The introduction and application of panoramic photography technology in the media professional practice projects

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Abstract. Panoramic technology is a new visual technology that develops rapidly and gradually popular around the world, which can bring people a new real sense of scene and interactive feeling. Introduce panoramic photography into the practice project of journalism and communication in universities is of some pioneering significance for training high-quality media talents that meet the needs of the society. This article expounds the object, realization form and achievement of panoramic photography teaching; focusing on the main contents, reform objectives to be realized and shooting process and method.

Keywords: news communication; panoramic photography; practical teaching.

Experimental teaching system is one of the important tasks of curriculum teaching. The Ministry of Education of the People’s Republic of China has issued a document that experimental teaching should "start from the whole talent training system, establish a scientific and systematic experimental teaching system with ability training as the main line, hierarchical and multi-module connection, which can be organically combined and relatively independent with theoretical teaching". Therefore, the design of experimental teaching courses should aim at cultivating high-quality talents, which keep pace with The Times, combine theory with practice closely, and set up experimental teaching projects scientifically and reasonably. Combined with the current practical needs of journalism and communication majors, it is necessary to introduce panoramic photography practice projects in the media practice teaching.

Panoramic photography is one of the photography techniques, also known as wide-width photography, usually divided into cylindrical panorama and 360 panorama (or spherical panorama). The cylindrical panorama is the horizontal picture around the column surface; the spherical panorama or cube panorama to the scene space.[1] That is, the use of professional panoramic camera or camera in the panoramic head of the camera scene in any direction of the scene, and then use professional video software to seamlessly combine the pictures, and through the computer digital output for 360 panoramic landscape map (Panoramic). Finally, the panorama is released on the network platform, and the two-dimensional plane image is simulated into a three-dimensional space effect, with a unique perspective effect and a strong sense of scene. The viewer can rotate and watch the scene on the electronic display. The synthetic roaming system of multiple 360-degree panoramic pictures can realize multi-angle viewing, virtual roaming and interaction, which can intuitively reproduce the real environment of the scene and have certain artistic appreciation value.[2]

1. Widespread application of panoramic photography in the society: the significance of introducing panoramic photography teaching

Since the new century, with the progress of science and technology, especially with the development of computer technology, Internet technology and photography, especially the rise of 5G communication network, panoramic photography with its comprehensive three-dimensional vision, relatively novel interactive forms, with virtual simulation equipment, realize the characteristics of the ideal immersive experience, widely used in all walks of life. Panoramic
photography has a wide range of applications: panoramic photography is widely used in the field of map navigation, the most typical is baidu map panoramic street view, Google map panoramic street view, etc. Panoramic photography is also widely used in tourism, such as scenic spot publicity, scenic spot tour, online tourism, etc., and panoramic scenery of life in tourism. Panoramic photography is widely used in real estate marketing and publicity, such as panoramic shooting in construction engineering, decoration process model panoramic shooting, panoramic shooting in construction site, etc. Panoramic photography is widely used in VR image production, such as panoramic photography in movies and television. Panoramic photography technology is widely used in virtual museums, library virtual tour, etc. Panoramic photography is also used in news reports and advertising. In addition, panoramic photography is also widely used in a variety of live events. Drone aerial photography also lacks panoramic photography. Panoramic photography is used in all scientific exploration scenarios. Such a wide application puts forward practical requirements for university media majors to cultivate high-quality talents suitable for social needs to keep pace with The Times. However, at present, there is no panoramic photography course for journalism and communication majors in colleges and universities. Therefore, it is necessary to introduce panoramic photography project in the practical teaching of journalism and communication majors in colleges and universities to meet the actual needs of the society.

