Hindawi
Security and Communication Networks
Volume 2022, Article ID 9790607, 1 page
https://doi.org/10.1155/2022/9790607

*Retraction*

# Retracted: Curriculum Design of Art Higher Vocational Education Based on Artificial Intelligence Assisted Virtual Reality Technology

**Security and Communication Networks**

Received 21 November 2022; Accepted 21 November 2022; Published 21 December 2022



*Security and Communication Networks* has retracted the article titled "Curriculum Design of Art Higher Vocational Education Based on Artificial Intelligence Assisted Virtual Reality Technology" [1] due to concerns that the peer review process has been compromised.

Following an investigation conducted by the Hindawi Research Integrity team [2], significant concerns were identified with the peer reviewers assigned to this article; the investigation has concluded that the peer review process was compromised. We therefore can no longer trust the peer review process, and the article is being retracted with the agreement of the editorial board.

## References

[1] Q. Cao, "Curriculum Design of Art Higher Vocational Education Based on Artificial Intelligence Assisted Virtual Reality Technology," *Security and Communication Networks*, vol. 2022, Article ID 3535068, 9 pages, 2022.
[2] L. Ferguson, "Advancing Research Integrity Collaboratively and with Vigour," 2022, https://www.hindawi.com/post/advancing-research-integrity-collaboratively-and-vigour/.

Hindawi
Security and Communication Networks
Volume 2022, Article ID 3535068, 9 pages
https://doi.org/10.1155/2022/3535068

*Research Article*

# Curriculum Design of Art Higher Vocational Education Based on Artificial Intelligence Assisted Virtual Reality Technology

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Received 27 January 2022; Revised 13 February 2022; Accepted 25 February 2022; Published 17 March 2022

Academic Editor: Muhammad Arif



In order to improve the effect of higher vocational art teaching, this paper applies artificial intelligence virtual reality technology to the art education design of higher vocational schools to improve the immersion of art education, change the traditional higher vocational art teaching mode, and effectively improve the efficiency of higher vocational art teaching. Furthermore, the teaching system's presentation of virtual reality algorithms has been enhanced. This paper elaborates the realisation process of the system's homework management function, virtual scene function, personal space function, resource management function, online examination function, and teacher-student communication function, which is primarily displayed in the form of interface diagrams and flowcharts, in the realisation of the state-of-the-art higher vocational education curriculum design system based on virtual reality technology. Furthermore, this work uses experimental research to verify the system's dependability. The results show that the art higher vocational education curriculum design system constructed in this paper based on artificial intelligence assisted virtual reality technology basically meets the needs of contemporary higher vocational art teaching and can effectively improve the art higher vocational education curriculum design.



## 1. Introduction

Higher vocational education is an important part of higher education and belongs to the category of higher education. The meaning is different from ordinary higher education. The main difference lies in their different training goals and different focuses. Technical, managerial, and service abilities are urgently required on the front lines of industry, and vocational education strives to nurture practical and skilled talents. Likewise, higher vocational talents must possess fundamental information, theories, and abilities compatible with higher education, as well as grasp new knowledge, technology, and craftsmanship. Furthermore, it differs from traditional higher education in that it emphasises strong practical skills and the capacity to assess and solve production challenges [1]. Tao Xingzhi famously said, "Curriculum is a tool for societal demands and personal aptitude modification." Given the purpose of vocational and technical education, the curriculum of higher vocational education should be job oriented, with the primary aim of cultivating the capacity to apply skills and strong knowledge of the training objectives via classroom instruction and practical training. Furthermore, it naturally combines and penetrates fundamental theory education, professional skill education, and humanistic quality education, beginning with the features of students' psychological and intellectual growth. Simultaneously, it prioritises the development of students' noble humanistic spirit and high quality for long-term usage, and it cultivates students as talents with strong foundation, exceptional skills, high quality, strong pertinence, and flexibility. In traditional education, each subject's curriculum is separated into two parts: professional basic courses and professional courses. [2]. In each part, the teaching purpose and teaching requirements of each course will be different. However, each course has a certain internal connection and a cohesive relationship between each other. This relationship is necessary, gradual, inherited, and inseparable [3].

A professional basic course is a foundational platform course in a certain sector. The fundamental topic knowledge that must be learned in this subject area is necessary, and it has the connotation of a particular broad understanding. On a human level, these fundamental courses are fundamentally and intimately tied to certain majors. They are the fundamental skills that must be gained in order to succeed in professional courses. This fundamental information is similar to a book. It directs readers to a preliminary comprehension of Ben's content summary and core concepts, much like the introduction. Possessing the necessary professional basic theoretical knowledge is not only a requirement for higher vocational talents to be qualified for today's technology-intensive positions but also the starting point for knowledge regeneration and transfer, further learning, and improvement in order to adapt to future job changes. The professional basis of art design is unquestionably the foundation that must be mastered by all design activities. It performs theoretical study and practical training based on the fundamental and significant problems that occur in numerous modelling domains as the goal. It is separated into two parts in terms of content: design foundation and design theory. Introduction to design, design history, design techniques, design material science, design psychology, design aesthetics, ergonomics, value engineering, marketing, technology, and advertising are all included in design theory.

