2018 Technology Outlook for Chinese Vocational Education

Case Study



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Hubei Science and Technology College

Innovative Application of Seamless Flipped Classroom in Vocational Education

Mei Lin

I. Flipped classroom – Rebuild the learning process

In order to encourage students to form a scientific concept of education, the flipped classroom, therefore, has been adopted to provide students with a wider range of learning materials, which could meet with the needs of students at different levels and saving time in face-to-face teaching.

In this kind of class, on the one hand, teachers release learning resources for students, and on the other hand, students are required to record and edit videos, which would be re-edit by teachers and used in the following sections for peer review and explanation of difficult points.

II. Task-driven class - Enable self-study "scaffolding"

In view of students who are taking, the course of the Children's Family Education Guide, they always have no study plans or cannot adhere their plans to the end. This course, therefore, follows the principle of "taking tasks as the main line, Teachers acting as guides, and students as the center", to create a task-driven learning mode with the feature of "teaching based on learning, students' initiative participation, independent cooperation, exploration and innovation. By "aiming to stimulate students' learning interests, develop students' abilities in problem analyzing and solving, and improve students' capacity of both independent and collaborative learning. By carrying out learning activities, students could conduct exploration and learning through tasks. Students could gain the sense of accomplishment from the staged achievements at different phases, thereby promoting the sustainable and effective learning.

III. The support of media – Enriching learning forms

In accordance with the characteristics of vocational education, this course will apply social media, such as WeChat, QQ as well as their aggregation platforms, cloud classroom, and MOODLE learning platform to carry out a blended learning model. By organizing both formal and informal learning activities, a learning community with deep integration of online and offline scenarios is established, which makes online teaching and face-to-face classrooms complementary to each other. Therefore, this seamless flipped classroom would be achieved with an appropriate "ecological environment" for which enhances teaching effectiveness.

Link:

http://online.hubtvu.edu.cn/TeacherCourse.aspx?&Courseld=b38162f9-8214-4673-ae6e-7e2ec445cda4

A Case of Simulation Training for Applied Technology of Internet of Things

Xu Zhouhong

The Internet of Things application is considered as a new emerging technology that is comprehensive and interdisciplinary, involving practices in various fields. As the knowledge systems of Internet of Things (IoT) bears, various interdisciplinary contents with higher requirements on practical skills, the school, after years of exploration and practice, developes a professional training mode for IoT talent-cultivation that emphases "capability enhancement and project orientation". Adhering to the secondary vocational education philosophy – "guided by the needs of enterprises and targeted at professional competence", this mode has promoted the teaching reform centered on the professional ability and practical operation competence, and has built an innovation training center for the Internet of Things. By introducing the three real and typical IoT application projects – "Smart Home Cognitive Learning", "Smart Home Model Room Operation" and "Comprehensive Practical Training on Smart Living", the school has gradually developed students' "junior and mid-level" occupational competence, as well has upgrading the talent system, teaching system, methodology and methods. All of this is based on typical working tasks and students' cognition rules, at the same time, has constantly studied and explored the talent-training mode that meets the needs of enterprises and the requirements of secondary vocational education.

In the Smart Home Experience Center of the IoT Innovation Training Center, the smart home control system is installed in the training room to intelligently control the lighting, appliances, curtains, door locks. The Smart Home also provides daily protection, abnormal conditions alarming and intelligent environment monitoring, which enables students to intuitively understand the knowledge of the course. In the smart home model operation room, students have opportunities to carry out training operations to practice installation and maintenance of intelligent equipment in a practical home environment. The IoT Training Kit is able to simulate a property-based intelligence community system that includes intelligent supermarkets, healthcare, as well as properties, and enables to make remote monitoring and data viewing in real time possible.

Link:

https://mp.weixin.qq.com/s/gK5LMBJYkJ3JxU9jZe3iWw

A Case of Applying Blended Learning Model

Wu Minling

. Design principles of blended learning

- 1 The principle of proximal development. Blended learning is driven by tasks, so tasks are supposed to be designed in the appropriate difficultly and could be accomplished through continuous efforts.
- 2 The principle of competence developing. Tasks designed should focus on training students' comprehensive ability and improving their information literacy, such as abilities to acquire information, screen information, evaluate information, and creatively utilize information.
- 3 The principle of flexible learning. Due to the fast pace of modern life, learning tasks should be in short snappy mini-classes, so students can conduct ubiquitous learning, where fragmented knowledge points and skill points combined together can form a complete knowledge system.
- The evaluation principle of diversification, process and integrity. The design of evaluation integrates self-evaluation, mutual evaluation, teacher evaluation and enterprise evaluation together. The formative evaluation and final evaluation are supplementary to each other to deliver a general evaluation for students' comprehensive quality.

II. Design of blended learning

- 1 Pre-class tasks. Teachers hand out learning plans before class, and students are required to search for related knowledge and skills points, preview micro-classes, and form teams to complete learning plans with guidebook. The platform would give an automatic evaluation.
- In-class task. Teachers organize online quizzes to test knowledge points and the platform scores in real time. Teachers could double check the feedbacks presented by the online testing platform, and could timely adjust teaching strategies in accordance with the related results. Teachers could use the platform to organize students' discussions, randomly selecting, voting and many other activities. Teachers and students can also evaluate mutually.
- 3 Post-class tasks. Teachers could provide their feedbacks and instructions anytime and anywhere to students who have uploaded their homework online. Enterprises could also evaluate and communicate with teachers and students with ease.

Link: http://220.162.12.173/?action=openfile&id=291570

The Role of Informationization in Promoting Teaching-Taking Quanzhou Huaqiao Secondary Vocational School as an Example

Wu Minling

Our school mainly adopts the following measures to promote information-based teaching.

- Online teaching and researching. Appling and managing projects online. Our school has developed a mechanism of regular online forum: with a high active participation rate of all teachers, the forum is themed with one topic each time and teaching groups of all subjects take turns to hold the forum. The summary after each forum will be written and uploaded to QQ chatting groups by organizers for the teachers to learn repetitively.
- **Expert training.** The school often invites experts in the field of information technology-based teaching to give training on teaching philosophy, teaching design and commonly used software.
- 3 Promoting teaching with competition. Each semester, each teaching group will prepare 1-2 information lessons collectively for each semester, to participate in the school contest. The school will select high-quality classes, and the winning teachers will become the candidates for next-year's information technology contest.
- Informationized teaching process. Teachers would use the platform to prepare lessons, send pre-class tasks, check the status of task achievements, do the role call, give tests, select students for group discussion, as well guide students. In this way, homework and its grading will all have become informationized.
- **5** Using animation and software to explain key and difficult teaching points.