2. Introduce panoramic photography into the practical teaching project of journalism and communication major

2.1 Basic conditions and object-oriented conditions

To introduce panoramic photography into the practical teaching of journalism and communication major, its implementation should have certain basic conditions, and all participants must have certain basic knowledge and skills of photography and photography. That is to say, students participating in the project first need to take a basic photography course and have basic photography knowledge and skills. This project has a wide range of objects, breaking the disciplinary barriers and professional restrictions. It can include students of journalism, communication, radio and television, advertising, new media and other majors, and not limited to undergraduates, graduate students can also participate in it.

2.2 Project form

The implementation of this project will take the form of photography workshops or students' innovative experimental courses, and form a small team. After the subsequent construction has certain results, it will be promoted as professional compulsory courses or professional elective courses. The total number of photography workshop should be controlled within 30 people, divided into 6 groups with 5 members in each group. Students of all majors in media will apply voluntarily according to their own interests and hobbies. The students should be selected by the project teacher, and then the selected students will be combined into a photography group.

2.3 Achievement form

Each photography team according to the selected theme for preliminary shooting, after editing to form the final result. Its achievements are made in various forms, mainly including the following types:

2.3.1 Curation of panoramic photography.

After completing the creation of panoramic photography works, each group can hold an exhibition of panoramic photography works. The curation location can be in the college, school library, school museum and even school classroom buildings to fully display students' creative talents, so that teachers and students can appreciate students' works, which to have an understanding
of panoramic photography. Through the curation activity, the influence of panoramic photography teaching can be greatly expanded.

2.3.2 Panoramic video.

After the systematic learning of panoramic photography courses, students have initially mastered the basic knowledge of panoramic photography. They need to take the team as the unit, choose the theme, self-planning, shoot panoramic video materials, carefully select, make post-editing, and finally complete at least 5-10 minutes of panoramic video works.

2.3.3 Panoramic picture album.

The panoramic photography works produced by the students can also be gathered together to publish the picture albums.

3. Main contents of the panoramic photography practice course

Panoramic photography technology introduces practical teaching of media majors, mainly taking thematic shooting as its main content, which includes the following aspects:

3.1 Panoramic news and video shooting.

In recent years, with the rapid development of new media, the development of traditional media has been challenged. Correspondingly, the traditional news photography can not fully meet the current social public understanding of news and information, also cannot meet the needs of the development of new media, panoramic photography as a kind of "god", because of its three-dimensional three-dimensional space display ability, and is required by people, panoramic news photography developed on new media platform. The earlier media to use panoramic photography was Narada Network. In 2010, it launched the photography column "Nandu News 360", with eight columns: "News", "documentary", "life", "life", "Culture ", "Culture ", "Activities ", " Fashion ", " Nature " and " special ", presenting 360-degree panoramic photography according to the content.[3] In 2014, the Paper also launched the "panoramic scene", with the purpose of "360-degree panoramic sense of more rich news scene", irregularly launched the main body of rich panoramic photography, including the news scene. Panoramic news photography allows the audience to observe the environment of the photographer in all directions, so that they is immersive and get a real sense of scene. In addition, panoramic news live broadcast, panoramic documentary shooting are all important topics of panoramic news photography. For the students majoring in journalism and communication, the panoramic news photography is one of the important contents of the panoramic photography practice course.

3.2 Panoramic advertising images shooting.

Panoramic advertising photography is also one of the important contents of panoramic photography. For the practice of journalism and communication, especially the practice teaching of advertising, panoramic advertising photography should be an important knowledge. Panoramic advertising photography includes car advertising panoramic shooting, real estate advertising panoramic shooting, interior decoration advertising panoramic shooting, hotel panoramic display advertising shooting, tourism scenic spot advertising panoramic photography and other content.

3.3 Panoramic shooting of the museum's virtual display.

Museum panoramic photography is also an important part of the panoramic photography practice course. With the rapid development of photography technology and computer network technology, panoramic photography technology has begun to be applied in virtual museums. Using panoramic photography for panoramic museum, the museum pavilion, collection of comprehensive photography and digital release to the network, let the public through the computer client or mobile terminal to roaming to browse, viewing, which can effectively control the museum of material resources, human cost, and can improve the exhibition rate of cultural relics and its exhibition effect,
so as to pass more ancient history, traditional culture to the audience. At the same time, it also represents the development direction of digitalization and socialization of museums. In view of this, museum panoramic photography has also become an indispensable part for journalism major students to learn panoramic photography practice.