We cultivate an excellent art design talent: it is necessary to master the performance skills of the major; it is necessary to master the methods of creative thinking; it is necessary to be familiar with various materials and crafts, it is necessary to cultivate the consciousness of society, economy, and the market; it is necessary to master modern design scientific and technological means that must also cultivate the humanistic spirit and aesthetic qualities. Although the task of the basic course of the art design major of higher vocational education is not as comprehensive as the above requirements, it is after all responsible for the qualities and abilities that students should have in their majors. It requires a broader caliber than professional courses and has its own complete system and goal-comprehensive quality training and various abilities.

In order to improve the effect of higher vocational art teaching, this paper applies artificial intelligence virtual reality technology to the art education design of higher vocational schools to improve the immersion of art education, change the traditional higher vocational art teaching mode, and effectively improve the efficiency of higher vocational art teaching.

## 2. Related Work

Because other nations do not have the same major as environmental art design, they must begin from a different point of view. In Europe, the United Kingdom is a pioneer in virtual reality research and development. The United Kingdom places a high value on the use of virtual reality technology in education and teaching. Newcastle-Upon-Type Middle School's instructional virtual reality technology initiative was the first in the UK and has a lengthy track record. Dimension international technology is used in this project, as well as dimension's virtual reality technology software suite [4]. Virtual reality technology has advanced to the point that it is no longer confined to interior or architectural landscape design in many industrialised nations. At this time, more research institutes and enterprises have recognised the potential of virtual reality technology and have jumped into virtual reality research and product development. Computer-aided design, education, graphics and imagery, various machine simulation control training, intelligent robots, entertainment and art, urban planning and design, real estate projects, architecture and cultural relics protection, medical and military exercises, and so on are just a few examples [5]. Virtual reality and three-dimensional holographic projection technologies will be combined to create more strong sensory experience. [6].

Virtual reality technology began to come out of the laboratory in the 1970s and was applied to the application market, and was unanimously favored by everyone. Therefore, individual countries in the world that have conducted VR research, especially developed countries, have taken the lead in conducting extensive research and discussion on related projects [7]. Some schools abroad have used VR equipment to do some remote teaching activities. Students' feedback is that in some courses, the effect of learning can be more concentrated due to the immersion in the process of using VR equipment. However, the conventional classroom teaching experience such as taking notes needs to be more technically perfect. However, it is understandable that if it is truly mature and applied, VR will bring breakthrough progress for practical operation and experimental teaching. Next, we will mainly introduce the research status of several representative countries in the developed countries, the United States, and Japan in the field of VR and the scientific and technological achievements they can provide for virtual reality teaching [8].

The tactile data glove was improved by NASA's Ames Laboratory, which improved the design and made it more robust. The Johnson Research Center accomplished the remote real-time simulated operation of the space station's exterior manipulator. NASA has established a virtual reality training system for routine maintenance of space capsules, satellite repair, and simulation VR training equipment for operations and life on the International Space Station as the highest authority in the US aviation industry and global aviation scientific research. It may also be utilised as a teaching data source to link to the national education system, which offers trustworthy facilities and technology for scientific popularisation education's space and space environment database [9]. NC State University's Department of Computer Science is one of many prominent science and engineering institutions in the United States that has previously undertaken scientific study and experimentation on virtual reality technologies [10]. Virtual modelling of specific physical molecules, chemical molecules, or microorganisms in a virtual environment, virtual driving of spacecraft in a virtual environment and in the aviation field, simulation training of physical surgery in the medical field, and building model modelling and simulation in the architectural field are their main research directions [11]. MIT, as a well-established research and engineering institution, cannot afford to be left behind. MIT is a forerunner in artificial intelligence, robotics, computer graphics, and animation research (ANIMATION). VR technology is built on these technologies [12]. MIT has established a related virtual reality media laboratory to conduct formal research on computer virtual environment simulation. Dr. David Val of Loma Linda University Medical Center and his research team successfully conducted several seminars on neurological diseases on computer graphics and headset virtual reality devices. Moreover, they pioneered the diagnosis and treatment of pediatric diseases based on VR technology [13]. Stanford University has conducted training research on military aircraft or vehicle driving using VR technology and tried to reduce accidents of abnormal causes in ordinary navigation through virtual reality simulation [14]. The HIT Lab of Washington University Technology Center introduced VR research into the fields of education, art design, media, and manufacture. Illinois State University has developed a VR distributed cloud collaboration system that supports remote design in conventional car design, which allows different designers to design the same car in a virtual reality environment [15].