6 Developing 13 information-based courses.

Link: http://220.162.12.173/?action=openfile&id=291569

Suzhou Tourism and Finance Institute

A Path Analysis of Interdisciplinary Teaching of Tourism Major by Immersive Learning Venues- Taking Tour Commentary of Kunqu Opera, the Father of Traditional Chinese Operas as an Example.

Wang Li

This subject of Tour Commentary of Kunqu Opera, the Father of Traditional Chinese Operas implements interdisciplinary integration of art and tourism courses. As situational experience is particularly important for tourism majors, information-based technology has been used in teaching to create an immersive learning environment. By depending on the three-dimensional audio-visual & travel software of Kunqu Opera (immersive learning venue), video, graphics, animation, interactive software and other resources could be integrated effectively into teaching. This provides a blended context learning environment and interactive simulative traveling experience for students, and is considered conducive in order to stimulate the students' learning interests and guide them to explore and cooperate independently, thereby helping students to complete the process from knowledge input to capacity output.



Figure: Teaching model of "Tour Commentary of Kunqu Opera - the Father of Traditional Chinese Operas

Link:

http://www.jsve.edu.cn/articles/2017/12/29/59464.htm

Suzhou Higher Vocational and Technical School

Learning Space Construction of Physics in Smart Physics Laboratory

Pan Shujie

The development mode of learning space construction of physics course in secondary vocational schools.



-Taking Application of Convex Lens-Imaging Rules in Life, the First Prize Work of 2017 National Vocational College Informational Teaching Contest as An Example

1 Course Background: in the traditional classroom, students rarely show interest in the lesson and seldom take part in the learning process, so their awareness of teamwork and innovative and operation ability can hardly be improved.

- 2 Theoretical guidance: maker education, connectivism, etc.
- Information-based means: with the help of VR technology, small AI robots, virtual NB physics lab and other software, the Zhihui Physical Lab Environment, which combines the real and virtual environments, creates and provides both a virtual physics lab and a reconstructed physical lab in real time that includes a tool room, interactive space and resources space. In this case, it is helpful for learners to form their continuity, multi-level interaction and optimized development of their own ecology.

Link:

http://t.yzinter.com/index.php?m=News&a=listcontent&id=487579&classid=122&from=singlemessage

Jiangsu Dagang Secondary Vocational School

Perfect Kintsugi - Ancient Ceramic Repairing

Zhu Tingting

The emerging technologies used in this case are "Virtual Simulation System for Ancient Ceramic" and "Piecing Assistant" software.

"Virtual Simulation System for Ancient Ceramics" consists of three modules

- Porcelain Appreciation Pavilion: it helps students to get familiar with the features of ceramics design as well as historical cultures of various dynasties, and supports roaming, interactive experiencing and online self-testing.
- 2 Repair Hall: it helps students to master four types of ancient ceramic repairing processes as well as essentials of ceramic operation, which includes sub-practice mode and assessment mode.
- 3 Materials Library: It provides data of different types of ancient porcelain from various dynasties.

II. The software "Piecing Assistant" includes two functions, namely piecing and filling

- 1 It imports fragments that have been scanned by the 3D scanner into "Piecing Assistant", and virtually pieces these fragments, which assists precise piecing of real objects.
- (2) It browses image data of similar objects in the corresponding dynasty in the "Library" of "Virtual Simulation System of Ancient Ceramic Restoration", imports them into "Small Piecing Assistant", and then completes the exact fillings according to the wall thickness, height, diameter and chamfer.

Link: http://www.jsve.edu.cn/articles/2018/01/02/59471.htm

Guangzhou Civil Aviation College

The Application of Flipped Classroom Teaching Mode Based on Remote and Virtual Laboratory in the Practical Teaching of "Civil Aviation E-commerce" course

Luo Wenquan

I. Emerging Technologies Mainly Used in the Case

The case involves two emerging technologies: flipped classroom and virtual remote laboratory. Flipped classroom flips over traditional forms of teaching. As for virtual and remote laboratory, it creates a virtual laboratory environment on the Internet via simulation and multimedia technologies.

II. Integration of Technology and Teaching

The practical teaching case of "civil aviation e-commerce" is implemented under the help of remote and virtual laboratory of "e-commerce application" and "aviation CBT", combining the technologies of flipped classroom with the virtual and remote laboratory. In the flipped classroom, the teacher will provide teaching resources such as task sheets, micro lessons, experimental instructions and micro videos of experimental operations to students online before the class. The students are required to study autonomously, and then grouped and act as different characters, collaboratively complete simulating operations in the remote virtual lab with reference to e-commerce posts of civil aviation. In the class, the teachers will show the experiment results of randomly selected groups, pointing out the problems, and summarize the theoretical knowledge involved. The evaluation will be completed after class, including the student's self-assessment, mutual evaluation and the evaluations from teachers.

Link:

http://www.gdhed.edu.cn/publicfiles/business/htmlfiles/gdjyt/tzgg/201411/480807.html

Xiamen City University

Breakthroughs Made by the Application of Six-in-one Information-Based Teaching in "Information-based Ideological and Political Classes"

Shen Lixin

All ideological and political lessons are supposed to be given in "information-based classrooms" instead of in traditional classrooms. Whether a knowledge point is mastered by students or not would be revealed instantly in a chart. Ideas would be internalized by online discussions and debates as well as face-to-face discussions, and therefore forms a new air of ideological and political education. All of these rely upon the integrated design of the six informationization factors, which aims to create a new model of information-based class. The concept of "Six-in-one" would be explained as follows.

- 1 The innovative ideological and political "information-based class" has been regarded as the center. The "information-based courses" are designed by "information-based teachers" on the "information-based learning platform" and implemented in the "information-based class-rooms".
- 2 New-type equipment in the "information-based classroom".
- 3 New-type ideological and political "information-based courses".
- 4 "Information-based teachers".
- 5 "High-qualified information-based resources" .
- 6 The "Information-based Learning Platform" is compatible with all kinds of digital resources and terminals.

Link: http://md2.xmcu.cn

Central China Normal University

Wuhan Polytechnic Has Set Up an Industrial Robot Practical Training Center

Zeng Xueqing

Wuhan Polytechnic (WHPT) established a major in mechatronics (Industrial Robot Technology oriented) in the Department of Mechatronics Engineering in 2015. With a strictly controlled enrollment scale, it recruits about 80 students for two classes annually.

WHPT has especially established the Industrial Robot Training Center for students, with five six-joint industrial robots on one side of the center and smart classrooms on the other. During learning, the students not only need to consider the "communication" among robots, production & processing equipment and sensors and the strict "working pace", but also the placement of equipment, programming, parameter setting and the final debugging. Students are individually involved in the whole process.

