Innovative design analysis of visual communication based on digital technology

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Abstract: The rapid development and popularization of digital technology has an increasing influence on the design industry. Digital technology not only expands the designer's expression and innovation space,but also improves the design efficiency and quality.In the digital age,the innovative design of visual communication based on digital technology has become an indispensable part of the design field.This paper will analyze the innovative design of visual communication based on digital technology from three aspects:the influence of digital technology on designers,the application of digital technology in visual communication innovative design,and the future development direction of digital technology in design.

Key words: digital technology; visual communication; innovation; design;application

Introduction:The development of the digital era makes visual communication design no longer limited to the form,and contains more rich and full feelings.The digital era has brought new opportunities and vitality to visual communication design,and promoted the development and reform of visual communication design.The application of digital technology in visual communication and innovative design not only provides designers with more intuitive,diversified and immersive visual effects,but also brings more intelligent and personalized design solutions.

1 The impact of digital technology on designers

1.1 Enrichment and diversity of authoring tools and platforms

Digital technology provides designers with a more rich and diverse creative tools and platforms.For example,designers can use computer-aided design(CAD)software for graphic design and product design,use three-dimensional modeling software for virtual design and physical production,use animation production software for dynamic design and creative performance,use virtual reality technology for hologram display,and so on.The emergence of these digital tools and platforms can not only optimize the efficiency and quality of design,but also give designers more creative freedom and imagination space.

1.2 Convenience and efficiency of digital collaboration

Digital technology allows designers to work with teams more easily and efficiently.Through the digital collaboration platform,designers from different regions and different backgrounds can complete the project together,and at the same time,they can communicate immediately,improve the communication efficiency,and reduce the error rate.Digital collaboration also enables designers to achieve collaborative creation in design,give full play to the wisdom of many people,and provide more possibilities and innovation directions for design.This digital collaboration method not only improves the efficiency and quality of the design,but also enables the designers to gain more opportunities to learn and grow in the collaboration.

1.3 Intelligent and personalized design direction and ideas

The intelligent and personalized characteristics of digital technology also bring brand-new possibilities and innovation directions for designers.Digital tools can help designers quickly analyze data,access information,and enhance decision-making capabilities,while digital platforms can make personalized recommendations based on users'interests,preferences,and behaviors.This intelligent and personalized feature provides designers with more intelligent design solutions and more close to the needs of users.For example,digital technology can help designers more accurately analyze the market and user needs,and provide more personalized and targeted design solutions[1].

2 Application of digital technology in innovative design of visual communication

2.1 3D Design technology

3D design technology is an important application field of digital technology in visual communication design.By using digital modeling tools,it can help designers quickly produce highly realistic product models and visual effects,so as to achieve a more attractive and three-dimensional visual communication effect.Designers can use 3D modeling software,such as SketchUp,Revit,and AutoCAD,to build building models and scenes,and to modify and optimize them. Through digital modeling tools,designers can quickly produce product models and visual effects with a complex structure and stereoscopic sense.The 3D design technology allows designers to better express their ideas and turn their design imagination into real objects and scenes.

The Coex Comprehensive Shopping Building is located in the center of Times Square,Gangnam District,Seoul,and is one of the centers of K-pop culture in South Korea.The shopping building has an 80.9 meter wide and 20.1 meter high LED screen billboard,playing various K-pop music videos for years.This year,digital design firm d'strict produced a bare-eye 3D artwork called Wave,which was displayed on the LED-screen billboard. Through the 3D misvision effect of naked eyes,the L-shaped screen visually becomes a transparent water tank,which presents the effect of turbulent water waves,which brings a strong sense of visual impact to the audience.The advent of Wave has attracted global attention,and it has made the Coex complex one of the most popular destinations for tourists,especially K-pop fans.As shown in Figure 1.