Literature [16] discussed the potential and benefit of using virtual reality technology in education, stating that virtual reality may give learners with a virtual learning environment that is identical to the actual one. Virtual reality technology instruction has opened up new opportunities for art education after learning and recording. Using analogous virtual technologies, literature [17] has produced exceptional outcomes in chemical tests. Chemistry students may study chemical experiments in the chemical virtual training room by building a highly realistic interactive operation and a powerful chemical virtual training room. Every step of the chemical experiment is simulated. Virtual technology is used in literature [18] to create and build physics experiment teaching systems, physics simulation experiment software, and other physics-related products. The created and manufactured university physics simulation experiment programme is quite effective. Students may carry out experimental learning according to the real conditions of a physics experiment by using the program. Recognizing and controlling experimental equipment in software, understanding experimental material, and gaining instructor help are all beneficial to the study of physics experiments and increase students' enthusiasm in learning.

## 3. Application of Virtual Reality Technology in Art Teaching Courses

The beam forming process in virtual reality imaging can control the beam propagation direction and sensitivity of the virtual reality transducer array, and the quality of beam forming directly determines the image quality of virtual reality imaging. The most widely used beamforming algorithm is delay and sum (DAS) beamforming. The echo signals received by each element of the virtual reality transducer are delayed correspondingly and then summed and synthesized for imaging so as to achieve precise focusing on the target area. Taking the DAS beamforming algorithm as an example, this paper briefly studies the basic principles of virtual reality imaging beamforming, as well as common beamforming control methods such as deflection and focus, dynamic aperture, and amplitude apodization. Finally, this paper uses the Field II platform to carry out further simulation analysis of the above methods.

The classic DAS beamforming technique is the most extensively used in virtual reality imaging because it has simple calculations and rapid imaging speed. There are two image focusing modes in the DAS algorithm: transmitting focus and receiving focus. The quick imaging criteria cannot be reached if all locations on the sound beam axis are transmitted and focused inside the target imaging region, and it is not practical in engineering. As a result, DAS beamforming is primarily a receiving focus mode. By modifying the delay parameters of various array components, DAS beamforming accomplishes the translation and deflection of the virtual reality beam, then achieves accurate focusing at the focus point, and then realises the imaging of the target region. The mechanism of DAS beamforming is shown in Figure 1 using a transducer array with seven receiving elements as an example [19].

Among them, S(t) is the reflected echo signal from the focal point and $S_{\mathrm{DAS}}(t)$ is the beamforming signal after DAS processing. Taking the linear array in Figure 1 as an example, the principle of DAS beamforming is to calculate the corresponding propagation time difference according to setting the focus point and the geometric position of each element in the array, and to set the corresponding delay time for the echo signal received by different elements, and then to superimpose the echo data of each array element after delay according to the superimposition of the virtual reality signal to obtain the DAS beamforming signal for imaging. When selecting any independent element, the calculation principle of the delay time of the element is shown in Figure 2 [20].

In Figure 2, taking the $i$-th array element as an example, the distance between the target point and the array element is $r_1$, the distance between the target point and the center of the array element is $r_2$, and the distance between the array element and the center of the array element is $x_i$. Then, the relative sound path difference between the $i$-th array element and the center of the array element is $\Delta S = r_1 - r_2$. Therefore, the delay time that should be set for the $i$-th array element is [21]

$$\tau_i = \frac{\Delta S}{c} = \frac{r_1 - r_2}{c}. \quad (1)$$

According to the law of cosine, the delay time $\tau_i$ can be decomposed into focus delay time $\tau_i{}^f$ and deflection delay time $\tau_i{}^s$. Its mathematical definitions are represented by formulas (2) and (3):

$$\tau_i{}^f = \frac{r_2 - x_i \sin\theta - \sqrt{x_i{}^2 + r_2{}^2 - 2r_2 x_i \sin\theta}}{c}, \quad (2)$$

$$\tau_i{}^s = \frac{x_i \sin\theta}{c}. \quad (3)$$

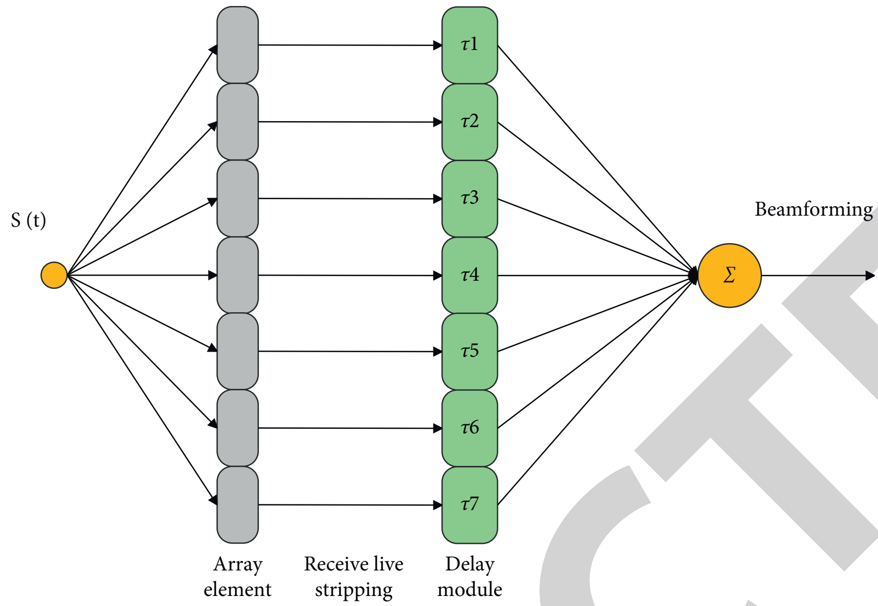


FIGURE 1: Principle diagram of DAS beamforming algorithm.