The major of industrial robots mainly adopts a cultivation model in combination of learning with working, in which knowledge and skills are equally emphasized. That is to say, after one to two years of study, students will master the basic theories and professional knowledge systematically with vocational education and professional skills trainings received to improve both professional skills and comprehensive professional abilities. "Knowledge and skills are equally emphasized" means that the vocational education needs to take into account the systematic knowledge building and the upgrading of vocational skills. Employment needs of the students should be considered together with their future career development to achieve the ultimate goal of cultivating high-quality and highly skilled technical talents of mechatronics. "Combination of learning and working" means that the students will maximize their learning at work according to the rules of career growth and epistemology. In the process of learning and practice, the teachers and the skilled staff of the enterprises will guide the students to gradually adapt to the enterprise environment and become a member of the enterprise, so that the students can be qualified as high-quality technical talents for managing industrial robots.

Link:

http://jd.wtc.edu.cn/s/27/t/20/74/f8/info29944.htm

Guangdong Food and Drug Vocational College

Innovative Application of Virtual Reality Technology in Cultivating Food and Drug Talents – Taking Guangdong Food and Drug Vocational College as an Example

Xiang Chaoyang

There are problems within the food and drug majors such as lacking practical teaching and learning resources, various difficult teaching points that are hard to explain, and scattered resources unable to meet the personalized learning needs of the students. To solve these issues, this case developed a VR "Virtual Factory" with more than 20 sets of equipment in 4 workshops using the technology of 3D Max, Quest 3D and Unity 3D. By integrating related VR practice teaching resources, it constructs a virtual and practical teaching environment based on diversified information technology, which has created a VR technology application mode with features of "combining virtual and real environment to support practical training and teaching, upgrading practice teaching, and carrying out researches so as to cultivate pharmaceutical professionals and technical talents". It promotes the conversion from the traditional practice teaching mode of "teaching + real training" to the mixed practice teaching mode of "online self-learning + virtual training + face-to-face teaching + real training".

The VR Virtual Factory has the following advantages:

- 1 Integrating the creation of different scenarios, teaching demonstrations, virtual training and virtual assessments;
- 2 Simulating the factory and workshop scenarios and the structure and processes of food and pharmaceuticals production equipment;
- 3 Motivating the students to learn, experience, explore, and self-evaluate more directly and deeply, and
- 4 Reducing the practical training cycle. It can support practical training, self-study and industrial training for majors of food and drug.

Link:

http://projects.zlgc.chaoxing.com/2017JXCGVR

Higher Education Press Co., Ltd.

Intelligent Center for Vocational Education: Promoting In-depth Integration of Quality Resources into the Whole Process of Vocational Education and Teaching

Cao Zhe

"Intelligent Center for Vocational Education" is a platform for co-building and sharing digital education resources and providing online teaching services, established and operated by the Higher Education Press. "Intelligent Center for Vocational Education" follows the laws of vocational education and teaching, combines the characteristics of construction and the application in resource library project, and creatively integrates MOOCs with small-scale restricted online courses (SPOCs). From the starting point of supporting both online and online-offline hybrid teaching, it provides an environment and the necessary tools for building and operating the structured courses of "resources + activities + evaluation + certification". The platform supports quick retrieval of the national resource database in managing and integrating its own resources. It can also reuse the standardized model courses in the national resource library as well as the high-quality courses in our school, in order to achieve the complete course creation, content sharing, tracking and controlling of the learning process, online testing, assignment announcing, notice issuing, interacting, evaluating, learning data analyzing, learning achievement recognizing, teaching effect feedback, and so on. All of these achievements could realize the in-depth integration of information technology and course teaching.

Link: www.icve.com.cn

Vocational Training Council

Cross-Platform Application System of VR/AR Engineering Education

Eric Liu

The Vocational Training Council (VTC) is the biggest professional and vocational education institution in Hong Kong, providing comprehensive pre-employment and on-the-job training for nearly 250,000 students every year. VTC offers a wide range of courses and awards various kinds of accreditations. Its teaching methods focus on imparting practical skills with emphasis on practical experience and efficiency.

Following the global education trend, VTC integrates innovative technologies with teaching, and introduces augmented reality (AR) as well as virtual reality (VR) technologies, in order to enhance students' learning motivation and efficiency. Taking aircraft maintenance as an example, students feel as if they were in the airport ramps, and therefore could practice inspecting the structure of the aircraft and replacing damaged wheels when they put on the VR goggles. It is very difficult to create emergent situations to train students since these situations, such as fire, are often dangerous. However, with the help of virtual reality technology, different crises could be simulated in a safe environment, thus greatly reducing security risks and providing sufficient opportunities for students to handle the crises.

Link:

http://engineering.vtc.edu.hk/en/EngineeringDisciplineLifeDetails.php?EDLDID=60

EDUSOA

Curriculum Reform Based on Holo-Media Materials - The Way of Growth of Henan Vocational Education Cloud College

Shang Jianxin

As a well-known publishing institution for vocational education in Henan province, Henan Science and Technology Press set up a joint teaching and research institution for innovation of information technology in vocational education, with the Research Center of E-learning for technology and engineering of the Ministry of Education in 2016.

After a period of preparation, led by the Higher Education Division of the Education Department, high-qualified resource platforms for vocational education, which is based on the development of holo-media materials - Vocational Education Cloud, has been built, as a pilot project, in 50 higher vocational colleges. After each college electing the leaders for their majors, a team would be established for developing high-qualified resources and holo-media materials. Reconstructing the teaching materials in accordance with the idea that combining production with teaching, which is required by the curriculum reform. The digital resources (animation, videos, models and simulation systems) for each textbook would have been uploaded to the Vocational Education Cloud College, and would be shared for the first batch of participating institutions. In the view of the value of this project, the second batch of resource-sharing plans has been released in December 2017.

Link:

http://www.sohu.com/a/209016883_756537

Changchun Mechanical Industrial School

Constructing a Smart Learning Environment for the Fundamentals of Mechanics Based on Holo-Media Materials

Peng Min

Fundamentals of Mechanics plays the lead role in machinery major courses for secondary vocational schools. Nowadays the traditional teaching classroom faces many problems, including mismatches between teaching content and real-world working, teaching resource's failure in interest stimulation for students, as well as the lack of supervision in examination and the evaluation process. In the new situation where the inner construction and quality of secondary vocational education has been comprehensively strengthened and improved, we tend to make full use of the efficacy of holo-media materials, creating a smart learning environment to roll out the reform on the course of Fundamentals of Mechanics.

