Advances in Educational Technology and Psychology (2021) 5: 156-162
Clausius Scientific Press, Canada
DOI: 10.23977/aetp.2021.54021
ISSN 2371-9400

Multimedia Technology and Application Course Based on Application Talent Training Construction and Practice of Three-dimensional Teaching Resource Base

Jing Wang

School of Computer Science, Zhuhai College of Jilin University, Guangdong, China

wj05032@jluzh.edu.cn

Keywords: Application talent training, Teaching reform, Three-dimensional teaching resources, Computer basic courses.

Abstract: Multimedia technology and applied three-dimensional teaching resources based on application-oriented talent training are a complete set of teaching resources database, including "centralized teaching- -online learning resources- -skill training- -text textbook", and integrating a variety of resources. The main teaching methods include the teaching mode of multimedia classroom guidance, computer practice guidance, after-school self-study, and the combination of independent interactive teaching between teachers and students online. After more than 10 years of continuous accumulation, the three-dimensional teaching resource database has been established and popularized, which has formed a variety of teaching results, and has achieved good teaching results in the teaching practise.

1. Introduction

The concepts, methods, theories and content involved in multimedia technology courses are mainly used in computer related professional courses, as well as a large number of relevant information management, CAI teaching, animation design, and game industry, and multimedia technology is needed in all walks of life. In order to train students to master the basic theoretical knowledge of multimedia, master the use of computer software and hardware, and train students to have the ability of multimedia application and development. The research group has established the Construction of Multimedia Technology and Application Stethree-dimensional Teaching Resources, the Construction of Multimedia Technology and Application Three-dimensional Teaching Resource Base Based on Applied Talent Training, and the Innovation and Entrepreneurship Education Curriculum and Applied Talents Training Course Training Project. To guide college students ' innovation and entrepreneurship training program projects "Multimedia Interactive Art Production" and "Multimedia Virtual Simulation Production". Group always adhere

to the "application-oriented talent training model as the basis, practice teaching construction as the condition, teaching reform as the driving force, competition as the means" four key link design and management, to cultivate application-oriented high-quality talents, this paper discusses the implementation process and mode of the information interactive classroom, and analyzes the application effect at the same time.

2. Construction Process of Stereoscopic Resource Library

2.1. Reform of the Curriculum Teaching System

Reform the teaching mode, methods and means. According to the principle of continuous improvement, this course reforms the teaching content, innovates the teaching mode, innovates the teaching means, and realizes the four in one teaching resource library of "centralized teaching online resources skill training teaching materials".

2.2. Adopt Advanced Teaching Means

The core of reform and innovation is to cultivate interest, encourage ability and improve innovation consciousness. It adopts advanced teaching methods, combined with network platform, text teaching materials, multimedia interactive courseware, micro class and other teaching modes. Change the traditional teaching method, combine the guiding teaching method, task driven teaching method, interactive teaching method, heuristic teaching method and case teaching method, correctly handle the relationship between imparting knowledge and cultivating ability, encourage students to participate in innovation and entrepreneurship projects, strengthen understanding and improve their ability in practice.

2.3. Change of the Course Teaching Method

According to students' personality, we should take measures to mobilize students' enthusiasm, improve students' application ability and practical ability under the guidance of teachers, and make use of teaching website and auxiliary tools to formulate teaching content and teaching means. It combines students' self-study, teachers' explanation, classroom discussion, interactive courseware and micro lecture demonstration. Improve the proportion of experimental content, mobilize the enthusiasm of students, and improve students' practical ability under the guidance of teachers.

2.4 .The School Increases its Investment in the Construction of the Teaching Platform

We should strengthen the construction of teaching resources and the system of Cultivating College Students' practical ability. In the aspect of system construction, the school provides policy support for innovation and entrepreneurship education curriculum, actively guides and develops practical teaching platform, and gives support and guidance in the aspects of capital, site and resource allocation.

2.5. Strengthen the Construction of Laboratory and Teaching Environment

Strengthen the construction of multimedia laboratory and teaching environment,increase the teaching practice links, improve the quality of teaching, constantly strengthen students 'innovation ability, and cultivate students' ability to design and create by themselves.

2.6. Training Objectives of Applied Talents

Pay attention to the organic combination of talent training and teaching and research results. The project members have made achievements in basic computer teaching reform, course practice teaching activities, training environment construction, theoretical research and teaching practice of applied talents training mode, and organically combined with the formation of talents training mode, formulation of talents training plan, and construction of excellent courses.