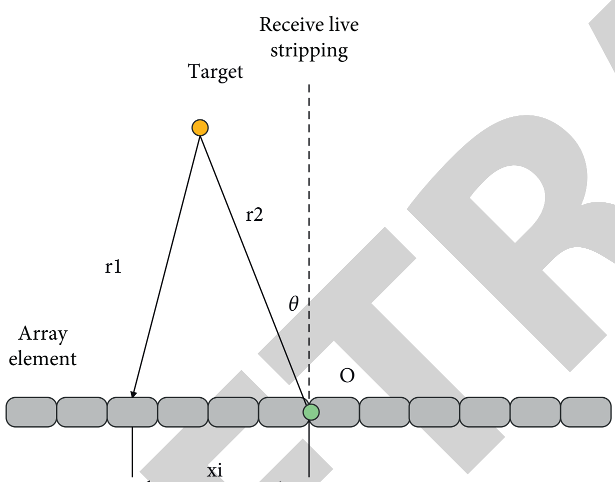


FIGURE 2: Principle of delay time calculation.

Therefore, the beamforming signal after DAS processing can be expressed as

$$S_{\mathrm{DAS}}(t) = \sum_{i=1}^{N} S_i\left(t - \frac{r}{c} - r_i\right) = \sum_{i=1}^{N} S_i\left(t - \frac{r}{c} - r_i - \tau_i^{\ s} - \tau_i^{\ f}\right). \tag{4}$$

Here, N is the number of array elements, $r$ is the distance between the focus point and the array element's center, and $c$ is the virtual reality wave's sound velocity.

In the actual application procedure, virtual reality imaging must photograph the complete target region. To obtain accurate focus on the full target region, it is required to manage the transmission and reception of virtual reality signals. Focusing and deflection control, dynamic aperture and amplitude apodization, and other beamforming control techniques are used.

The calculation principle of the delay time parameter points out that adjusting the focus delay time $\tau_i^{\ f}$ and the deflection delay time $\tau_i^{\ s}$ of each element of the transducer can realize the focus and deflection of the virtual reality beam in the target area. Among them, the specific principle diagram of the focusing and deflection of the virtual reality beam during the launching process is shown in Figure 3. According to Huygens' principle, the transmission and reception processes of virtual reality beamforming are mutually different. It can be seen that the principle of focusing and deflection of the virtual reality beam in the receiving process is similar to that in Figure 3.

Fixed-point focus, dynamic focus, and segmented dynamic focus are the most common beam forming focus control methods; the difference is whether one or many focus points are concentrated throughout the transmission and reception processes, respectively. In both the transmitting and receiving operations, the fixed-point focusing technique focuses on just one point, and the focus sites in the two processes are unrelated. Although the technology is easy to use, the picture quality is poor. The segmented dynamic focusing method divides the imaging area into near field, mid field, far field, and even more intervals, focusing on one interval at a time during transmission and multiple focal points in the interval during reception to produce a uniformly stitched image with clear resolution. However, this approach has poor real-time performance, it is very difficult to apply, and the number of interval segments should not be excessive.

Therefore, the dynamic focus technology is selected in this paper; that is, fixed-point focus is adopted during the transmission process, and multipoint dynamic focus is adopted in the imaging area during the reception process. Compared with fixed-point focusing and segmented dynamic focusing methods, this focusing method has higher