In terms of the teaching content, we conduct explorations on how to reform the relevant aspects, based on the real-life working process, in which the media of typical parts from enterprises provide knowledge as well as skills. In relation to learning resources, we develop holo-media materials by adopting virtual reality technic, augmented reality technic and many other emerging technologies. The relevant assignment books, evaluation forms and other resources have been placed in the "Holo-Me-dia Materials Store". With respect to the learning process, we lead the mode of teaching to the one featuring in "project-orientation", "learning before teaching", "cooperate inquisition". With regards to the aspect of evaluation, we include "moral, diligence, professional skills, efficiency and social abilities" as the elements of evaluation model for staff, which lay emphasis on both the process and result of the mode test evaluation. When it comes to the perspective of environmental structure, when considering learners as the focus, it generates various significant functions, involving situational awareness, the recording, data analysis, maintenance, diagnosis and evaluation of the learning process.

Link:

http://www.idealworkshops.com/main/web/article/detail/5a927a15363e9471688bbb44

Changchun Automobile Industry Institute

Exploration of Promoting Personalized Learning with Holo-Media Materials – Taking Direction Control of Hydraulic Cylinders as an Example

Shan Shumei

Using holo-media materials as a technical support, our school has conducted a series of researches and practices with the value orientation on personalized learning. The following case of Direction Control of Hydraulic Cylinder could serve as an illustration for our practice.

First, reconstruct learning contents based on the holo-media materials. With the project as a carrier, the working principles and common types of the reversing valve, the working principle of the reversing circuit, the lapping of simple reversing circuits and other core contents are combined through the work-flow to build a map of knowledge and skill points of the holo-media materials. Second, optimize resource es and the environment with holo-media materials. On the map of knowledge and skills, AR technologies are adopted to design and develop diversified instructional videos and interactive resources on various topics such as the working principle of the reversing valve, the working process of common reversing valves, and the directional control process of hydraulic cylinder together with an online learning platform developed. Finally, promote personalized learning with holo-media materials. Students can read practical training work orders including connection and control of the reversing circuit to make good preparations for practical training; watch AR resources online and conduct self-paced learning according to personal cognitive level; realize targeted promotion and improvement through recording and evaluation feedback of the learning process.

Link:

http://www.idealworkshops.com/main/web/article/detail/5a927aad363e94e26a8bb947

Changchun Vocational Institute Of Technology

A Study on Co-Developing and Sharing Model of Higher Vocational Information-Based Teaching Resources on the basis of Holo-Media Materials

Fang Zhenlong

Starting from the building of holo-media materials, and aided by Internet and information-based teaching methods, we aim to build a professional curriculum system to produce well-equipped talented individuals, following the principle of "cooperation between enterprises and colleges and combination of production and teaching". This system not only could promote the reform and upgrading of the education and teaching, but also help enterprises to maximize the production gained from technology upgrading.

This case explores a co-developing and sharing model of the holo-media materials, characterizing "one standard, one leading school, multi-school cooperation, enterprise participation and technical companies' support" for industrial teaching resources in one area or region. From the view of co-de-veloping and sharing modes, the strategies, methods and forms of organizations in the holo-media materials' design have been demonstrated.

Link: http://www.zjyunxueyuan.com/

Jiamusi Vocational Education Group

Innovation and Application of Holo-Media Interactive Digital Courseware

Wang Yongcheng

"Inaccessible, invisible, untouchable, and irreproducible" are key problems that require urgent handling in the practical training sessions of vocational education. This case creates a holo-media interactive digital courseware suitable for the characteristics of vocational practical training. Using the PDF platform to achieve the organic integration of digital educational resources and teaching content, it solves incompatibility problems between traditional PPT and U3D to enable functions of 3D models including human-computer interactions, dynamic display, on-site sectioning, part hiding, photo display and model rendering. It also achieves integrated resource services of "originating from practice, visibility along the entire process, convenient interaction and content reproducing".

Holo-media interactive digital courseware can support extra-large files with ideal integration, safety and reliability. Besides compatibility among different types of 3D models, it also supports plane browsing, model interaction, multimedia positioned embodiment, safe and reliable publishing of courseware online.

Construction Process: With the two-way integration between universities and enterprises, a teaching content system is constructed. Contents requiring U3D model resources for virtual simulation practical training are determined based on the workplace environment and work processes. Audio, video, animation and U3D models are well organized to achieve active learning in practice with a good understanding for students.

Link:

http://www.idealworkshops.com/main/web/article/detail/5a927a85363e9489688bbffc

Guannan Technical Secondary School of Jiangsu

The Application of Virtual Simulation Technology in Nursing Specialized Courses in Secondary Vocational Schools – Taking Emergency Care for Cerebral Infarction as an Example

Zhang Huizhi

This case takes "first aid for cerebral infarction" task design as its main line and adopts teaching methodology including task-driven and situation-creation teaching methods. Before class, students would complete an investigation of risk detection for people of different ages by the application Stroke Medical Line. During the class, in order to allow the students to obtain a more realistic operating experience, aided by the information technology, teachers build a first aid scene, helping the students to complete autonomous learning by "learning through practicing" as well as solving teaching difficulties through post experience, teamwork, role-playing and many other ways. After the class, students possess opportunities to go to hospitals and communities where they could apply what they have learnt in class for society.

The resource platform "Medical Nursing Learning System" is a comprehensive learning system that supports professional nursing courses, simulation training, health education and assessments. This system contains three-dimensional virtual simulation, video animation, interactive learning software, and many other resources of the department of internal medicine, surgery, gynecology and pediatrics. In order to offer comprehensive evaluations and feedbacks on students, teachers could use the "Chaoxing Fanya Platform" to monitor the whole learning process (before-class, in-class and after-class) of the students in real time. The comprehensive use of the resource system and learning platform enables students to experience more realistic working situations, and this possesses great value for popularization and serviceability.

Link:

http://www.jsve.edu.cn/articles/2018/01/02/59467.htm

Jiangsu Dagang Secondary Vocational School

The Application of 3D Immersive Bridge in Vessel Collision Avoidance Teaching

Cao Xu

With the development of global maritime transport, the teaching of collision avoidance of vessels is becoming increasingly important as accidents in shipping lanes are occurring more and more frequently. The traditional teaching of collision avoidance focuses on the theoretical knowledge of rules of collision avoidance, yet lacks practical skills trainings and operations in emergent situations. With the help of the realistic visual effect provided by the three-dimensional immersive bridge, the scenarios taught in class are combined with the practical process of sailing, and the relevant collision avoidance rules are integrated in collision avoidance trainings, in this way, improving students' practical ability and emergency processing abilities.

The three-dimensional immersive bridge could also be used for investigation and analysis of accident cases, such as the maritime environment of ship collisions, the adopted avoidance measures as well as their effects. The three-dimensional immersive bridge could be used to study the avoidance measures taken by pilots in different situations; therefore, we could analyze and formulate measures and methods to avoid accidents. In this case, students' innovative awareness could be cultivated, which poses a positive effect for ship collision avoidance teaching.