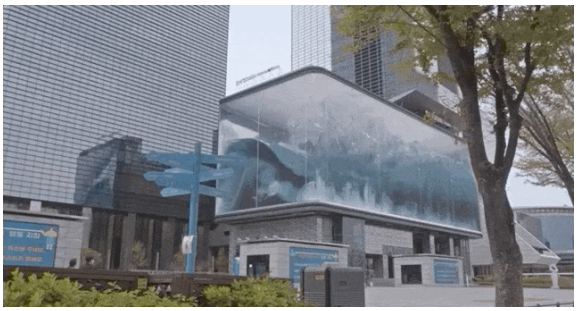

Figure 1 LED of Coex comprehensive shopping building

In interior design,3D design technology can help designers to better simulate the spatial layout,color collocation and furniture placement,so as to provide a more intuitive design effect. Designers can use 3D modeling software to create interior design models,which can rotate,shift and zoom scenes to view the design at different angles.In addition,3D design technology can also help designers in lighting design and material selection to better reflect the design concept and atmosphere.

In product design,3D design technology can help designers to better show the appearance and function of the product,in order to better display its characteristics.Designers can use 3D modeling software to create product models and rendering effects,making the product more attractive and competitive.

In game design,3D design technology can be used to create game characters and scenes,providing a more immersive and interactive gaming experience.Designers can use 3D modeling software to create game scenes and characters,which can add animations and effects to better show the charm and fun of the game[2].

2.2 Virtual reality technology

Virtual reality technology(Virtual Reality,VR)is a digital technology that simulates real scenes.In the visual communication and innovative design,VR technology can provide designers with more design ideas and forms of expression.Designers can use virtual reality technology to create various visual effects,allowing users to more intuitively feel the features and features of the product.Users can enter the virtual scene through a head-mounted display or other devices to experience the appearance,function and operation mode of the product.In architectural design,designers can use VR technology to project the building model into the virtual scene,and users can enter the building scene through the virtual reality equipment and feel the characteristics of space and materials.

In terms of product design,virtual reality technology can help designers to test and verify the product design at an earlier stage,find out and solve potential problems in advance,and shorten the product development cycle.For example,Trya Srl has launched a mobile app called Snapfeet,which claims to use 3D biometric scanning technology with both feet,allowing consumers to virtually try their shoes on.According to the company,the app scans shoppers for foot features and recommends shoe sizes and models best for customers.

In terms of exhibition design,virtual reality technology can help designers create more immersive and interactive exhibition effects.For example,using virtual reality technology can combine the real environment and virtual elements to make visitors feel an immersive exhibition experience.This exhibition form is suitable for a variety of exhibition types,including science and technology,art,museum,etc[3].

VR technology is also widely used in education.Designers can use virtual reality technology to create a more interesting and interactive educational experience.For example,virtual laboratory can help students better understand experimental principles,and virtual roaming can help students better understand history and culture.

2.3 Augmented Reality technology

Augmented reality is a digital technology that can combine virtual elements with real-life environments to create more immersive and interactive visual effects.This means that by using augmented reality technology,virtual objects can be seen in the real world.

In advertising,augmented reality technology can help marketers attract more attention by embedding the avatar of the product into the actual environment.For example,L'Oreal is compared with Perfect Corp.The partnership to integrate its makeup collection into the YouCam Makeup app,bringing new challenges to consumers'traditional beauty product discovery,trial and purchase. The latest research shows that testing ability is crucial for today's beauty shoppers,especially for millennials who are keen about contouring,gloss and concealer.L'Oreal together with Perfect Corp. The establishment of partnerships enables consumers to easily try out makeup at the beauty counter or at home or on the road,etc.The iPad is widely used as a makeup test tool.

In interior design,augmented reality technology can help designers and customers to better understand the design solutions. For example,designers can use augmented reality technology to place furniture or decorations in the actual environment,and allow the customer to directly see how these items work in the actual environment.This can help customers to better understand the design scheme and thus make decisions easier.

In museum displays,augmented reality technology can enhance the immersion and interactivity of the exhibits.For example,a museum can use augmented reality technology to create virtual characters or scenes,allowing visitors to interact with virtual elements to better understand the history and context of the exhibits.

2.4 Interactive design technology

Interactive design technology is another digital technology that aims to provide a better user experience and meet user needs. The main purpose of this technology is to create products and experiences that more closely meet users'expectations by engaging them in the design process,and through real-time feedback and adaptation.