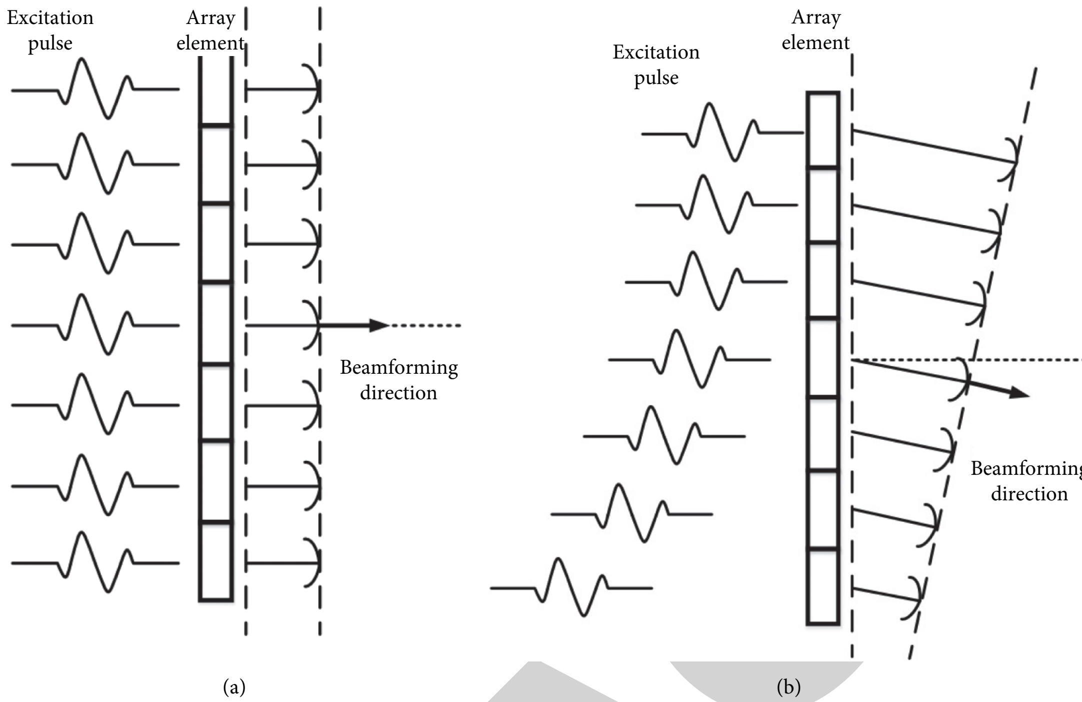


Figure 3: Principle diagram of virtual reality beam focusing and deflection. (a) Focusing, and (b) deflection.

engineering implementation complexity and image clarity. The principle diagram of dynamic focus is shown in Figure 4.

The effective aperture concept underpins the dynamic aperture approach. The fundamental concept is to turn on a proportionate amount of array members based on the focus point's depth. Until all of the receiving array elements are switched on, the deeper the focal point, the more receiving array elements are turned on, and the greater the effective aperture. Figure 5 depicts the dynamic aperture method's unique operating concept.

The application advantages of the dynamic aperture method in beamforming are mainly reflected in the following three aspects: First, it improves the resolution of near-field imaging. Since there are multiple focal points with fixed focal lengths in the dynamic focusing process, a certain transition distance should be reserved between adjacent focal points to reduce the influence of focal length changes on the beamforming quality. With the introduction of the dynamic aperture method, the diffusion angle of the small-size aperture is reduced during near-field imaging, which increases the near-field focal length, thereby improving the transitional interference. The second is to reduce the amount of delayed storage. When receiving virtual reality echo signals in the near-field imaging area, a smaller effective aperture is used, and the unopened array element is not required because the maximum delay time of the linear array of virtual reality transducers is proportional to the square of the effective aperture size that is turned on. The time delay is calculated. The final step is to narrow TGC's control range. TGC can compensate for the energy loss produced by the increase in detecting depth during the virtual reality wave detection process. The energy difference between the near and far-field virtual reality echo signals is decreased in the dynamic aperture approach due to the difference in effective aperture size, and therefore, the control range of the TGC is lowered, which is more suitable to practical engineering applications.

Due to the directivity and superposition, the energy distribution of the beam emitted by the virtual reality transducer in the detection space is not uniform. Ideally, if each element of the virtual reality transducer receives the same delayed pulse excitation signal, it will perform equal amplitude coherent superposition in the detection space to form an inherent beam sidelobe of −13 dB, which seriously affects the quality of DAS beamforming. Using the amplitude apodization method can improve this problem. By applying a fixed window function to weight the amplitude of each array element during the transmitting or receiving process of the virtual reality transducer array to increase the beam amplitude of the center array element and reduce the beam amplitude of the edge array element, it can significantly reduce the sidelobe level of the virtual reality beam. Taking the launching process as an example, the specific working principle of the amplitude apodization method is shown in Figure 6.

In the actual virtual reality imaging digital beamforming process, the fixed window functions applied to the amplitude apodization weighting mainly include Hanning window, Hamming window, and Blackman window. The mathematical expressions are shown in formulas (5)–(7), respectively.

Hanning window:

$$w(n) = 0.5\left[1 - \cos\left(2\pi \frac{n}{N-1}\right)\right], \quad n = 0, \ldots, N-1. \tag{5}$$

Hamming window:

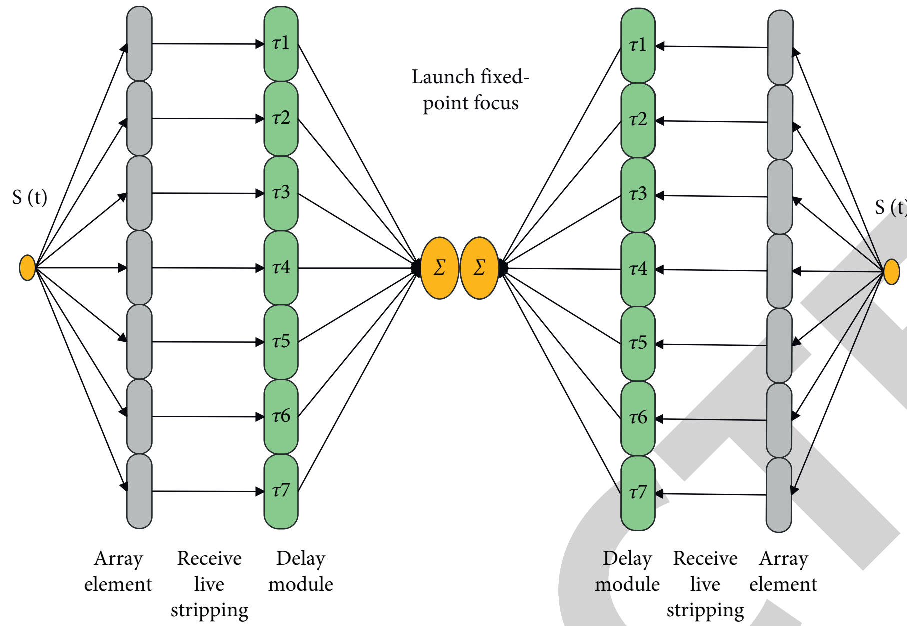


FIGURE 4: Schematic diagram of dynamic focus.

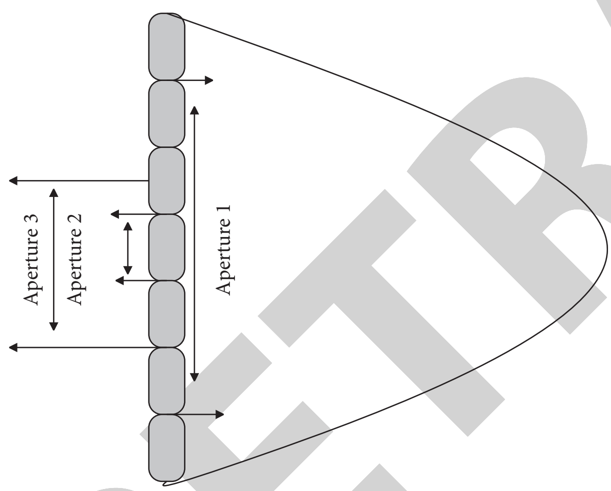


FIGURE 5: Schematic diagram of dynamic aperture.

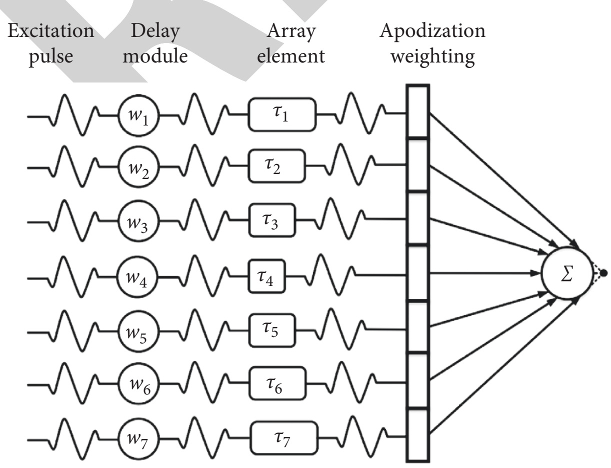


FIGURE 6: Schematic diagram of apodization.

$$w(n) = 0.54 - 0.46\cos\left(2\pi\frac{n}{N-1}\right), \quad n = 0, \ldots, N-1. \tag{6}$$

Blackman window:

$$w(n) = 0.42 - 0.5\cos\left(2\pi\frac{n}{N-1}\right) + 0.86\cos\left(4\pi\frac{n}{N-1}\right), \quad n = 0, \ldots, N-1. \tag{7}$$

Among them, $n$ is the sequence number of the array element and N is the number of the array element.

The sidelobe level of the virtual reality beam may be efficiently lowered by using the amplitude apodization technique to apply a fixed window weighting coefficient to each element of the virtual reality transducer, but the main lobe width of the virtual reality beam also rises. To put it in another way, although the DAS digital beamforming algorithm using the amplitude apodization approach enhances imaging contrast, it sacrifices imaging resolution. Various amplitude apodization window functions have different optimum apodization depth and beam width. The employment of segmental apodization technology in actual engineering applications may compensate to some degree for the resolution deterioration produced by the amplitude apodization of the fixed window function.

This study simulates the DAS beamforming algorithm using the Field I virtual reality simulation experiment platform of MATLAB 2018b in order to more intuitively examine the effect of the aforesaid beamforming control strategies on the quality of DAS digital beamforming. In this study, several amplitude apodization window functions are used with dynamic focusing and dynamic aperture approaches to compare and evaluate the imaging outcomes of point objects.