Link:

http://www.jsve.edu.cn/articles/2017/12/29/59458.htm

Jiangsu Haimen Secondary Specialized School

Exploration of Interdisciplinary Teaching Philosophy — Practical Training for Children's Stick Figures

Gu Jingcheng

Emerging Technologies: In this case, a practical training software "I Love Stick Figure" is developed, based on two emerging technologies – UE4 (unreal engine) and hype3 (H5web Development). Based on the stick drawing course of the drawing curriculum, the corresponding module in the software has been developed in system.

The integration of technology and teaching: Integrating with the three-dimensional interactive learning software "I Love Stick Figure", following the curriculum standards and the job requirements of pre-primary education, we have carried out in-depth studies for teaching materials according to the teaching contents of stick drawing teaching. The next step is to re-expand and reorganize the contents in the targeted textbook Painting, designing the corresponding stick figure modules based on the reorganized contents, in which children's stick figure teaching is perfectly integrated with the three-dimensional simulation in virtual character module. In addition, we also have designed three teaching tasks – static performance, dynamic performance and group creation, which are combined with the information technology, and have overcome many teaching difficulties: effectively integrating stick figure appreciation, learning, experiencing and creation together, thereby guiding students gradually grasp the skills in creating children's figure groups.

Link:

http://www.sohu.com/a/151628797_793135

Suzhou Institute of Construction & Communications

The Promoting Value of an Online Platform for Comprehensive Chinese Practical Activities – Taking Comprehensive Chinese Practice Activity Conversation with Nature as an Example

Tang Chenxiang

In order to response to the requirement of comprehensive Chinese practice activities, we have developed an online platform "Voyage of Discovery in Literature", aiming to give full play to the advantages for online platforms, collect vast teaching resources and promote knowledge dissemination, exchange, reorganization as well as integration.

The main functions of the platform are user logins, tasks-publishing, questions-answering, groups-creating, data uploading, online browsing and interactive comment.

The areas and related functions of "Discovery Journey of Literary" are presented as follows:

"Exploration Log" - Interactive area for teachers and students: publishing teaching tasks, submitting homework and conducting interactive views.

"Emotional Inn" - Area of resource collection: representing texts, audios and videos by theme.

"Time Tunnel" - Area of topic search, where texts on different themes are arranged by time.

"Results Camp" - Area of result display: displaying electronic magazines and conducting comprehensive evaluations.

Link:

http://www.jsve.edu.cn/articles/2017/12/29/59466.htm

Changzhou Liuguojun Vocational Technology College

Fault Diagnosis of EV Aided by OneNote Personalized Manual

Sheng Xi' ning

This project focuses on the teaching activities of typical diagnostic faults of the electric vehicle BAW EV160. Oriented by task-driven class, closely integrated with the automotive industry's needs for new technologies, and assisted by real fault cases, the school encourages students to expand their knowl-edge with the aid of Microsoft OneNote. The personalized manual is presented systematically through-out the whole process of a student's self-learning and exploring. The two-dimensional animation presents from the complex circuit schematics to the current path in real cars, assisting students visually analyzing and exploring possible faults. The three-dimensional simulation software helps students efficiently simulate the comprehensive diagnosis process of EV's electrical system failures, through which students could learn the key skills of circuit diagnosis of new-energy-cars. The self-developed ZigBee Smart Training System could record and provide feedback in real time on students' operation errors and irregularities during real-vehicle fault diagnosis, which would strengthen learners' professional consciousness on standard operation.

Link:

http://www.jsve.edu.cn/articles/2017/12/29/59463.htm

Guangzhou Panyu Polytechnic

Integrating Occupational Training with Vocational Schools' Education for Computer Majors

Chen Huihong

With the aim of achieving win-win results between enterprises and schools, in the last 3 to 5 years, the team has cooperated with nearly 100 well-known enterprises to build incubation centers, set up studios and cultivate students under apprenticeships while initiating dozes of scientific research projects on promoting enterprises and improving students' abilities. Over RMB 500,000 of education mode reform funds was invested to support the integration of occupational training and enterprise education. By synergizing the government, universities, enterprises and social organizations with a "five-in-one" collaborative platform as the medium, it has realized a seamless integration of occupational training and vocational education through curriculum system reform, teaching material reform, enterprise-school competitions, the third-semester occupational training, occupational activities, internship, pre-job training and other practical programs. For example, in response to the high demand of HTML5 game developers in the game development industry. The competency-teaching program has been developed under the joint efforts of various institutions, enterprises, the People's Posts and Telecommunications Press, Jikexueyuan.com and Neuedu.com, which includes the curriculum system and holo-media materials, online and offline training, pre-job training, on-the-job training and real project training, etc. It builds a four-dimensional education system that includes an external environment, internal operation system, education and teaching mode and an operation support mechanism, which builds an overpass between education and training and forms the "mutually containing" education mode. With these efforts, an education mode of the two-way interaction is built which realizes integration between vocational education and enterprise training in areas of teacher flow, teaching implementation, effectiveness evaluation, etc.

Link:

https://www.jikexueyuan.com/course/html5games/

Guangzhou Institute of Technology

A Case on a New Form of Teaching for Virtual Reality Vocational Skill Training

Wang Shi' an

The virtual reality technology applied in this case is the integration of many different technologies, including computer simulation technology, computer graphics, human-computer interface technology, multimedia technology, sensor technology and network technology. It is a challenging and cutting-edge interdisciplinary frontier area and research field. In this case, the multi-channel virtual reality platform, networked virtual reality technology, desktop-systematic virtual reality technology, panoramic virtual reality technology, augmented reality technology, wearable virtual reality technology are deeply integrated with the cultivation of vocational skills, all of which are helpful to carry out virtual reality vocational skills trainings for students. In this way, the "three high and four difficult" problems - high cost, high risk, high pollution, and inflexibility in observing, operating and reproducing in practical-training teaching of higher vocational education has been solved, and thus brings a new form of virtual-reality vocational skills training. Through the professional applications in relevant subjects, such as petro-chemical industry, mechatronics, network technology, industrial robots, vehicle maintenance and repair, art design, catering and tourism, etc., students' vocational skills have been effectively improved. Included in national vocational education and teaching resources, these resources have been nationally popularized in over 20 vocational schools, and achieved good results.

Link:

http://120.25.210.181:8080/wsajsj/ltem.aspx?123-130-0-2-3.html

Nanjing Xuanwu Secondary Vocational School

An Innovative Study on Experiential Learning Based on Smart Class in Public Art and Music Courses- Taking "Guo Yue Hua Zhang" as an Example.