3. Solved Teaching Problems

3.1. Four-in-one Three-Dimensional Teaching Resources

The four in one teaching resources of "centralized teaching online resources skill training teaching materials" are adopted. The main teaching methods include the teaching mode of multimedia classroom guidance, computer practice guidance, after-school self-study, and the combination of independent interactive teaching between teachers and students online.

3.2. Build a Network Teaching Platform

With college resources construction as the core, build a network teaching platform, accurately grasp the focus and difficulties of teaching, and strive to be the latest technology reflected in the curriculum, using network technology sharing teaching resources, realize online reading course teaching documents, courseware, experimental content, at the same time integration of all kinds of teaching resources, for the students characteristics of video tutorial 11. Using rich teaching resources, we can vividly impart knowledge to students, improve their ability to understand knowledge, and stimulate their interest in learning.

3.3. Complete Textbook Construction

The published Multimedia Technology and Application and the supporting experimental textbook Multimedia Technology and Application-Practical Practice Manual have been included in the application planning textbooks of colleges and universities and are used by many universities across the country. The content keeps pace with The Times, supporting types of rich resources, including multimedia interactive courseware and micro-class video tutorials, the teaching effect has been significantly improved.

3.4. Introduce the Competition Mechanism

The school regularly holds multimedia design competitions or leads students to participate in provincial or municipal competitions to improve students' competition awareness. At the same time, it broadens students' thinking and vision, so that students can see other people's creativity in the

competition, improve their creativity and obtain a number of awards.

3.5. Construction of Paperless Teaching Mode

Build a perfect network platform test database. At present, there are 173 different types of test questions, which are integrated with basic knowledge and practical operation. The types of questions include: multiple choice questions, fill in the blanks, short answer questions, image processing questions, animation questions, etc., which not only ensure the fairness of the examination, but also comprehensively investigate the students' learning level.

4. Innovation Points of the Reform

4.1. Training System Innovation

With the network platform as the carrier, a full set of teaching content and teaching staff as the support, establish a new system of whole chain innovation and practice education. The platform carrier of "comprehensive design and innovation experiment", "innovation and entrepreneurship competition", "network teaching course platform" and so on, and a team of innovation and entrepreneurship mentors are built, which provides good conditions and teachers support for the training of applied talents.

4.2. Training Method Innovation

Students' multimedia experimental works are designed around a specific theme, and the materials are integrated into the design works. The experimental results are given by reviewing the students' works, and the students' excellent design works are put on the course network to form a positive mutual evaluation learning mode and significantly improve the students' learning enthusiasm. Excellent design talents were selected from the students, and the backbone of students were encouraged and guided to participate in various competitions, and excellent results were achieved.

4.3 Training Mode Innovation

The four in one teaching resources of "centralized teaching online resources skill training text teaching materials" are adopted. In the process of teaching, members of the research group have made, collected and sorted out complete teaching system resources, and formed a teaching resource library in the form of course teaching plan, experimental teaching plan, teaching material, experimental teaching material, test database, course website, multimedia interactive electronic presentation, micro class, etc. after careful design and sorting, it has been integrated into the network teaching platform and has been put into teaching, Good teaching effect has been achieved.

5. Promotion and Application Effect

The research and practical application on the construction of teaching system and teaching problems of applied talent training, has achieved remarkable results after 5 years of practical test and has broad promotion and application prospects. The specific application situation is as follows:

5.1. Significant Improvement of Teachers' Professional Quality

Seven teaching and research papers related to the achievements were published. A total of 4 textbooks were published and distributed nationwide.One teacher has won the title of Excellent Teacher in the City, and many of the teachers have won the titles of advanced workers and outstanding teachers over the years. The teacher team won 2 first prizes in national multimedia design competition and 2 first prizes in provincial multimedia design competition. He presided over or participated in 11 provincial or school-level teaching, research and teaching reform projects related to this project, and guided and guided college students ' innovation and entrepreneurship practice projects.

5.2. Benefit to Peer Communication, Mutual Evaluation and Reference

The guiding teaching method, task driven teaching method, interactive teaching method, case teaching method, heuristic teaching method and other teaching methods adopted in this project are suitable for similar courses in Colleges and universities, and are conducive to improving students' ability to analyze and deal with problems. The network platform is completely open, the external network can be accessed, and the teaching content is free of charge for domestic similar courses. The published teaching materials have been used as teaching materials by more than 20 universities in China.