3.4 Panorama shooting of the library tour.

Another important content of panoramic photography is the panoramic photography of the library guide system. Library virtual navigation system and museum virtual display system, is using panoramic photography of its venues into panoramic images, released to the network, let the audience through mobile terminal, display terminal for multi-angle viewing, virtual roaming and interactive interaction, to get immersive immersive experience. Library-guided panoramic photography is also one of the most important topics for media students to learn panoramic photography.

3.5 Panoramic photography of tourism and sightseeing.

Photography is one of the most basic function is to record daily, memorial, with the rapid development of photography and communication technology, cameras and mobile phone communication equipment into the general public, photography is no longer unattainable, so daily travel, people always take their own feel down to commemorate. And to record events from a different Angle, panoramic photography is the best way. Tourism panoramic photography is also one of the essential projects in panoramic photography teaching.

3.6 Panorama shooting of map navigation.

Panoramic photography VR technology is widely used in the map navigation system, such as Baidu map navigation system, Autonavi navigation system, Beidou navigation system have applied panoramic photography technology. Map navigation panoramic shooting has become one of the important contents of panoramic photography teaching.

3.7 Panoramic shooting of cultural relics and buildings.

There are a large number of well-preserved ancient buildings with research value in China. In order to promote the protection of existing ancient buildings, panoramic photography can be used to reduce the pressure brought by the huge flow of ancient buildings, and also provide first-hand information for the restoration of later buildings. Panoramic photography of cultural relics and buildings is also the content of panoramic photography teaching.

3.8 Aerial aerial photography and panoramic photography.

At present, many small UAV aerial cameras on the market support taking panoramic photos, and drone aerial panoramic photography is also the content that media major students should master. It includes the use of drone teaching, panoramic shooting teaching and other content.

4. Reform objectives of the panoramic photography project

The reform objectives of introducing panoramic photography into media professional practice teaching are as follows:

First of all, we should follow the pace of social science and technology, integrate into the practical teaching of media major, and cultivate diversified and high-quality applied talents. Teachers should teach students new knowledge and skills of panoramic photography and learn how to apply it, mainly for panoramic photography methods and their post-production, and how to publish it and so on.
Secondly, panoramic photography is used to carry out multi-dimensional teaching reform of media professional photography practice courses, so that photography practice teaching is more innovative, creative and technological.

Thirdly, combine the panoramic photography curriculum and the school publicity work, introduce the panoramic photography for multi-dimensional teaching, better strengthen the school publicity work, and also provide new publicity means for the school recruitment work.

5. Practical method of panoramic photography

5.1 Hardware and software for shooting and production

At present, there are three main categories of photography equipment that can be used to shoot panoramic views, including high-end professional panoramic cameras, ordinary mobile phones, or professional SLR cameras and fish-eye lens. In addition, it should be equipped with cradle head and tripod as its auxiliary equipment. Because the advantages and disadvantages of various kinds of shooting equipment are different, we should choose the corresponding equipment according to the actual situation.

In this project, we choose to use insta360 shadow stone company professional VR panoramic camera insta360 stone Pro2, adopted the professional panoramic camera, is considering the professional equipment can bring the integration of efficient solutions, promote the VR image "taken cast show" the perfection of the whole process, let VR film and television production achieve one pace reaches the designated position. It combines multiple craftsmanship and production advantages, allowing the photographer to explore a VR exclusive lens language and create a new narrative technique. The camera also has an enhanced anti-shake function, with a professional anti-shake function, which can take a very smooth picture without an external stabilizer, which is an important advantage for panoramic shooting. It has 8K3D picture quality, professional level anti-shake, long-distance image transmission control, panoramic sound capture, upgrade of the post-production process, immersive player, so as to easily create a professional level panoramic image production mode.