Yin Jun

The case focuses on the environment of smart classes, in which "Music Experience Center" is an open, integrated, interactive and co-developed resource platform, and is considered as an important part in achieving "Cloud+ Terminal" smart classes. In the view of the integration of curriculum resources, this platform covers public musical art courses, which comprises of three modules of western music, Chinese music and world music. It realizes the integration of rich-media resources and supports uploading and downloading resources by user, forming an online co-developed class. In the view of the reconciliation of acceptance and creation, it is not only a resource platform, but also has other functions, like matching music with videos as well as drumming to the rhythm. It supports the creation of in-class art appreciation and activities, as well promotes students' personalized experiences and their consciousness of teamwork. In the view of experiences and feedback, this platform not only records a user's experience path and provides a smart push for them, but also could evaluate and leave messages. Additionally, it could achieve re-learning and re-evaluating according to the video of art practice activities recorded in smart classrooms. In this way, sustainable development and continuous deepening of artistic experiencing would be achieved.

Link:

http://www.njxwzz.com/index.html

IIII Tianjin Sino-German University of Applied Sciences

How to Roll out Enterprise Training Courses in Vocational Schools- Taking the Introduction of Amazon Operation Training Course to Tianjin Sino-German University of Applied Sciences as an Example

Fu Xiaoxi

With the purpose of cultivating students' ability to promote cross-border E-commerce operations, Tianjin Sino-German University of Applied Sciences, in this case, has introduced MBA business mentors and Amazon training curriculum to the Electronic Business Program. Based on the prerequisite of ensuring the original training objectives, the contents of enterprise training courses has been adjusted, to fit the characteristics and meet the specific needs of students.

Most of the previous studies focus on how to apply the formal teaching system in school to the enterprise training in order to improve the efficiency of the enterprise training. However, few studies pay attention to converting enterprise-training curriculum into formal teaching curricula that suits individual schools. In this case, we have conducted interviews with students, corporate trainers and professional teachers to deeply understand and convert their needs into specific training points, and then integrate these into the original training courses. To adjust the original training courses by the means of evaluations and feedbacks by repeatedly revising training, such as listening and scoring, and ultimately to create the comprehensive curriculum system that not only meets the teaching norms and the needs of students, but also help developing students' vocational skills as well as attainment.

Link: http://www.17dsxy.com/

Xiangyang Vocational and Technical College

Using "Internet+" to Promote Teaching Informationization

Xiong Shaogang

Our school has carried out effective reforms and practices in building an educational information-based environment, co-building, sharing and applying high-quality educational resources, comprehensively promoting the reform of education, and improving teaching and the management mode. A great number of human as well as material resources have been invested in many aspects, such as establishing a resource library for professional teaching, creating excellent courses, online open courses, and constructing course test library etc.

- Relying on the large platform, adopting good resources, and achieving the transform from "construction" to "use";
- 2 Using new technologies, exploring new models, and providing suitable education for students;
- 3 Focusing on big data, and achieving the stereoscopic management mode of "teaching, learning, and management";

4 Returning to the nature of teaching, showing teaching achievements, and highlighting the first-class teaching in China.

Link: http://xyzyjsxy.iclassx.com/

Henan University of Animal Husbandry & Economy

School-Enterprise Cooperation on VR Talent Training

Lian Weimin

Working with York Animation, the leader of the animation industry in Henan Province, the School of Information and Electronic Engineering, which belongs to Henan University of Animal Husbandry & Economy, actively carried out school-enterprise cooperation on VR content production. After consultation between the two sides, York Xiji School of Henan University of Animal Husbandry & Economy was established, which serves as a college-animation service outsourcing base. The enterprise provides technologies and projects while the university offers venues and work force, jointly exploring a new school-enterprise cooperation mode.

At present, the project has been on track and has successfully cooperated on the VR panoramic Campus Project with Henan University of Animal Husbandry & Economy. Currently, the 720-degree panorama is a popular visual technology in the world. It shows real scenes with a 360-degree view, and can be used to show a panoramic view of the campus for publicity purposes. The panoramic campus project comprises of two parts: VR panoramic video and VR panoramic images. Technologies that are used in panorama production include: applying panorama head and wide-angle lens to take a picture at every 60-degree horizontal rotation, totally 6 pictures, and then take photos respectively at right above and right bottom vertically, which finally adds to 8 pictures. The panoramic tool is PTGui, which is easy to handle. GOPRO has been used to capture panoramic video and Auopano Video Pro has been applied to stitch the video clips. The panoramic display can be used in a wide range of scenarios from panoramic campus to estate shows, virtual tourism, furniture decoration, etc. Considering its wide popularity, the application of panoramic technologies in teaching exerts a great impact on students' social practice.

Link:

http://720yun.com/t/103jzOhaOw4?pano_id=6767487

Jiangsu Nantong Secondary Vocational School

Virtual Simulation Software Helps Learning Activities of Wireless Networks Man-in-the-Middle (MITM) Attack and Protection

Tang Ying

This subject mainly focuses on the teaching activities of the security protection and awareness of wireless networks. Taking "being capable of understanding principles, attacking as well as defensing, and application" as the main idea of design, making full use of teaching platforms, training cloud platforms, simulation animation, simulation software, network attack and defense sandbox and other information-based technology means. The hidden dangers and principles of wireless network has been presented directly, and the image of the mysterious wireless-network attacks and protections will have been visualized. The entire teaching process is centered on "mission-driven and self-exploration", and the basic network legal knowledge is emphasized throughout the teaching, in order to enhance students' awareness of network security and practical abilities to protect. The simulation animation helps students to understand the principles of wireless network intrusion and common sense of the security diagnosis and protection of Wi-Fi wireless network.

Link: http://www.tianzhi.com.cn/

Jilin Technology College of Electronic Information

Smart Sand Table Demo System for Smart City

Sun Pengjiao

This project mainly introduces five application scenarios related to communication majors, and it mainly studies how to visually and intelligently demonstrate the smart city scenario in the future based on next-generation communication technologies. It includes such 5G supplication scenarios as the virtualization data center, remote medical, smart street lights, smart agriculture, smart home, smart parking lots, automatic driving, industrial parks, logistics parks, V2X car networking. It also contains many modern communication technology application scenarios, such as industrial areas, logistics parks, rural areas, villas areas, as well many mobile network data transmission applications, such as the data transmission process among core networks and base stations, wireless signal transmission processes, also the indoor distribution system design, and the switch among a variety of different scenarios. Through a great variety of communication paths, it achieves the interoperability, and comprehensively and intuitively simulates the typical communication network.

Link: https://pan.baidu.com/s/1hr5fADm

Jing' an Vocational Education Group

The Cooperation of Production and Learning to Train Students' Operational Abilities

Yuan Yunwei

Shanghai Jing' an Vocational Education Group consists of vocational colleges, enterprises and relevant government departments within the region. In order to adapt to the industrial restructuring and upgrading in Shanghai, as well as raising the attraction of vocational education, we have collaborated with schools and enterprises, having piloted the project of "Digital Maker Cultivation Action Plan in Jing' an Vocational Colleges". The Group has tried some measures.