In website design,interactive design techniques can help designers and developers create more engaging and easy-to-use websites.By adding interactive elements to the website,such as drop-down menus,buttons and sliders,it makes it easier for users to find the information they need.Operating and customizing products on digital platforms can also improve user satisfaction. For example,many e-commerce sites can allow users through the interactive design technology to customize the colors,sizes,and materials of their products to better meet customer needs.

In application design,interactive design techniques can help designers create more easy-to-use and effective applications.By adding interactive elements,for example,E asyPill is an intelligent medication reminder health product for the elderly,which uses lights to remind the elderly to take drugs on time,and can record

the medication situation and inform doctors and family members immediately.In addition,the EasyPill is also very carefully designed,the bottle can be magnetically attached to the plate,the plate will light on the medication time to remind the user which drug to take,all the Settings can be done through the"PillUp"App. EasyPill The data will also be uploaded to the database in real time,and the family member or doctor will be immediately notified in case of a medication error.EasyPill It will help the elderly to better manage their medication and protect the health of the elderly.

In game design,interactive design techniques can help designers create even more interesting and challenging games. By adding interactive elements,such as virtual keys,dynamic feedback,and multiplayer games.This allows users to experience the game deeper,and to increase their loyalty and reputation.

Interactive design technology plays a very important role in the design of digital products,which can make the products more attractive and easy to use,and enhance user satisfaction and loyalty.Designers can use interactive design technology to continuously improve the design according to users'needs and feedback,so as to create products and experiences more in line with users'expectations,and become an indispensable part of digital product design.

3 The future development direction of digital technology in the design

With the continuous development of digital technology,the future design industry will face more and more challenges and opportunities.Among them,the future development direction of digital technology in design includes cross-platform design,intelligent design,AR/VR technology,sustainable design,and social media design.

First,cross-platform design is an important direction of digital technology in future design.Designers need to have the ability to do cross-platform design to create a unified user experience across different platforms.This requires designers to design on different devices,for example,on mobile phones,tablets and televisions,the resolution,screen size,input mode and other factors are considered to create designs suitable for different devices.

Secondly,intelligent design is another future development direction of digital technology in the design.Using technologies such as artificial intelligence and machine learning,designers can create more intelligent design solutions that can provide users with a more personalized and satisfying design experience through the analysis of user data and behavior.

Third,AR/VR technology is also an important direction of digital technology in the future design.The development of augmented reality and virtual reality technologies have allowed designers to pay more attention to both immersive and interactive visuals.AR/VR technology can integrate virtual elements with the real environment,bringing users to a more realistic and immersive experience.

Fourth,Sustainable design will become an important trend in future design.Designers need to consider their environmental and social impact to create more sustainable products and solutions. Designers need to use environmentally friendly materials,optimize the product life cycle,improve resource utilization,and other ways to create design works that meet the environmental and social needs.

Finally,with the increasing popularity of social media,social media design will also become an important trend in future design.Designers need to combine products or services with social media,promote and promote products or services through social media platforms,and optimize their exposure and user engagement[4].

The development direction of digital technology in the future design will be more diversified and intelligent.Designers need to keep learning and adapt to these changes to stay competitive in the industry and create better design works.

4 Conclusion

To sum up,in the background of today's digital age,the wide application of digital technology enables designers to cooperate with teams more conveniently and efficiently,reducing the limitation of time and space,and providing more flexible and diversified possibilities for the realization of visual communication design. At the same time,the intelligent and personalized characteristics of digital technology also bring a new possibilities and innovation direction for visual communication design.In short,the digital age has injected new vitality into visual communication design and promoted the continuous progress and development of visual communication design.

Reference

[1]Luo Shijian,Wang Yao,Zhong Fangxu,et al.Digital development and dissemination strategy for innovative design of translated cultural genes[J].Journal of Zhejiang University(Humanities and Social Sciences edition),2023,53(01):5-18.
[2]Zhang Yi.Communication and application of visual Design in news communication[J].News Research Guide,2022,13(07):133-135.
[3]Jiang Zhili.Research on the Art and Design of Visual Communication in the New Media Era[J].Footwear process and design,2022,2 (06): 33-35.
[4]Thin stone.Analysis of visual communication design under the impact of new media art design[J].China New Communicatio ns,2021,23(19):104-105.