In terms of software, it can first be used to manage and batch adjust the RAW original image files with Lightroom software, and then exported into lossless TIFF or compressed JPEG format image files for subsequent synthesis. Secondly, Photoshop is used for comprehensive image adjustment and pixel editing, which can further polish and add effects to the image derived by Lightroom, and can also be used to modify and finally adjust the generated panorama. Then use insta360's own panoramic splicing software Insta360 Pro STITCHER or PTGui professional panoramic photo splicing software to take the panoramic splicing and mix of the images, but also support the use of manual mode for careful adjustment. The Pano2VR software is then used to convert the generated plane spherical panorama into a format that can browse 360 degrees on the computer or mobile media device, and combine multiple panoramic images to generate panoramic roaming files, while combining the panoramic repair function. Finally, the 720 cloud website to release the panoramic roaming system and multi-terminal sharing display.[4]

5.2 Shooting and production process

The production process of panoramic photography can be generally divided into four steps: pre-preparation, live shooting, post-production and online release.

5.2.1 make first-phase preparations.

To take panoramic images, preparations must be done well. Before shooting, the shooting topic should be planned in advance, and the planning of the shooting schedule, scene scene and shooting project content should be made in advance. Generally speaking, the best time to shoot is usually in the morning or afternoon when the weather is fine, that is, 9:00-11:00 am and 3:00-5:00 PM. At this time, the light is sufficient, the visibility is high, the light and shadow effect is obvious, and the
material shot is very suitable for stitching. Also select the shooting location, such as the shooting panoramic system of the library, such as the main entrance, hall, reading room, etc., to fully display the overall layout of the library; and guide the project to fully reflect the real scene function and the use of the audience is the best. These preparations are all things to be fully considered before shooting.

5.2.2 Live shooting.

After the full preparation work, is the scene shooting. After inspecting the shooting site, the photographer should assign teams according to the division of labor plan to confirm the scene position for shooting. There are two main situations of panoramic photography, one is to shoot indoor scenes, the other is to shoot outdoor environment. Indoor shooting should pay attention to the lighting, outdoor shooting pay attention to the weather conditions, light strength, shutter speed as far as possible to avoid the phenomenon of shadow. After the shooting team shoots, it should also be checked to ensure that the images taken at a single point are complete and meet the requirements, so as to avoid the failure to synthesize panoramic images due to missing shooting or wrong shooting parameters. If any problem is found in the inspection, it should be taken in time. After the inspection is correct, the next post-production can be made.

5.2.3 post production.

Use general SLR camera or mobile phone and other devices for panoramic photography. In post-production, it is generally necessary to adjust the original image in Lightroom software to generate TIFF or JPEG format files for editing, and then use PTGui software to generate panoramic images, and finally use photshop for modification. In this project, due to the use of Insta360 Pro panoramic camera to shoot, the operation is very easy and simple, and the built-in Insta360 Pro STITCHER splicing software can easily be automatically splicing.

5.2.4 Posted online.

After the panorama is made, it will be released through the network. Generally, we can release panoramic works through the panoramic social networking website 720 cloud, cloud panorama, VR cloud, network exhibition (expo) and other platforms.[5]

6. Conclusion

Panoramic photography has been widely used in all walks of life, it has been used to show real estate, sightseeing attractions, map navigation, hotels, campus, cultural and sports venues, company office environment and so on. This extensive social demand will make panoramic photography have a great space for development. In order to adapt to this social demand, it is also necessary to introduce panoramic photography project in the teaching practice of journalism and communication major in colleges and universities. Integrating the panoramic photography project into the teaching practice of students majoring in media is an attempt to promote the reform and innovation of the experimental teaching of journalism and communication majors, and also a beneficial exploration to cultivate high-quality news and communication talents with strong adaptability to keeping pace with The Times.

References