- 1 Collaborating with manufacturers of 3D printers and educational robots, establishing joint labs and cooperatively conducting researches about teaching suitability.
- 2 Holding contests and exploration activities in science and technology for students in the form of double-tutors.
- 3 Inviting enterprises to jointly organize contests.

Link: http://www.jazjjt.edu.sh.cn/

EDUSOA Changchun Vocational Institute Of Technology

Constructing Applied Knowledge Structure System and Optimizing the Construction and Application of Holo-Media Materials

Fang Zhenlong

Through constructing an applied knowledge structure, this case aims to optimize the design and development of the holo-media materials, update the concept and mode of teaching, and promote the quality and efficiency of teaching.

The holo-media materials are compiled with the aid of "Applied Knowledge Structure" system, the contents of which highlights the "Structure of Factual Logic (working process)", effectively solving the incompatibility between teaching order and the rules of students' skill-training. Based on an applied knowledge structure, the design structure of the whole textbook, each unit, and the teaching structures for different chapters/units are all carried out depending on the development of the content system, possible situations of course-learning and the teaching design of each unit respectively.

Link: http://www.zjyunxueyuan.com/

Yangzhou Tourism & Business Vocational School

The Application and Value of the Virtual Showroom in Arts and Crafts Appreciation Courses in Secondary Vocational Schools

Huang Qian

The information technology has been introduced into the class, and is helpful to assist teaching and learning by various means, among which the virtual showroom is one. The virtual showroom is a digital exhibition hall constructed by computer graphic technology. Considered as a three-dimensional interactive experiencing mode, it builds an artificial environment and objects based on the traditional showrooms, and reproduce all the information displayed in physical sites on the Internet. The primary research direction of the project is introducing the virtual showrooms into the classes of arts and crafts appreciation in secondary vocational schools, taking full advantage of this technology to assist teaching.

Link:

http://www.jsve.edu.cn/articles/2017/12/29/59461.htm

EDUSOA Northeast Normal University

Holo-Media Materials - A Necessary Product to Realize the Exact Matching of Teaching Problems with Teaching Resources in Vocational Education

Wang Wei

Since Circular No. 9 of Vocational and Adult Education Division of the Education Department (2010) was issued, breakthroughs have been achieved in the construction of informationization in secondary vocational education. As the first batch of model colleges in China, Changchun Mechanical Industry School started to build the professional team with experts in the field of educational informationization from Northeast Normal University in 2011, members of which have practiced UES model. After six years of development, under the help of researchers from universities, we have innovatively proposed a new teaching medium of holo-media materials. The school has become the first secondary vocational school in China that is developing the holo-media materials to support the reform of teaching and learning.

Link: https://baijiahao.baidu.com/s?id=1588283971931272917&wfr=spider&for=pc

Zhenjiang Vocational Technical School

Exploration of Mathematics Teaching Practice in Secondary Vocational School Based on "Gamification Learning"

Huang Lei

In this case, the "gamification learning" has been applied in the curriculum design for teaching the Analytic Geometry of secondary vocational school mathematics. The educational game – Mathematics has been developed for teaching practices. In this course, game software is considered as an important learning aid. The highlights of the educational game "Mathematics" include:

- 1 The level design for games which is closely linked with knowledge contents;
- 2 The support for cooperative learning;
- 3 Timely feedback and diversified evaluation both horizontal and vertical evaluation;
- 4 The support for personalized learning.

Link: http://www.jsve.edu.cn/articles/2017/12/29/59460.htm

Application of Virtual Reality Technology in Secondary Vocational Schools

Zhang Yang

Take environmental art major as an example. In the traditional teaching mode, the production of the European-style home decoration design case was conducted by 3dmax, and steps which included drawing floor plan, two-dimensional modeling, building frame structure, importing furniture, and then to texture mapping (making material balls), and finally light settings. The production process was tedious and not intuitive, so a great number of students would give up halfway. Now, with the VR interior design platform, the apartment layout floor plan, marking space name, and putting the doors and windows in the appropriate locations. They would use the 3d room, then the layout framework of entire apartment would be completed. The next step is to click "Furniture Decoration", select the appropriate furniture, curtains, flooring, wallpaper, decorative paintings, and lamps. According to the apartment theme of customers, this makes home decoration design simpler and quicker.

Link: http://220.162.12.173/?action=openfile&id=285793

Fujian Business School

Mobile Information Technology Makes Secondary Vocational Education "Alive"

Chen Xiumei

In Fujian Business School, with the help of mobile terminals, the curriculum resources are uploaded to the information-based learning platform (Moodle platform), and could be viewed through the handset APP (Handheld Moodle). The school carries out blended teaching both online and offline, including pre-class theories learning process, on-class internalizing and practicing process, and post-class extending and applying process, and this kind of teaching methodology basically realizes the flipped classroom and promotes the reform of teaching mode.

"Handheld Moodle" App takes advantages of not only the features of the mobile terminal, that is convenient, mobile and easy-to-use, but also the characteristics - information-based learning platform's sharing, interactive and feedback of the information-based learning platform. It helps to change the traditional teaching mode, and implements a student-centered and teacher-led teaching philosophy.

Link: http://m.cnfjsm.com:8000/

Jing' an Vocational Education Group

The Application of Gamification Learning Strategies in Maker Activities

Yuan Yunwei

At present, maker activities have not been listed in the official curriculum in vocational schools, whereas Jing' an Vocational Education Group is trying to apply gamification-learning strategies in maker activities in school. It is suitable to use gamification-learning strategies, because maker activities are often referred to as those activities that "learning while doing" and "learning while playing". The Group introduces competition, motivation and other elements of gamification learning, working with enterprises to organize the annual district-level vocational education contests, which involve "3D Innovative Design and 3D Printing Production Competition" and "Robot Creative Design Contest".

Link: http://www.jazjjt.edu.sh.cn/

Beijing Information Technology College

Teaching Design Methods for Blended Learning

Lu Xiaoping

This case audaciously explores theoretical innovations by comprehensively applying the learning theory of cognitivism, theory of connectionism, theory of cognitive flexibility, cognitive theory of multimedia learning and framework theory of teaching structure, and at the same time, also considering the practices in reality of vocational education. Meanwhile, in order to facilitate the practical application of the teachers in frontline in vocational colleges, a structured elemental analysis model and teaching design methods are given, forming a comprehensive solution of blended learning and teaching design.