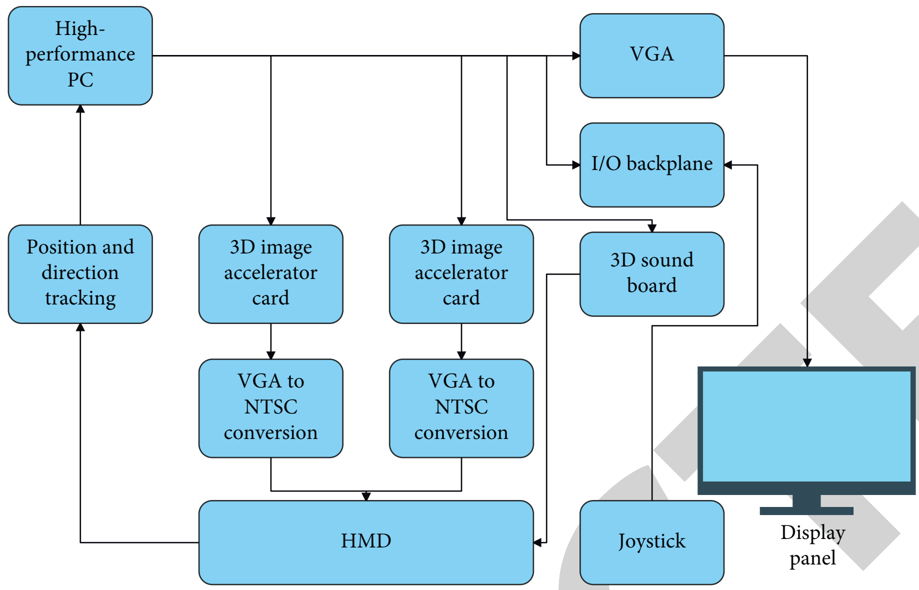


FIGURE 7: Schematic diagram of system architecture design.



At the focal point, the amplitude apodization method has an obvious compression effect on the sidelobes of the virtual reality beam, but the width of the main lobe is increased, especially the Blackman window. The first sidelobe peaks of various apodization methods are similar, so the amplitude apodization effect of the Hanning window and the Hamming window on DAS beam forming is better than that of the Blackman window.

The ratio of the contrast to the standard deviation of the background area can further characterize the ability to detect sound-absorbing spot targets. The larger the value, the higher the imaging quality of the sound absorption spot, and its mathematical expression is

$$\mathrm{CNR} = \frac{20 * \lg(\mu_B) - 20 * \lg(\mu_C)}{\sqrt{\sigma_B^2 + \sigma_C^2}}. \tag{8}$$

If the signal or the final image needs to be reconstructed during the virtual reality imaging process, the mean squared error (MSE) parameter is often used to characterise the difference between the reconstructed image and the original image. The smaller the MSE value, the better the reconstruction effect, and its mathematical definition is

$$\mathrm{MSE} = \frac{1}{NM} \sum_{i=1}^{N} \sum_{j=1}^{M} \left(x(i,j) - \hat{x}(i,j)\right)^2. \tag{9}$$

Among them, $x(i,j)$ is the original image element, $\hat{x}(i,j)$ is the reconstructed image element, $i$ and $j$ represent the size variables, and $N$ and $M$ represent the image size.

## 4. Art Higher Vocational Education Curriculum Design System Based on Artificial Intelligence Assisted Virtual Reality Technology

The art higher vocational education curriculum design system based on artificial intelligence assisted virtual reality technology must not only have basic teaching functions but also realize the real-time interaction between man and machine, and the performance requirements of the system are relatively high. With the continuous development of science and technology, the cost performance of personal computers is getting higher and higher, and many application systems choose high-performance PCs to support system operation. Figure 7 intuitively describes the deployment and application operating principles of the virtual reality system in a high-performance PC.

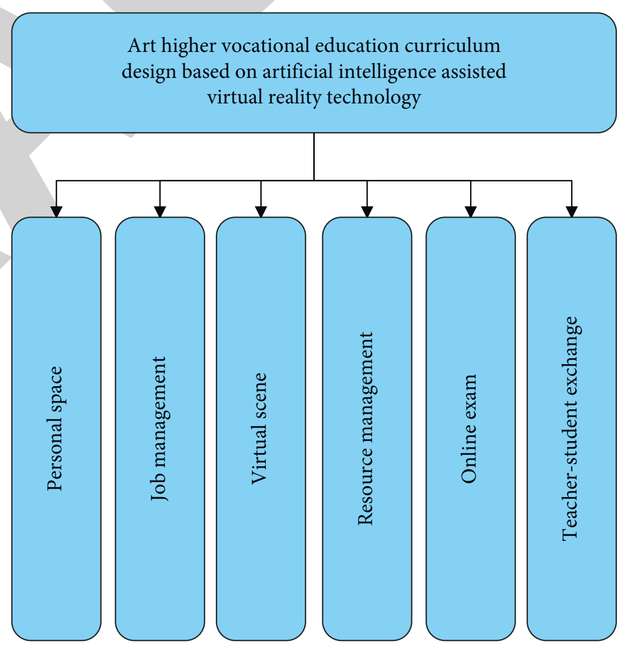


FIGURE 8: Schematic diagram of system function module design.

