−12.31, 61.87)</td>
<td></td>
<td></td>
<td>(1411, 921)</td>
<td>(109.10, −61.87)</td>
</tr>
</tbody>
</table>

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**Figure 5: Exhibition on the first floor of the M museum.**

**Figure 6(a):**

**Figure 6(b):**

**Figure 7(a):**

**Figure 7(b):**
focuses on show that 68.85% of designers believe that good creativity is the most important aspect (color, shape, and style statistics are shown in Figure 8(a)). A creative dynamic logo can effectively attract the audience and leave a deep impression on the audience during the display process. In this way, while promoting the corporate image, it can leave a good reputation among the audience (meaning, creativity, practicality, and fashion statistics are shown in Figure 8(b)). When designing dynamic logos, designers should pay attention to the creative design part and take into account elements such as color, style, fashion, and shape. Creativity is the core soul of a dynamic logo, and it is also the most intuitive point of color. To attract the attention of the audience the first time and leave a deep impression, the creative point is very important.

Figure 9 shows the effect of digital media art on future corporate image propaganda. Among the designers, 75.41% believe that there is a promotion effect, which shows that the designers are very optimistic about the development prospects of digital media art. The designer’s confidence in the development of digital media art is directly related to the completion and specific application of digital media art, and it has a positive effect on popularization.

According to the data analysis of CNNIC (China Internet Information Center), the main body of digital media in China is 10–39 years old, accounting for 78.1%. There are three main groups in the population structure: students...
account for 23.8% of the total, self-employed and freelancers account for 22.3% of the total, and employees of public institutions and enterprises account for 14.2% of the total. Therefore, the main group of respondents is set as 18–35-year-old college students, office workers, and young self-employed freelancers. Figure 10 shows the population structure statistics of digital media.

Most of the dynamic logo designs are displayed on digital media, and there is a lot of room for display. The commonly seen dynamic logo display form is shown in Figure 11. According to the data, 80.33% of dynamic signs are displayed and played in the virtual display space of network media. The development of dynamic signs is closely related to the application of digital media art. As the main body of publicizing corporate image, relying on digital media display is too limited. For example, the art museum not only considers the dynamic logo display in the virtual digital space but also uses the form of installation art to display the dynamic logo in the actual space in order to enrich the art museum itself and image promotion. This breaks through the application of the single display space and enriches the dynamic logo display itself, which plays a good role in publicity. At present, it is the initial stage of the development of dynamic signs, which is mainly based on network media display, and the actual plane and environmental display space are used as a way to comprehensively publicize the image of enterprises in the future.

The statistics of favorite aspects of visual space design are shown in Figure 12. Among the respondents, 31.85% think that interesting and unusual styles are attractive; 31.21% think that creativity is the most attractive; and 17.17% think that the texture effect is more attractive. It can be seen that the public thinks that the visual space design that is creative...
and distinctive and has a good display effect attracts people’s attention. In the process of designing dynamic logos, we should pay attention to the appeals and aesthetic preferences of the public so that information can be more effectively conveyed during the display process and the brand culture can be better promoted.
5. Discussion

Digital media art is virtual, and the biggest feature of digital media art is digital. The virtuality of today's media art is achieved through the pervasiveness of computers in everyday life, helping realize the wider world. At the same time, the continuous development of computer technology has created a whole new movie world. Digital media art is commonly used in the shooting and production of film and telefilm. The application of digital media art in these fields can be excellent in shooting different scenes and effects. In movies, digital technology is used to create new scenes and virtual environments that do not exist in real life.

From visual communication to interactive art, from two-dimensional plane to three-dimensional, from printing art to an interactive display, from traditional to avant-garde, behind the development of information communication is the huge influence brought by the progress of science and technology. The development of new media interactive art has opened a new horizon for visual communication design [22]. No matter what field it is in, good works need to be integrated into emotions, and through humanized design, the original intention of creation can be restored to the maximum extent.

Network media is centered on digital technology, which has a huge impact on the design methods and thinking in visual communication design. It makes the design no longer limited to the two-dimensional plane composition, the organization structure, time, and movement of the three-dimensional space are also added to the visual elements, and the content layout also develops from static to dynamic and interactive layout. In such a design environment, the design forms that can bring people visual stimulation and aesthetic experience have attracted much attention. The expression of visual space in digital media art is also full of creativity.

The design of the subtitles fully emphasizes the visual art of the film. The design of subtitles is an important content and part of a movie. It is a form of expression in visual art that expresses aesthetics and emotions and expresses personal emotions independently. Subtitles can convey theatrical content through visual arts images and can also broadcast TV content without sound.

6. Conclusion

Digital copying has become the dominant copying method. Music and sound can be synthesized by computer, not only to restore the original high-quality sound effect but also to avoid the noise produced by existing external sound receiving equipment. Not only has the digital audio processing method become an important term to reflect the feeling of replacing the visual image, but the priority sound also tightly controls the rhythm of the plot while giving designers more creative space. The main communication method in the context of digital media is visual communication, which is different from other communication methods. The dissemination of visual arts is a new way of disseminating information. Therefore, the dissemination of content will be richer, more complete, expressive, and attractive. Different from the traditional visual art communication methods, the visual art in the digital media environment has very important characteristics, which are mainly manifested in the visual art communication under the background of digital media represented by digital equipment and communication. Therefore, the dissemination of visual arts has the characteristics of media, and the dynamic characteristics of the transmitted media become more obvious. Digital media can innovate and develop display art from different perspectives, jointly improve the level of China’s display industry, make the application of display design innovative and develop, and make the specific practical research of display design rise to comprehensive theoretical research. Ultimately, the application development of the display industry and other industries will be promoted through the development of digital media art.

Data Availability

No data were used to support this research.

Conflicts of Interest

The authors declare that they have no potential competing interests in our paper.

Authors’ Contributions

All authors have read the manuscript and approved for publication.

References