Link: http://bxzx.bitc.edu.cn

Yancheng College of Mechatronic Technology

A Study on Promoting Personalized Learning Based on Adaptive Learning Platform - Taking C Language Programming in Secondary Vocational School as an Example

Zhou Haibo

This case is about the application of One–Dimensional Array, Section 2, Chapter 6 of C Language Programming, a core course in the first term of the second–grade students in Software and Information Service major in secondary vocational schools. In the whole process of the teaching, we rely on the self–learning platform, and use learning analysis technology to analyze the whole–cycle data of students. With the help of the analysis results and the characteristics of the students' learning model, we mobilize the software and the hardware in the whole teaching environment to adapt to specific situa– tions of different students, in order to activate and stimulate students' intrinsic learning mechanisms and value the personalized learning style of each student.

Link: http://www.jsve.edu.cn/articles/2018/01/02/59469.htm

Yancheng College of Mechatronic Technology

A Case Study on Information-Based Teaching Methods in Promoting the Banknote-Counting Training

Zhou Ying

The students could watch teachers' operating by using a real-time recording and broadcasting system, which solves the problem that students could rarely clearly see the operations in traditional training teaching. Students could log in the smart learning platform and choose suitable learning contents based on their cognitive level. When faced with a blind spot in learning, they can drag the 3D hand model in the 360° panoramic banknote-counting system from four directions (up, down, left and right) to inspect the details from the subjective, perspective and other points of view. In addition, the system can also show the strength and direction of banknote counting with hot-zones and arrows. Through the circular training of "practice – self-diagnosis – confirming diagnosis – improvement", students can regulate and improve their operant level gradually.

Link: http://www.jsve.edu.cn/articles/2018/01/02/59470.htm

Northeast Normal University

Flying Dreams - Creating Mobile Learning Space for Students of Vocational Education

Wang Wei

Since 2015, our school has cooperated with Changchun Mechanical Industry School to set up the Teaching Reform Committee for Informationalized Vocational Education, becoming the first experimental college in China that deeply integrates teaching media with teaching contents by informationization. During this process, we pioneered the idea of "holo-media materials". In the first semester of the experiment, students in the experimental classes which are using holo-media materials are highly motivated and could deliver better performance than those in a traditional class. One issue, however, cannot be ignored is that the resources are achieved in a low rate, the core influencing factor of which is a lack of mobile terminals. From the second half of 2016, the school started teaching the reform of "reset learning space", and practiced the curriculum reform activities of "great integration of little pieces of teaching materials and great transformations in small classrooms".

Link : http://www.idealworkshops.com/main/web/article/detail/5a92794c363e94df6a8bc306

Jilin City Construction School

Small Input, Big Gain – Exploration of Co–Construction and Sharing Model for the Major of Architectural Construction Engineering on the basis of Holo–Media Materials

Mu Xue, Wang Lei

In 2017, we invited dozens of vocational colleges to discuss the model of co-construction and sharing of resources based on holo-media materials. We chose the major of architectural construction engineering and selected 11 high-quality schools as well as 11 courses of this major. With the help of Internet platforms, top teachers from each school served as editors and shared teaching models, training methods, high-quality resources and curriculum system with other participating schools, resources in high quality have been shared among colleges and universities, as well a great number of construction enterprises related to colleges and universities have been attracted. We have also set up cloud courses for vocational education. Exploration on the reform of teaching mode is currently in process in the 11 pilot schools and is expected to be rolled out to dozens of other institutions where this major is taught, next year by one round of experiment.

Link: http://www.idealworkshops.com/main/web/article/detail/5a9357c6363e94b2118b463e

Changzhou Liu Guojun Vocational Technology College

Online Learning Platform in Promoting Role Transition of Chinese Teachers in Teaching

Zhao Jing

Based on the present status analysis of classical poetry teaching in traditional classroom, the team independently developed an online learning platform "Soul Songs" (hereinafter referred to as the platform) for ancient poetry. Designed to meet the needs of Chinese teaching in secondary vocational schools, the platform aims to help teachers to organize teaching and promote students' efficient learning. The platform covers the Book of Poetry, Songs of the South, Han Fu, Tang Poetry, Song Poetry and Yuan Opera. It has three modules for beginners, advanced learners and researchers respectively, to provide personalized learning support for different learning groups. The platform modules are set by following the basic rules of ancient poetry appreciation: Introduction, Appreciation, Reading Poetry, Resource Center, Song Poetry Forum and My Backpack.

Link: http://www.jsve.edu.cn/articles/2018/01/02/59468.htm

Ningbo Polytechnic

Professional Education Teaching Resource Library of Vocational Education Promoting Professional Education and Teaching Reform

Zhang Qiming

The State-level Professional Education Resource Library (referred to as the Resource Library) was put forward in 2006 and formally launched in 2010. During this period, it has continuously explored various resources, improved the understanding, optimized the management, and expanded the application. Relying on Higher Education Press' s Intelligent Center for Vocational Education and other platforms, 88 professional resource libraries of innovation and 10 sub-libraries of innovation in ethnic cultures have been built, covering all 19 major categories of higher vocational education as well as more than 10 traditional arts and cultural fields (including up to 100 intangible cultural heritage projects). The number of the registered users has exceeded 160 million, and over 1.6 million resources has so far been created.

Link: https://www.tech.net.cn/web/articleview.aspx?id=20170614210254755&cata_id=N003

Huai' an Vocational College of Information Technology

Flipped Classroom Based on SPOC

Kan Baopeng

The computer networks major in our school has carried out flipped-classroom teaching reform based on SPOC. Before the curriculum begins, school-level SPOC courses on the vocational education has been built, according to students' learning characteristics and teaching needs, and this cloud platform has been considered as the online pre-class self-learning carrier for flipped classroom teaching. In class, learning tasks are regarded as the clear line, while knowledge internalization, skill acquisition and quality training as the hidden line. By adopting formative evaluation as a supplementary means, we have successfully designed a series of teaching activities for curriculum.

Link:

http://www.icve.com.cn/portal_new/newcourseinfo/courseinfo.html?courseid=4wu3azgkpazcqtc1amqtqg

Nanjing Health School

Innovative Teaching in Visual Physiology Course according to the Authentic Learning Concept

Xu Xiaotao

The information resources of this course mainly include simulation software of human bodily function, VR materials and mind maps. Simulative training software of bodily functions is a learning software in human physiological functions, which is developed by computer programming technologies. This software has four modules: "Function Overview", "Function Test", "Medical Records" and "Functions and Diseases". It could convert theoretical knowledge and clinical practice of visual physiology into information-based learning resources by integrating sounds, images, animations and inter-active presentations. It smartly adopts VR technology and reasonably transforms clinical manifestations into macroscopic real world, which greatly enhances students' experiencing perception and leaves deep impression in their mind. At the summary stage of the course, mind maps have been used to demonstrate the hierarchical relationships between various topics and to establish memory links among keywords, images, colors, etc.

Link: http://www.jsve.edu.cn/articles/2017/12/29/59462.htm