When designing the various functional modules of the art teaching system based on virtual reality technology, we must first determine the functional module

Table 1: Performance evaluation of art higher vocational education curriculum design system based on artificial intelligence assisted virtual reality technology.

| Number | Immersion effect | Design effect | Teaching effect | Number | Immersion effect | Design effect | Teaching effect |
|---|---|---|---|---|---|---|---|
| 1 | 86.45 | 89.51 | 91.58 | 16 | 88.01 | 82.54 | 88.63 |
| 2 | 87.02 | 91.27 | 87.90 | 17 | 90.81 | 90.86 | 95.71 |
| 3 | 88.06 | 89.18 | 92.24 | 18 | 90.44 | 83.15 | 87.67 |
| 4 | 92.19 | 84.77 | 90.68 | 19 | 89.73 | 89.25 | 94.79 |
| 5 | 93.81 | 85.33 | 89.24 | 20 | 89.37 | 89.28 | 85.25 |
| 6 | 88.85 | 85.99 | 93.39 | 21 | 92.26 | 91.66 | 90.49 |
| 7 | 92.28 | 83.98 | 94.47 | 22 | 87.37 | 83.15 | 93.32 |
| 8 | 91.48 | 87.89 | 86.75 | 23 | 87.38 | 82.91 | 95.77 |
| 9 | 90.49 | 86.14 | 92.80 | 24 | 89.16 | 86.46 | 91.46 |
| 10 | 88.31 | 84.57 | 91.73 | 25 | 89.98 | 86.42 | 95.93 |
| 11 | 90.05 | 88.67 | 88.02 | 26 | 86.11 | 84.31 | 86.71 |
| 12 | 87.06 | 84.17 | 88.23 | 27 | 90.64 | 83.71 | 86.35 |
| 13 | 86.92 | 85.26 | 93.69 | 28 | 90.06 | 86.05 | 95.35 |
| 14 | 86.66 | 85.35 | 93.10 | 29 | 86.62 | 82.48 | 95.41 |
| 15 | 93.07 | 91.70 | 89.32 | 30 | 86.99 | 86.99 | 95.99 |

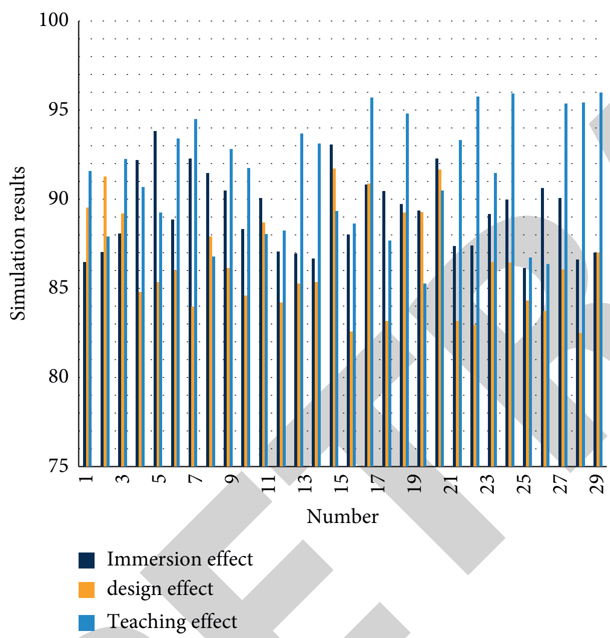


Figure 9: Statistical diagram of simulation test results.

structure of the system. The detailed content is shown in Figure 8.

Following the development of a state-of-the-art higher vocational education curriculum design system based on artificial intelligence assisted virtual reality technology, the new system's performance is verified, and the analysis is conducted from three perspectives: immersion effect, design effect, and teaching effect. The results are given in Table 1 and Figure 9.

From the above research, it can be seen that the art higher vocational education curriculum design system based on artificial intelligence assisted virtual reality technology constructed in this paper basically meets the needs of contemporary higher vocational art teaching and can effectively improve the art higher vocational education curriculum design.

## 5. Conclusion

Through the application of virtual reality technology in teaching management, it can not only provide students with a variety of scenarios for teaching design but also allow students to communicate in real time so that students and teachers can learn from each other through the network anywhere. Moreover, the teaching application of virtual technology is an innovation, which has solved some problems existing in the traditional teaching mode. In the realisation of the art teaching system based on virtual reality technology, this paper elaborates the realisation process of the system's homework management function, virtual scene function, personal space function, resource management function, online examination function, and teacher-student communication function, which is mainly displayed in the form of interface diagrams and flowcharts. Finally, this paper verifies the reliability of the system constructed in this paper through experimental research.

## Data Availability

The data used to support the findings of this study are included within the article.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

## Acknowledgments

This paper is the general project of Guilin University of Technology 2019 special research project on the theory and practice of innovation and entrepreneurship education, "the construction and research of curriculum system of art and design in higher vocational high school class based on the background of innovation and entrepreneurship education" stage results, project no. GUT2019CY12.

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