5.3. Students are well in Competition

Students have made great achievements in participating in provincial and national multimedia design competitions. They have won the first prize of Guangdong Web Design Competition, the National Multimedia Education Software Design Competition, Guangdong Multimedia Software Design Competition and the first prize of the National Multimedia Courseware Production Competition. Approved college students ' innovation and entrepreneurship training program project: multimedia interactive art production, multimedia virtual simulation production project.

5.4. Resource Sharing of the Website of the Teaching Platform

This course has established a complete teaching platform website, which has the functions of resource download, courseware learning, micro class, online Q & A, etc. All relevant teaching documents of this course, including courseware, teaching plan, experiment content and other documents, will be published on the teaching platform website for students to download at any time. Teachers of this course have used this platform in teaching, and achieved good teaching results.

5.5. Research Achievements of Education Reform Appear

Members of the teaching group will publish relevant teaching research papers, summarize teaching experience for peer discussion and research, expand social influence, and jointly improve the quality of teaching.

5.6. Supporting Materials Included in Application Planning of IT

The teaching and research group compiled a total of 4 relevant textbooks, among which the textbook "Multimedia Technology and Application" and supporting experimental textbooks "Multimedia Technology and Application-Practical Practice Manual", included in the information technology application planning textbooks of colleges and universities, has been written by more than ten colleges and universities across the country as major teaching materials or teaching materials, has been well evaluated.

6. Conclusion

Through five years of practice, the teaching mode construction and training scheme, curriculum reform and quality curriculum construction, the development of relevant system and the implementation measures have good results.The results have been publicized and promoted in colleges and universities nationwide, and we have promoted the relevant computer application majors directly.The teaching and rich achievements have played a good role in promoting the training quality of application-oriented talents.

Acknowledgments

This work was supported by Ideological and political teaching team of basic computer course in university Project of Zhuhai College of Jilin University (project number: KSCZ2020003),Teaching Quality and Teaching Reform Project of Department of Education of Guangdong Province (project number:2017009), Online open course project of teaching quality engineering of Department of education of Guangdong Province,Online open course project of teaching quality engineering project of Zhuhai Clollege of Jilin University, Teaching Quality Engineering Construction Project of Zhuhai College of Jilin University in 2019, Zhuhai Laboratory of Key Laboratory of Symbol Compu tation and Knowledge Engineering of Ministry of Education.

References

[1] Wang Jing. Research on the Data Acquisition Resource Management Based on SNMP [C]. ICEM,2017,594-601.

[2] Wang Jing. Research on the Effect and Teaching Mode of Three-Dimensional Teaching Resources Construction. The Experience of the Curriculum Reform of "Multimedia Technology and Application" [C]. ICEM, 2017, 946-951.

[3] Wang Jing, Zheng Gao. Research and Development of Paperless Examination System[C]. EMIM, 2018, 430-435.

[4] Wang Jing,Zheng Gao. Research on the integration of "Multimedia Technology and Application" Teaching in Smartphone[C]. EMIM, 2018, 683-687.

[5]Jian CHEN, Xiaoli LI, Weibin LIN: Research on the Construction of Innovation and Entrepreneurship Gold Course in Universities under the Background of Guangdong-Hong

Kong-Macao Greater Bay Area[J]. Canadian Social Science,2019, 15(7): 61-63.

[6] Lijuan Wan. Practice and Thoughts on Open Online Courses and Mobile Cloud Classroom Construction in Advanced Mathematics[C]. Science and Engineering Research Center. Proceedings of 2019 5th International Conference on Education Reform and Modern Management (ERMM 2019).Science and Engineering Research Center:Science and Engineering Research Center, 2019: 89-92.

[7] Renée A. Hendriks,Peter G. M. de Jong,Wilfried F. Admiraal,Marlies E. J. Reinders:Teaching modes and social-epistemological dimensions in medical Massive Open Online Courses: Lessons for integration in campus education[J]. Medical Teacher, 2019, 41(8).

[8] Zhifang Wang,Jia Liu. A Teaching Quality Evaluation System of Massive Open Online Courses Based on Big Data Analysis[J]. International Journal of Emerging Technologies in Learning (iJET), 2019, 14(14).

[9] Jing Wang. Multimedia Technology and Application online Open Course Teaching Reform under The Golden Course Standard [C]. ATCI, 2020, 917-923.

[10] Yang Yuehong. Computer Teaching Reform and Innovation in the Multimedia Network Classroom [J]. Contemporary Educational Practice and Teaching Research, 2017, 12: 7+9